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Session 33 PD
LTD Experience Trends: Social Security and Private Programs

Track: Health Disability Income

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Summary: Current information on experience trends in public and private LTD programs is essential for use in pricing and valuation work. In this session, representatives from the Social Security Administration and the SOA Group Disability Experience Committee discuss the recent morbidity experience that they have observed in their respective programs.

MR. DANIEL D. SKWIRE: We have three panelists today. I'm from Milliman USA and will begin with a brief overview of the environment in which disability plans are operating these days and will give you the context in which to understand some of the more detailed information that Eli and Al will present.

Our second presenter will be Eli Donkar. Eli is the deputy chief actuary at the Social Security Administration (SSA), where he is responsible for forecasting the financial experience of the Society Security trust funds, with a particular focus on the disability trust fund. He's going to discuss some of the experience patterns that he's observed in the Social Security disability program.

Our third speaker will be Al Livingood. Al is an assistant vice president, responsible for group experience analysis at UnumProvident Corporation. He's involved in risk planning and in the monitoring of experience trends for group disability products and group life insurance products. He'll talk to us about some of the trends that UnumProvident has been observing in its business in the private LTD insurance market.

Let me start off with a few general observations about today's LTD environment. If

Note: The chart(s) referred to in the text can be found at the end of the manuscript.

you're anything like me, disability insurance (DI) is your whole life. You cook DI, you eat DI and if you have 15 free minutes at one of these nice resorts where they put us up for a meeting, you take your black socks, your wing tips and a couple of LTD contracts and head to the pool, where you spend some quality time reading through some contract language.

As strange as it may seem, not everyone is like us. In particular, LTD benefits in the larger world of employee benefits are sometimes low on the radar screen. Employers, in thinking about their employee benefits, focus much more on health insurance and pension benefits.

Chart 1 shows the type of environment that employers are working in. This shows the increase in total employee benefit cost as a percentage of overall employee compensation, and the increase has been a quantum change over the past few decades. Most of this is driven by pressures on health insurance costs. As employers make decisions about their LTD plans, this is the environment that they're in. At the same time, health insurance is a high-profile type of benefit. It's seen as an entitlement in a way that DI often is not. As difficult decisions are made about which benefits to fund and which benefits to continue offering, LTD sometimes ends up on the short end of the stick, and this is one of the important reasons why.

Another important employment trend that has a significant impact on LTD insurance is a change in the employment tenure in the U.S. working population. Chart 2 shows the change in years of experience at a job by age band and how that has changed over the past 15 years. It differs a great deal by age, but keep in mind that the average tenure also differs by age, so the percentage difference is not that wide between these groups. The average tenure for someone in his 20s might be only two or three years, so a change of a few months can be significant overall. The patterns are quite distinct. People are spending less time at a single job than they have before, and that has a profound impact on how their employee benefits operate. It's something that LTD insurers need to consider carefully as they work on their plan designs, pricing and the manner in which their products are offered.

I thought it might be interesting before moving into a discussion of experience trends for private LTD and for the Social Security programs to take a look at a couple of related patterns. We'll look at a couple of charts related to experience on individual disability offerings. I have to say right away that this is excerpted from a presentation a few months ago using data from the SOA Individual Disability Experience Committee. I want to show you a couple of the general trends that came out of this research.

Chart 3 shows the pattern of actual to expected claim incidence rates versus the 1985 Commissioners Individual Disability table and looks at the past 10 years (the 1990s). You'll see experience that began somewhat above the table and worsened for a few years in the mid-'90s. It has shown a significant and steady improvement

since that time. We're seeing a fairly significant trend of decreasing incidence rates relative to the '85 CIDA table.

Chart 4 shows some of the experience results for actual to expected claim terminations versus '85 CIDA, so here are the pattern of recoveries and debts relative to expected levels for people receiving benefits for disability. The axis along the bottom is the claim duration in months, so what this shows is that during the first 18 to 24 month of claim, the actual level of recoveries and debts of claim terminations is well-below the level of terminations predicted by the table. Beyond that, it's well-above the level predicted by the table. When you combine those two patterns, the result is an increased duration of disabilities relative to what the table would have predicted, which is fewer recoveries earlier and more later on. It's a significant pattern and one that has changed from the time in which this table was developed.

Another source of some information about overall disability trends is information that is available on occupational injury and illness rates. Chart 5 from the Bureau of Labor Statistics shows the overall pattern in incidence rates for occupational injuries and illnesses over the past 10 years, and you see a similar pattern to what we saw on the individual disability rates though a little more consistent. There are probably a variety of reasons for this, such as improvements in workplace safety, as well as changes in the types of occupations that people do in the United States. You've heard about more growth in service occupations, for example, and reductions in jobs in manufacturing industries. I'm sure that some of that is reflected here, as well, but we're seeing a fairly distinct trend in occupational incidence rates.

The patterns of occupational injuries and sicknesses vary considerably by industry. Chart 6 gives a sampling of industries. As you might expect, some of the white-collar industries such as legal, medical and financial have lower-than-average occupational rates of disability, while some of the more manually intensive industries such as agriculture and manufacturing have higher-than-average rates of occupational injuries and sicknesses.

I bring this up not because the information is surprising but because it's important to keep in mind as you listen to the presentations from Al and Eli. The programs that they are talking about cover a different population. The more white-collar industries you see at the top of that chart have a high rate of penetration for LTD insurance. When you look at private LTD plans, a large part of that population consists of those industries up at the top of the chart. When you're looking at experience from the SSA, it covers almost everyone. You're looking at a broader pool, and it's going to include a lot of exposure from some of those industries with the higher rates of occupational disabilities. That's something to bear in mind.

Other differences exist in the populations that are covered by these programs, and I've shown some statistics by the size of employer. Chart 7 shows the percentage of employees who are covered by group LTD. For larger employers, a higher

proportion of the employee population is covered by private LTD insurance programs, while, once again, the Social Security program is going to cover almost everyone. That's another significant exposure difference in these two populations.

In a similar chart (Chart 8), and this relates a little bit to the industry segments that we put up before but in a broader grouping, professional and technical groups have a high penetration rate for group LTD insurance, while clerical and sales are lower. Lower still are blue-collar and service employees, where essentially 100 percent of each of those categories is covered under the Social Security plans.

After that brief introduction, I will turn the microphone over to Eli to tell us a little bit about the Social Security experience.

MR. ELI NICHOLAS DONKAR: Social Security involves the actuary, who is responsible for forecasting the financial conditions of the two Social Security programs, which are the Old Age Survivors Insurance (OASI) and the DI programs long into the future, and you may be familiar with the annual trustees' report that came out talking about the 75-year status of Social Security. Most of the information that people get in the papers is focusing on the so-called Social Security solvency problem, which is an issue largely for the retirement program, and we can talk a little bit about that, even though it's only indirectly related to this.

The disability program in terms of dollars spent is still a large program. We spent something like $70 billion in benefits for our disability cash program last year. That represents only about 15 percent of total benefits spent by Social Security because by far the largest portion of the Social Security program is the retirement and survivors' program.

It costs almost half of our administrative dollars to administer disability, as all of you who are here who know about administering disability programs may realize. It's a difficult thing to do. From a day-to-day administrative perspective, disability is an important part of what we do all the time at Social Security.

We regularly ask outside experts to come in and take a look at what we're doing and make suggestions about how we can improve what we're doing. It's a continual improvement process, and Dan was part of the panel that we asked to talk about these things. It turned out to be a two-way street because Dan ended up learning a little more about what we did at Social Security and said that maybe a few more people might be interested. That was the genesis of growth, and I hope that it'll turn out to be the case.

As Dan said, we have to point out upfront that it's a different type of program from the programs that most of you are probably used to dealing with for a number of significant reasons. The main reasons are those that we typically think about what we learn about DI.

First of all, one of an insurance company's main risks is the moral hazard, and we're trying to make sure that we're selling insurance to people who are reasonable risks and that we're not overinsuring them. In the Social Security disability program, all of those options are off the table. We insure people working in covered employment, which includes almost everybody. The benefit levels are prescribed by law. They're the same types of benefit levels that are set for your retirement benefit, except it's based on career average earnings, but only over your active career, and the averaging period stops at the point of disability. Typically for retirement cases, that's averaging 35 years of index earnings, but for disability it can be as short as two years, depending on the particular circumstances.

The benefit levels are determined by the replacement rates and the benefit formula, and that is a weighted formula. Because it's a social insurance program, it has higher replacement rates for people with lower career average earnings. Some replacement rates can vary from 90 percent at the low end, which probably no disability income insurer would ever replace, to perhaps 30 percent to 40 percent in the midrange and to something like a 25 percent replacement rate at the high end.

We certainly aren't overinsuring the people at the high end. We may be overinsuring the people at the low end, but we're not replacing much money, so again there is a mixture of things going on. I mention all of these issues only in terms of trying to place this in the proper context. We then have to think about what the definition of disability is. The Social Security definition is something that's prescribed in the law, but to put it in terms of what you normally would think of in the private disability sector, it is in any occupation a permanent disability. It has to be from the beginning. What's not mentioned in here is that there is a five-month waiting period, so this definition of disability has to be sustained over five months before you can even be considered for starting a disability benefit. The key thing is inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment, which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months.

For those of you who are familiar with disability products, you might ask how they evaluate that. There is a lot of leeway in how that can be evaluated, although it's clear that it's any substantial gainful activity, so that means any occupation product.

In practice, how the determination is made is a distributed process. When the disability program was set up in '57, it was looking for a way to incorporate this into things that already existed. I think all states had disability determination services (DDS) that were already involved in state activities trying to provide vocational rehabilitation services to their states' residents. The disability determination procedure was instituted at the state level, and the DDS has performed a service for us on the contract.

There's supposedly a national set of rules, but whether they're implemented in the same way in every state is an interesting question that nobody has been able to resolve. There is a basic prescribed process, — the five-step sequential evaluation process, — and the first thing we do is determine whether somebody is engaging in a substantial gainful activity (SGA).

What does that mean? The way the regulations have been written to implement this is that they specified an amount in the law, which originally was $100 back in '57. It had been increased in an *ad hoc* manner for a number of years on a fairly regular basis until, as a cost-cutting measure in the '80s, it was held constant at $300 for 10 years until that became an untenable position. It was untenable because in effect you're cutting back disability benefits by keeping that constant over time. It then was increased to $500 and held constant for another 10 years for cost-cutting reasons. Sometime in 2000 they put regulations in the law to say that this was going to be increasing with the average wage index every year. It keeps it in a constant definition over time in terms of what's being replaced. The current level is about $800. It is increased every calendar year.

People who make more than $800 a month automatically don't satisfy the definition. If they're making less than $800 a month, we have to evaluate the actual impairment. They have to have a severe impairment. If they have an impairment that might satisfy our definition but despite that are earning more than $800 or whatever it is a month, they automatically are denied the benefit. If they have this impairment and are not making SGA, we look to see if it's a severe impairment that satisfies the durational requirements of the law. If they have an impairment that satisfies the durational requirements, we go on to evaluate whether it is severe enough to satisfy our definition.

At that point, detailed regulations that are regularly updated in terms of medical listings prescribe conditions of the certain severity or are specified to satisfy our definition. They either meet or are equivalent to the listing. If they don't do that, there is a further determination called a determination of residual functional capacity that looks at the applicants' particular education and experience to see whether they can do their past work or other work. If they aren't doing SGA, have a severe impairment of the right duration and either meet or equal the conditions or if they don't but can't do past work or other work, they get a benefit.

Even with these prescribed steps there's a lot of judgment. What can happen over time is that, even with the same definition of disability, you can have varying results depending on who decides to apply for a benefit because everybody is insured and depending on the way the definition is applied, in a particular political sense.

As I mentioned before, in calendar year '03 only 15 percent of the $471 billion in benefits payments went to the DI program. The rest go to OASI. However, the $4.5 billion in administrative expenses are approaching one-half.

Most people focus on what's happening with the retirement program, but if you look at Chart 9, if you separate out the experience of the OASI program from the DI program, the Social Security programs are essentially designed to be pay-as-you-go. Today's taxes are supposed to pay today's benefits, with a slight reserve, and what's been determined to be a sufficient level of reserve is one year's worth of benefits, so if you look at what you have on hand at the beginning of the year compared to what you expect to pay during the year, 100 percent is a good thing and more than 100 percent is even better. Less than 100 percent is not good.

We have a rage of estimates labeled I, II and III. We don't need to go into all of the varying economic, programmatic and disability experience assumptions, but III is the most pessimistic. The trajectory of what's happening with disability is a lot more pessimistic than what's happening with the OASI program.

All of those difficulties forecast to happen to Social Security in 30 years are going to be happening to disability in 20 years or less. There are going to be some serious issues to be dealt with even before that goes on. What I hope to do in that context now that you have a better understanding of our program is to show you what our experience has been and show you some of the projections of where we expect to go with these programs.

There are some analogous areas where perhaps the private individual market can learn from the extent of experience that we have. We have people on the rolls already. We have some new awards during the year. We have people leaving during the year, and then we mete those out that's how many we have left, except we do this in great detail. Our model forecasts are by single year of age and by gender. We look at the experience in terms of the nature of the impairments that come in, although that's not part of our forecast model because at least for what we're doing now, it involved too many parameters that may not even be forecastable.

In Chart 10are all of the inflows and outflows, and the two key lines are at the bottom. The light blue line is the number of people coming on the rolls, and the black line with the Xs is the number of people leaving the rolls. The awards are always higher than the terminations, except for one small period back in the '80s, which means that our rolls are constantly growing, and that's what the red line shows. It doesn't look too good. There are many reasons to explain all of those patterns. The dashed line in between is also something that's useful. We'll look at it in a minute in terms of what's happening with the economy. Since we're insuring everybody, who decides I'm disabled enough to need a benefit and that I can apply for that benefit?

The key difference between the insured population and the people getting awarded benefits is who comes and applies for benefits. There's some variation, and one of the things that people like to say is that because everybody is insured, when the economy falters, people apply for benefits because they're marginally employed or

often are people with disabilities who are put out of work first. If they're out of work and have a disability that applies to a definition, they can get a benefit, so they'll come in.

Chart 11 shows a pattern of huge increase in what's happened recently, and that's an aberration. It's not the economy; it's not anything. It has something to do with record keeping and how they're tracking work in the system.

Let's look at each of these pieces in a lot of detail, especially the number of people because the number of people leaving the rolls are leaving for a limited number of relatively predictable reasons. What's important is who is coming on the rolls.

In Chart 12 are two scales, and you'll have to keep track of what scale is on what side of the graph. The key is the red line, and the scale on the left tells you that gives you the order of magnitude of the number of people that are receiving awards. Over the past 30 years, we've had a lot of variation in the number of people receiving awards, reaching a peak in '75, dropping back down and then steadily increasing since then.

There's a lot in that picture because some of it going forward is the aging of the population, but historically there are a lot of political stories behind what's happening. That's the other hazard that I mentioned that we worry about as insurers. We worry about the moral hazard and making sure we're insuring the right people and not insuring a benefit that's too high. But in our environment, what happens when the disability program is susceptible to people's perceptions of appropriate disability because the program is prescribed by law? Several times over this period of time, in reaction to some of these trends, laws have been passed either to restrict the program or to expand it. We can talk about those laws, and I'll mention them as we go along.

What's more relevant and what's useful? The one thing that we can control is what we know about the aging of the population. We have detailed demographic forecasts. We know who is insured for a benefit. It's almost everybody. There's a recency of work tasks for disability benefits, but it's almost everybody, so we can look at the awards as a percentage of the people who are insured and not already receiving benefits. That's what we refer to as incidence rates, which are plotted on the right-hand side. We also can look at this by age and gender. We know that people in older age brackets tend to have higher incidence rates, so in the bracket of the population that's aging, you would expect the incidence rates graph to go up regardless. That's part of what's happening in the future.

You can do a standardization and adjust for age and gender, but at least over recent years, except for an aberration, which I can explain in the recent past, and into the future, we expect that the growth of the program is going to be the result of the aging of the population. We're not anticipating that some of the aberrations

that happened in the past will happen again. You never can tell.

Let's look at this from a number of different perspectives. As I mentioned, a lot of people assume the economy is a big part of the picture, but there are perfect counterexamples to that statement. On Chart 13 is an interesting collection of things. One is a line for applications for benefits. The dashed line is awards. The other line is the unemployment rate, which is a useful proxy in the rationale that I gave for what's happening with the economy. If you're doing a sophisticated model, there probably should be some lag between what happens to the unemployment rate and what's going to happen with our incidence rates.

There are some correlations in this period of time, but there are also some significant counterexamples. In the early '80s, there was a big recession, but we had some of the lowest incidence rates in the history of the program. Why did that happen? We have to look at the full political story behind this chart.

In '74 there was a federalization of all state welfare programs. It is referred to as the Supplemental Security Income (SSI) program. The SSI program pays means-tested benefits to people on the same basis: If you're over 65 or if you're disabled and satisfy the same definition and you satisfy these limited resource and income limits. There's a fixed benefit. It's not earnings-related, and it's offset for any other income that you have. There's a welfare issue there. It satisfies the same definition, and the Title 2 benefits have to pay first because they are insured benefits.

The SSA in '74 was assigned the responsibility of administering this program, so we administrate this welfare program and are making disability determinations for both programs. In '74 when they federalized all these formerly state programs, there was a big outreach effort to find all the people who were entitled to this new benefit. In the process, when they applied for a Title 16 benefit, an SSI benefit, they also had to apply for a Title 2 benefit because the welfare benefit requires that you apply for any other government benefit that you might be entitled to first because those benefits should pay first. What happened was that, although there were issues with the economy back then, too, because of this other program — we were bringing in all the welfare benefits — we also brought in a lot of people who were entitled to Title 2 at the same time.

It caused a big growth in the DI program. Those of you who are as ancient as I am in terms of Social Security know that there were some severe financing problems because of overindexing of the program back then, and some amendments in '77 restricted what was going on. What happened was that we made the mistake of paying out too much in benefits, especially for disability. We had high replacement rates. They turned that around, and almost immediately as a result of this focus on the problem with DI, the experience started to turn down. Congress caught up with what was happening and passed another set of amendments that lowered benefits for families of a disability recipient, required that we check the disability status every three years and do a lot of things to try and bring disability back in line.

When those amendments were passed in '80, the Reagan administration made a serious effort to enforce it in a way that made sense from an administrator's perspective but that resulted in targeting people with mental impairments. The mental impairment lobby lobbied the Congress, which undid a lot of what happened in the '80 amendment.

In '84 they passed a new set of amendments that required us to write new listings for mental impairment and that made it easier to get benefits as a mentally impaired person. What occurred was an immediate rise in awards almost entirely attributable to mental impairments.

This contributed to some interesting things in several ways. On average, the mentally impaired disabled people are younger. It meant that our rolls got younger all of a sudden. What immediately happened when we look at terminations is that the duration on the rolls got longer. Cost exploded. That's where we are right now. Some of this is related to the economy, as I said before, but you have to interpret the experience in the context of the political environment that gave rise to it. My only point is that the economy does have an effect on us, but that's not the whole story. Many times it's the political implementation of the law that's relevant thing.

The idea of the next two charts is to give you a sense of how the political environment over the past 30 years translated into what's happening with our experience. In the period starting in '85 through about '95, there was a big increase in the number of people coming on the rolls at younger ages. That seems to have stabilized now, and what we expect is a growth in the future is going to be as a result of the aging of the population.

Chart 14 gives age-specific incidence rates. As I mentioned before, the older age brackets have higher incidence rates, so as the population ages, we expect to have higher proportions of people coming on the rolls. Chart 15 shows that women represented a significantly smaller percentage of the new awards on our rolls in the past than they will in the future. This was the result of the fact that in an environment 30 years ago, women had lower labor force participation rates. That's changed recently, and therefore they had lower insured rates and so weren't eligible for the benefits. Now the labor force participation is increasing, and as a result we expect them to have more parity in terms of incidence in our population.

There are a lot of interesting ideas here. Dan was mentioning the CIDA tables, and I guess there's an effort underway to update some of the standard tables. There's some interest in this experience. We do track all this experience because, for obvious reasons, this tells us something about what's going to be happening in the future. However our models don't yet use this as part of a forecast, so you'll notice I only have historical experience here.

As Dan mentioned, because we cover everybody, musculoskeletal impairments tend to be the biggest driver (see Chart 16). These things are stacked in the order that

they contributed back in '98, I think. You need to read the reasons across from the bottom. Mental disorders have been the biggest contributor. Musculoskeletal fell to second, whereas if you had gone back 20 years, that wouldn't have been the case. The rest of these are self-explanatory.

HIV impairments are under the infectious/parasitic category. When this first happened in the '80s, the SOA became heavily involved, and Bob and I had done some more studies. The category was nothing before then. This bulge was what was happening in the late '80s and early '90s, but as I mentioned, it has shrunk recently. We assume it's largely because the current drug therapies enable people to stay in the work force longer. There's an incentive for them to be in the work force because you get health care. In the Social Security disability program, there is a five-month waiting period to get your cash benefit, but after you get your cash benefit, there's a 24-month waiting period until you can be entitled to Medicare.

If you leave the work force to get a cash benefit, you lose your health care unless you also happen to be poor enough to qualify in part for Medicaid, which is the welfare medical care benefit and we're not going there today. To the extent that the people with HIV infection can stay healthier longer, they stay in the work force, so we still track those experiences, but it's not as big of a contributor as it used to be.

Let's move to termination (see Chart 17). There are several reasons why people can leave the DI rolls. One is that they recover. That doesn't happen often, and with good reason. Recovery means that they are able to work, and we've gotten them on the rolls because we said they weren't going to be able to work ever in any job. That's not entirely true, and it's a subjective definition. We do have some numbers of people that are removed from the rolls each year because we do this periodic review. That's approximately 20,000 a year.

There are additional things because some people do make an effort to work their way off the rolls. We have various work incentive provisions that let people work for a period of time without losing their benefits and encourage them to try to work to a level where they can do SGA, and another 20,000 to 30,000 a year are leaving the rolls as a result of that. The sum of those two things, either our continuing disability review (CDR) or the others, contributes to this piece.

The line at the top is an illusion. It refers to things like failure to cooperate. When people are on our rolls, we can refer them for vocational rehabilitation (VR) services because we're trying to get them to do that. If they refuse to cooperate with the VR agency, they can be removed from rolls. There are other small things like that that don't amount to much.

Most of the terminations happen because of two things that are inevitable: aging or death. Under the Social Security program, people who are receiving a disability benefit are converted to an old-age benefit (OAB) when they reach normal retirement age (which is increasing gradually from age 65 to age 67 over the next

20 years). At this point, they are no longer tracked in the disability experience and are paid from a separate trust fund.

FROM THE FLOOR: Eli, can I ask a question on that chart? The number of "others" in that thin line seems to increase starting in the late '90s or '00. It looks as though it maybe projects a further increase, and maybe you decided one example of many, but are you suggesting there's an increased focus on managing the claims of current claimants to make sure they were complying with your requirements?

MR. DONKAR: Yes, some of this looks funny as it's shifted. To be honest, I have to look to see. This has to do with some other issues related to the welfare program.

ELI DONKAR Just as there's always a story about every piece of the award graph, there's a story here. I can tell some of the stories in a second. I'm impinging a little bit on Al's time, but to answer Dan's question, no, we're not projecting anything specific out here. There are some issues here, for example. The trouble with doing a stacked area chart is that something is happening, and the bottom gets pushed into the top. What's happening down here with conversions to OABs has to do with the gradual way in which the normal retirement age is going up. Normal retirement age is increasing two months every year for six years until it increases one year, and then it stays stable for a while. What happens for this period of time starting in '03, rather than having 12 months of birthdays to convert every year, we have 10 months of birthdays to convert. You have this artificial decrease, and then it goes back up, and some of this stuff is pushed back up here.

I'm guessing this piece has to do with something else, which I can tell you as an aside but won't go into detail about. There's something else funny going on if you look at the awards closely, too, in terms of something related to what's called a special disability workload. When we process claims for SSI benefits, we miss the fact that some people were insured. We're now processing approximately 300,000 such cases. Many of those people are already dead, but we'll pay some benefits to their estate for some period of time previously that they were entitled to (Side B) and they're both tracking mortality or tracking age. Either you die or you get old, and that's what's happening here. There are some things having to do with the CDR process, where we look at people every few years. Terminations are not an interesting story from the DI perspective. It's mostly in that.

The interesting thing is that the previous graph was numbers, and the numbers are going to be growing because the population is growing, but as a percentage of the total, the rates are declining. Chart 18 looks at those numbers but as a percentage of the people receiving benefits, or the people in force. You see essentially the same picture. There was another spike in the early '80s, which is an interesting story. This was the same year as welfare reform. Congress passed a law saying that neither drug abuse nor alcohol addiction can be the primary reason for receiving benefits, so we had to review everybody on the rolls. People who were receiving benefits for either of these reasons had a diagnosis code of DANA, but we had to

terminate them if they couldn't be disabled based on an examination of all other impairments that they might have as a result of the DANA, so that spike was a termination.

What I've combined in Chart 19 is the number of people receiving benefits, and that number is constantly going up. This chart looks at it as a prevalence rate and adjusts for age and gender. We see again that most of the increase in the future will be the result of the aging of the population. That's all I have right now.

MR. ALLEN D. LIVINGOOD: At the beginning, I'm going to look back in time over only the past 15 years or so. It's a little bit harder for us to get data back beyond 15 years. I'm going to be focusing on a couple of the costs that drive LTD, but by no means am I going to get into all the factors, partially because some of them are going to be covered when we have an industry table at the fall meeting.

I've tried to break down some of the major drivers and trends into some categories for ways of thinking about them in terms of how they're impacting us now versus how they impact us over the long-term. I'm calling one category secular and long-term. I have some __from aging_that I'll show. I'll have some portion of the terminations with the death rates. I want to spend a fair amount of time talking about cyclical and short-term impacts, one of those being interest rates and another being the incidence or claim frequency. I'm not going to spend time talking about other categories of expenses such as claim recoveries or resolutions, offsets from the SSA or other programs, or the cost of capital or the rate of return that you need to meet in your pricing.

I want to mention that the changing nature of the drivers and trends is reasonably complex if you're in the disability business. There are times when the dynamics have been rapid and pronounced, and I think we are in one of those times. It can be difficult to measure the impacts, partially because of how much knowledge there is in the market versus how much is stale knowledge with some of the termination tables being slightly out of date.

Let's look at some of the aging impacts. Based upon some census information, between '90 and '00, the working population aged two years. For those of us who are in disability, that is a cost component that we have to consider, and it's also a cost component you have to consider given that we typically have a rate guarantee that's offered with the business as well. You may have a period of a two- to four-year rate guarantee during which time some of your population can age slightly.

The largest portion of the increase is coming from the 45 to 54 age bracket, which has moved from approximately 40 percent of the working population in '80 to approximately 50 percent based on a U.S. Census Bureau projection for '10.

Chart 20 shows that we're having some impacts on claim frequency or even on claim costs because of the aging of the work force. That does not mean that all of

those costs are coming from the older workers. Work that we're looking at now and work that's publicly available show that young employees are having changes in the types of claims that they're submitting, including more claims that are related to obesity or to other factors such as diabetes. They are affecting the younger workers. I don't want everybody to get the feeling that only the older age component is causing the claim costs to increase.

This is more of a demonstration that's trying to show some aspect of the claim costs for LTD. The ages here, if anybody picks up on that, aren't ___; the selected ages are to show some of the pattern and some estimates of the impacts of aging along the disability curve. They are in the range of 4 percent to 8 percent per year. This looks at the claim cost in total, which includes both a frequency component and a severity component. Based on some of our own information, we've seen aging of approximately four to six months per year. When I was talking earlier about the rate guarantee, that's something to consider given that you might have that much aging.

Next, I want to look at what I consider more of a longer-term or secular trend, one that may be perceived as relatively stable over time. But I want to show that it isn't necessarily always that way, at least based upon some of our data. Chart 21 shows actual death rates. If we're thinking about disability, the rates need to be considered for the makeup of the block that we have, so if you're going to look at this and use it for any purpose for pricing, you want to look at an actual expected death rates basis, but I put in an actual for demonstration purposes.

We saw that our death rates were decreasing in the early '90s and since then have been relatively stable. It's another example of something that typically we would assume is reasonably stable over time, yet there were some notable changes that occurred in our block up through about '96.

Moving on to shorter-term trends, or less secular trends, and to some of the more cyclical impacts, Chart 22 shows a cost component for our insurance that all of us are probably well-aware of, in terms of the pricing and of reserves. Rates have been decreasing since '99 because of some federal policies. Those of us who are in the industry probably know this relatively well, but if you have a 100-basis-point shift, that's an approximately 4 percent impact on the cost or the prices.

This is something that affects most of us in the commercial lines of business. Some of the effects over time may have been different, depending upon where an insurer was with its yield at a certain point, but since the rates have been coming down, we've all been affected by this over time.

I pulled some data from the SSA and put together Chart 23. We've been looking at mostly the past 15 years, and that's partially because that's where it's easier for us to get some of our data. We've been looking at what's been happening in the past two recessions and the recoveries from those recessions. The recession in '90

lasted approximately eight months, and we've tried to show that with a shaded portion there. A recession also occurred in '01, which is shown as a shaded portion of the chart. The '90 recession went into '91 a little bit.

We've been looking at what's been happening to the claim frequency in our block around or after those recessions. We also looked at what happened to the Social Security disability awards during the same time frames. Eli mentioned that during part of the 30-year horizon that they were looking at, there were time periods where the economy may not have been having an impact or had more of a political impact. In the past two recessions, we've seen some similar patterns of our experience with the patterns seen on the Social Security disability awards. I'm going to delve into the frequency aspect a little bit more around the recessions.

I'll explain what Chart 24 is trying to do and give you a little perspective of why I started looking at it this way. This past fall, the actuarial club of Hartford and Boston had a meeting, and the economists from John Hancock and the economists from Cigna were speaking, and they were talking about how the two recessions in '90 and '01 had similar effects as a jobless recovery. That made me go back and look at what was happening in our incidence over those two same recessions, and this is one way that I'm trying to show that.

It looks at the rate of incidence on our overall block at the end of the recession and counts that as one. It also looks at a change over time relative to that point. In both cases, in the '90 recession and the '01 recession to the point that we have data, which goes through the end of '03 or 0.8 on the red line, we see a similar slope. The slope tells you that the rate of change is similar between the two recessions. The chart also is trying to show without necessarily showing the rate how long there seemed to be some potential impacts from a recession on the incidence rates.

One of the things that we're going to try to get into and have some perspective on is why there is an increasing frequency of claims in a recession at least in the past two recessions and why it seems to increase long past the end of the recession.

The other thing I should mention is that if you're looking at this and looking at the '90 recession and the overall incidents in our block, you'll perhaps note that it doesn't necessarily return to prerecessionary levels. A couple of aspects can explain that. One is the aging over time of the block, or the working population that we talked about earlier. Other aspects can be the mix of business you have by elimination period or by size of employer that we'll get into a little bit later which has an impact on frequency as well.

To try and figure out why the frequency of claims appears to have a leg well beyond the recession, we are looking at economic indicators that may give us some insight. We've looked at about 35, but I'm only going to talk about two to four of them in the presentation, namely the unemployment rate and consumer

confidence. This is a similar concept in terms of the chart as we showed in the previous page of incidence, where we're trying to look at what the unemployment rate is at the end of the recession and how these rates track compared to the '90 recession versus the '01 recession.

Again, we're seeing that both the unemployment rate and consumer confidence are tracking reasonably similarly over both of the two recessions. They're quite similar. In both cases with the unemployment rate, the increase has been approximately 225 points. With consumer confidence, in both cases we've seen an approximate 60-point drop.

We found that in both cases, these are strongly correlated with our incidence since at least '88. With consumer confidence, correlations are approximately 0.6 or a little bit higher. With unemployment, they're a little less than 0.6.

I mentioned a while ago that incidence by size of employer can have some impact on the mix of business and on your overall block incidence. These figures in Chart 25 are doing the same thing as the ones two pages ago, but they're focusing on looking at different segments of our block by the size of the employer.

In the upper left, we have the smaller employers with less than 500 employees. In this case, three things are key to look at. One is the slope of the line relative to the recession point. Another is the level that it ultimately reaches up to. The last one is the timing when the incidence starts to change from the level it had been at the end of the recession.

In a small case with less than 500 lives, the change in incidence was exactly the same so far in the two recessions. In midsized employers with 500 to 2,000 lives, the increase in incidence in the current recession was less than it was in the prior recession. In the chart at the bottom right, which shows our large case block and some of the employer with a little more than 2,000 lives. Up until the end of '02, the incidence experience was relatively similar in both recessions and has been slightly steeper in '03.

When I look at large case versus small case, the incidence increase was a little bit steeper following the recession on large case employers in both recessions. Ultimately, and this could be the result of other factors of mix, the small case did reach a similar level of incidence increase over time as the large did. It just didn't get there quite as fast.

In Chart 26, we took a look at some of our sectors. What I was trying to get to is that it's not necessarily in all cases because of the economy, so we chose some of our sectors and grouped them. These sectors are anything that relates to the medical sector in the economy. I wanted to look at what happened over time. In this case, back in the '90s, industries that are related to the medical sector had an increasing incidence that came back down in the late '90s.

One of the things that may be driving this is that in the mid-'90s, the U.S. was going through a managed care process in the economy. I've broken out a reasonably small subset of our block, which is doctors. In that particular case, we saw a large spike in incidence around '94 to '95, which is similar to the time period when individual disability income (IDI) carriers saw an increase in perhaps doctors and maybe even dentists in terms of the frequency of claims that they were experiencing perhaps because of managed care. Even though I think there are some impacts to the economy, this was one place where I thought there were some other drivers as well.

In addition to looking at things by the size of the employer, Chart 27 shows some impacts by some standard industrial classification (SIC) sectors, some groupings that we've worked with internally. One of the comments that I want to make is that in the '90 recession, the retail, transportation and utility and manufacturing sectors all saw some increase or some impact perhaps because of the '90 recession, but we didn't see much of an impact on wholesale in that same time period. Yet when you move forward to the more recent recessions, those time periods around '01 to '02, a couple of things stand out, or at least they seem to stand out from my perspective. First, it looks as though the incidence impacts have been more severe than they were in the '90 recession. Second, it looks as though there have been more impacts in the wholesale sector than there were in the previous recession.

I'm going to try now to get into a few things that could explain some of that, but before I do, I want to mention a point that will come up in another chart. If you look at the manufacturing sector, which is the red line, in '90 there was a bit of a spike. Later I'm going to show what happens with industrial production and how it relates to some aspects of what we see for our incidence on the manufacturing sector. In the '90 recession, industrial production reached its peak in the expansionary time period in June '90 and then started to decrease. Keep that thought in mind as we move forward. I'll talk a little bit more about that when we get to a later charts, but it certainly seems as though there is some correlation between industrial production and what happens to the incidence in the manufacturing sector.

Some of the ideas in Chart 28 came from the Hartford and Boston actuarial society club meeting that I went to and also from some papers that came from the Fed looking at the jobless recovery in the past two recessions. The term "jobless recovery" was coined in the '90 recession. In recessions prior to that, when there was a surge in the payrolls, it coincided with the end of a recession. In the '90 and '01 recessions, the surge in payrolls haven't come right after the end of the recession. It's taken a while to come back.

How has employment behavior changed in more recent recessions? The New York Fed put out an article. It looked at the types of job losses around the recession and defined them as cyclical versus structural. The bottom-right-hand chart gets to

that, and I'll explain it a little more in a minute. The upper-left-hand chart looks at that over the past four recessions (the '80s recessions are grouped as one because they were so similar). Into the '70s recession and '80s recession, the cyclical and structural job losses were approximately the same in the economy in terms of the portion of the workers that were affected by it in their industry.

Cyclical job loss is defined as job losses that are temporary where workers are laid off and typically recalled back to the companies they worked for. They're more reversible responses to the lull on demand.

Structural adjustments, which as you can see from the upper-left-hand chart have been determined to be a lot heavier in the current recession, are a permanent relocation of workers from one industry to possibly another, but certainly from one job to a different job. It's more of a permanent shift of workers distributed through the economy.

The chart on the lower right is one that we put together from some information from the Bureau of Labor Statistics, but some of the ideas for it were from the same article from the Fed. It looks at the jobs gained or lost during the recession on the horizontal axis, or the x axis. Jobs gained or lost the year after the recession are on the y axis. It says if you've lost jobs in the recession but gained them back in the year after the recession, those are called cyclical job losses in the economy. Going from upper left to lower right are either cyclical or counter-cyclical job losses. In the '70s and '80s, a lot of the impacts from the economy were balanced, meaning that 50 percent of the industries were affected by cyclical job changes and 50 percent were affected by structural job changes.

I couldn't get '90 data for a reason that I'll explain in a second. Move forward to '01, and the preponderance of the job changes using this definition are more structural, meaning that in the lower left quadrant, which is the one I'm going to focus on, jobs were lost in the eight or nine months of the recession, and jobs continued to be lost in the year after those eight or nine months.

Look at the portions of the economy where those are occurring, and I showed you three of them on the previous page: manufacturing, transportation and utilities, and retail. They had higher incidence impact in this recession than they did in the '90 recession from the previous page.

I wanted to go back and get this from the time period of '90. Unfortunately, our data are still focused on an SIC of industry, while the government has moved over to a new basis called NAICS. We already had the data from '01, but we didn't have them back far enough for me to get on an SIC basis. But what we should see is similar to what the article from the Fed had summarized, which is that in the early '90s, there was a movement to more of a structural job change, but it hadn't moved as much as it has in the '01 recession.

One of the points is that these are cyclical, short-term impacts, and they've been rather broad and perhaps dramatic. In some cases, we want to think about these in balance with all the secular, longer-term impacts that affect our businesses.

At the same time and over the same 15-year period, these are the four economic indicators that we spent some time focusing on (see Chart 29). I already briefly mentioned the correlations for these four. Unemployment was approximately a 0.59. Consumer confidence was a -0.66. The spread between the Treasuries and the Fed funds rate, although I can't necessarily explain why since it's proxy, has a reasonably strong correlation of 0.55. Unemployment growth has a correlation of -0.62. Using some software that we have, we looked at breakpoints where the level of the indicator has some correlation with or shows some difference from what's happening, at least in our block of incidence based upon paid incidence.

Typically when the unemployment rate is 5.7 percent or higher, we see an approximately 12 percent impact on our paid incidence in the past 15 years. Currently the unemployment rate, at least through the end of the first quarter, stood at 5.6 percent.

When we look at consumer confidence, and I think there's probably a lot of overlap with the information that they're telling us with unemployment rates, it's dropped below 90 or less, and we see an approximately 11 percent impact on our paid incidence. Currently the consumer confidence level was 91 over the three months of the first quarter of '04.

I won't go into the other ones because I think you can get the idea, but they're similar. Between the unemployment rate and the employment growth, I think many economists would say there are some weaknesses with the unemployment rate and that perhaps a better measure would be employment growth. The National Bureau of Economic Research itself does not use the unemployment rates. It uses employment growth. We found similar correlations between the two, so that's why we've been using unemployment, but I think that if we had gone back and done some of the same charts we previously showed with employment, we'd see a similar pattern to merge.

This where I wanted to get into more of a specific sector, and I was trying to talk about this two or three chartss back, when I said, "Let's look at the manufacturing sector and what happened in '90 in industrial production." Industrial production in the '90 recession peaked in June '90 and then started coming down. On the incidence chart that we are showing, we saw a little bit of a spike in '90.

Chart 30 is a chart that I showed two years ago I think at a similar session in San Francisco, but I only showed it through the first quarter of '02. I was showing what was happening with manufacturing versus the rest of our block. Now I've had some more time to piece together what was going on in some regards. What I'm showing down on the lower right is industrial production in seven different recessions. I'm

trying to see how that impacts or correlates with what happened with the incidence we've seen in our manufacturing block.

Let's look at the current recession line. I'm not sure whether I can say specifically when, but the '01 recession started in March '01 and ended in November '01. Industrial production peaked well before that time period. If you look at the chart on the lower right, zero is the end of the recession, and the peak in industrial production was approximately –14, or 14 months prior to the end. Given that the recession itself was only eight months long, that's saying that industrial production peaked in the September time frame of approximately '00. Go back and look at the third quarter of '00 on this chart, and it was almost around the same time that we saw our manufacturing incidence start to change. Sometime in the November '00 to February '01 time frame, we started to pay a lot more attention to what was going on in the sector, along with some of the rest of our incidence.

Last, I include Chart 31 in to have some overlap with what Eli was showing, although I took a different graphical approach with it. Our claim mix for a variety of reasons is different from the claim mix that the SSA sees. Two of them that I can remember off the top of my head from his presentation are back and mental nervous. I think approximately 25 percent of the claimants were musculoskeletal, and we're showing approximately 12 percent. Another one that was reasonably different was mental nervous, which I think was approximately 25 percent, and we're showing approximately 9.8 percent.

FROM THE FLOOR: But aren't you showing something quite different? You ought to be showing more of the claims and if the work rates vary by diagnosis as we know they do.

MR. LIVINGOOD: I've looked at it both ways, and it's not that much different. That's a good question. The other thing I was showing is that when I looked at the past two recessions, I took in groups the overall incidence relative to a three-year period, before the recession and then some periods after the recessions, and that's what the upper-right-hand chart is trying to show. There is a lot of similarity for some of the groupings of the diagnosis and between the two recessions, but there also are some similarities in that mental nervous and back had some sizable increases in the frequency during the past two recessions.

This points out that with the SOA table that is being worked on at the moment, if you have a changing mix of this nature, it's important to have some idea of what the claim duration is going to be on those types of claims versus what you previously had been getting. I think we may have seven different categories that we're looking at in the table for diagnosis of claims.

Here are some summaries and conclusions. One of the things that we've been looking at and are trying to balance out is that there are long-term trends that affect our business, society and the SSA. At the same time, as commercial insurers,

some short-term trends can impact our blocks depending on the mix of business that we have, and they need to be in the forefront of how we look for what's going to go on from both a pricing and a financial planning perspective. That's a large part of what we've been doing over the past couple of years.

I'll wrap it up and open it up to questions.

MR. DONKAR: I found interesting some of the latest charts of the analysis that you had of the discreet effects on various types of blocks of business that the economy might have on the private sector depending on what you have. Do you make use of that in your pricing, or is it in reserving or trying to manage the risk? How does that information help you? In our perspective, obviously, it's key to forecasting because if we're going to forecast a recession, we probably won't expect much. Is there some similar thing going on?

MR. LIVINGOOD: I don't think we forecast a recession in that regard, but in terms of looking at what we think the lag may be from a current recession and doing a projection of a financial plan and how that ties into pricing for the next five years, we've tried to use some of this experience to help us in that regard.

MR. STEVE RULIS: I have a question for Eli. As you're projecting your future Social Security benefit costs, do you have any guidance for us as actuaries as to what primary insurance amount (PIA) increase you might foresee in the future — the actual dollar amounts of the awards going to people once they're approved?

MR. DONKAR: That is part of our forecast, and we can share that information, but I'm not sure what in particular you're interested in. Obviously those benefits are indexed, so it's tied into whatever we're forecasting in terms of the economy. You need to understand that.

MR. RULIS: Do you have a rule of thumb? When you say indexed, would it be appropriate to assume that my benefits next year are going to go up 2 percent as opposed to what they were this year?

MR. DONKAR: Our current forecast for nominal increases in wages is 1 percent higher than inflation, and our inflation assumptions are approximately 3 percent as a rule.

MR. DAVE FITZPATRICK: I have a question for Eli. On Chart 18, I'm not trying to get too far into the details there, I was trying to determine whether I could see mortality improvement in your death piece on the claim termination rates. I know you've have more –

MR. DONKAR: You can see it there overall in the sense that the segment attributable to death is shrinking in the rates. That is built-in to a certain extent. Mortality improvement is built into our assumptions. We periodically do detailed

mortality studies on our base of business, which is everybody, and we have a publication where the last time we did this was in '99. We're in the process of updating it. If anybody is interested, it's on our Web site. Was there a particular thing you were interested in?

MR. FITZPATRICK: Age/sex — that improvement in mortality than I assumed because you said you have more female exposure and so forth coming in.

MR. DONKAR: Yes, but also the disabled life mortality experience is different from the overall population mortality experience. I can't quote you exactly what's there, but I can certainly provide it to you if you're interested.

FROM THE AUDIENCE: A lot of us in the industry don't have databases that look as though they are as good as yours. It looks as though you have a great database to work from.

MR. DONKAR: Yes, except you have to keep in mind the different populations that you're working with because we're working with everybody. Bob asked the comparable question because as I said we do track experience by diagnosis, which obviously is important, as some of the more detailed charts that Al put up showed. We don't use that in our forecasting because we haven't determined that it tells us enough to make it worth complicating the models (other than what it implies for the changing age structure of our rolls, which does have an effect on how long people stay on). But in an environment where you are selecting who you're going to insure, that would be much more important. I promised Bob we'd try to use our experience to gain some insight into that. We probably can. We're always interested in research projects. We're not guaranteeing we can turn them around overnight, but if people have questions that are suggested by the work that we've done, we'd certainly entertain them as a project to undertake.

FROM THE FLOOR: This is also a question for Eli. Insurance companies, especially group disability companies, spend a lot of time and effort getting Social Security approval for their disabled. I guess it is more of a policy question. Is there concern in the SSA that it may be cost shifting benefits to the SSA or, on the opposite side, that there may be a certain unfairness in who's getting approved for Social Security and who's not because of that advocacy?

MR. DONKAR: Obviously, there are a lot of issues there. I don't think the agency spends a lot of time thinking about that because we know we're a first-payer program, and the idea is whoever is entitled is entitled. There is a big concern about how much it costs to administer this program, and from the perspective of not thinking about the private insurers but thinking as stewards of federal tax dollars, we are concerned. We also are concerned as stewards of the program who are trying to pay benefits to people who are deserving of the benefits based on the definition of law. There's been an ongoing effort for the past 15 years to try to figure out ways to make this a more efficient process. The current commissioner in

fact announced an effort to try to streamline this operation, but this is like steering the giant tanker. It happens slowly.

I don't think we spent a lot of time worrying that we're paying benefits to more people because you are doing a better job of identifying people we should be paying benefits to. From a perspective of the program, if you identified people for us who qualify for the benefits, they should be getting the benefits. Is that your question, or it is a different question? Unless we discovered that people were somehow getting on the rolls who shouldn't be on the rolls as a result of a particular advocacy, I suppose we would be concerned about that, but I don't think that's been an issue.

What I didn't mention was the process. I talked about the definition. I talked about the sequential evaluation process, but I didn't talk about the process to implement that. I said it starts with the state DDS agency, but because this is a federal benefit, there are various appeal rights that go through so-called administrative law judges and can go to the federal courts. One thing I didn't mention, but I'll add since Al mentioned that particular '90 to '91 recession, is that was an example where there was an event that reinforced the effect of the recession rather than counteract it as I cited in my counterexample earlier.

In the late '80s there was a celebrated court case that was related indirectly to the welfare program, but again because these two programs are intimately related by this definition, there was a big outreach again to try to make sure that this court decision was implemented properly, which caused a big growth. If you saw the charts for the welfare program, you'd see a huge growth in that point, and some of that again spilled over as it did in the early '70s into the DI program. That was a situation where it reinforced the effects there. When you're trying to tease out what the effect of the economy is, you have to look at it from both ways. You can have exogenous events that go either direction.

Chart 1

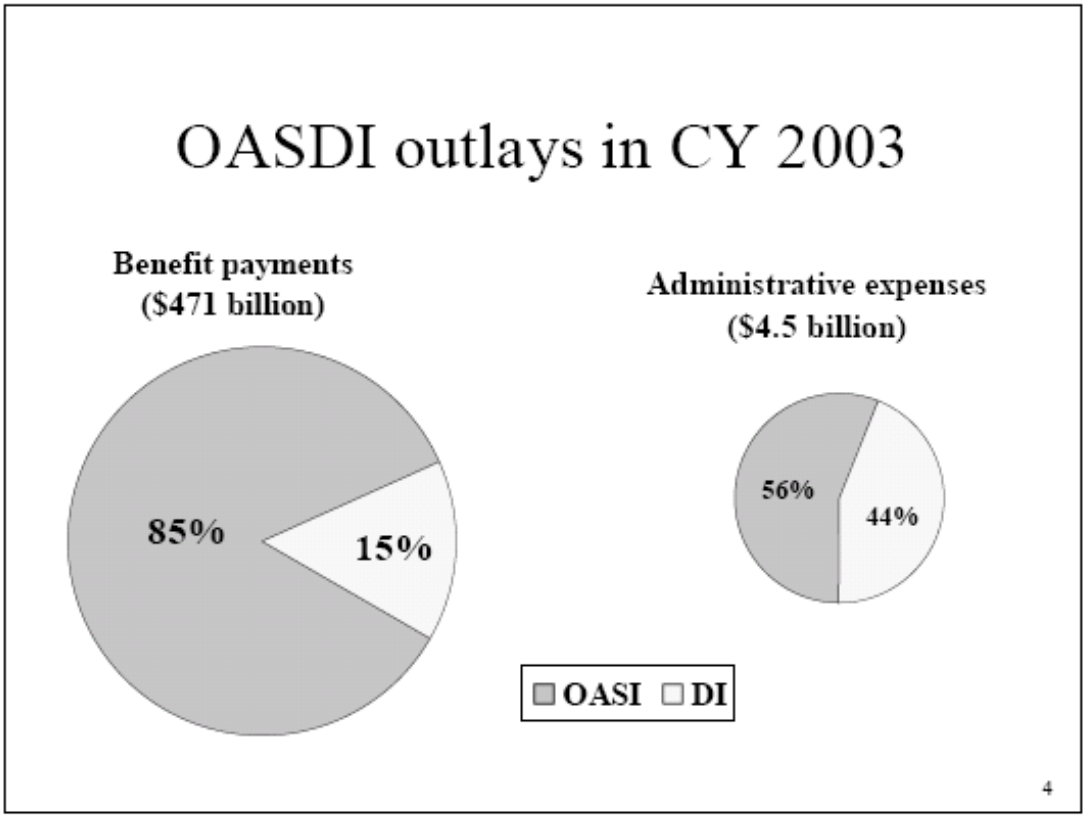

OASDI outlays in CY 2003
Benefit payments
($471 billion)
85%
15%
Administrative expenses
($4.5 billion)
56%
44%
OASI
DI
4

Chart 2

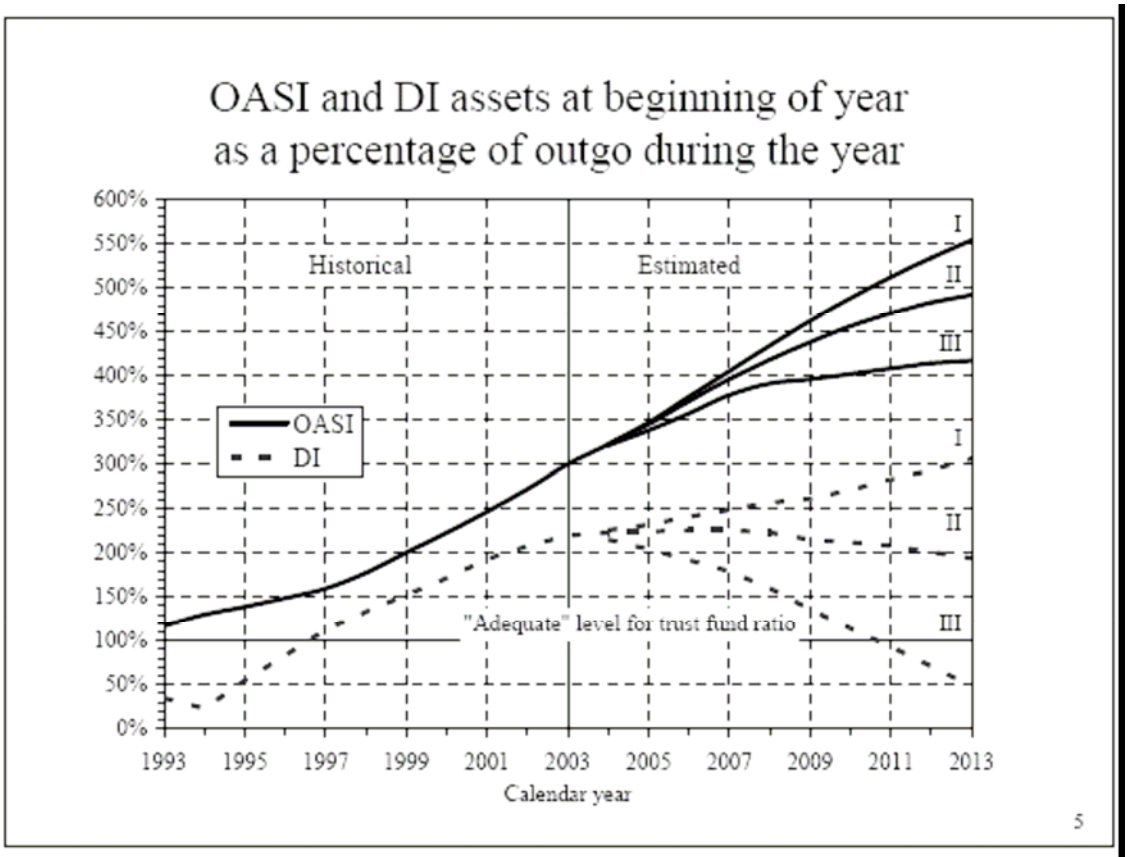

OASI and DI assets at beginning of year
as a percentage of outgo during the year
600%
550%
500%
450%
400%
350%
300%
250%
200%
150%
100%
50%
0%
Historical
Estimated
I
II
III
OASI
DI
I
II
"Adequate" level for trust fund ratio
III
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
Calendar year
5

Chart 3

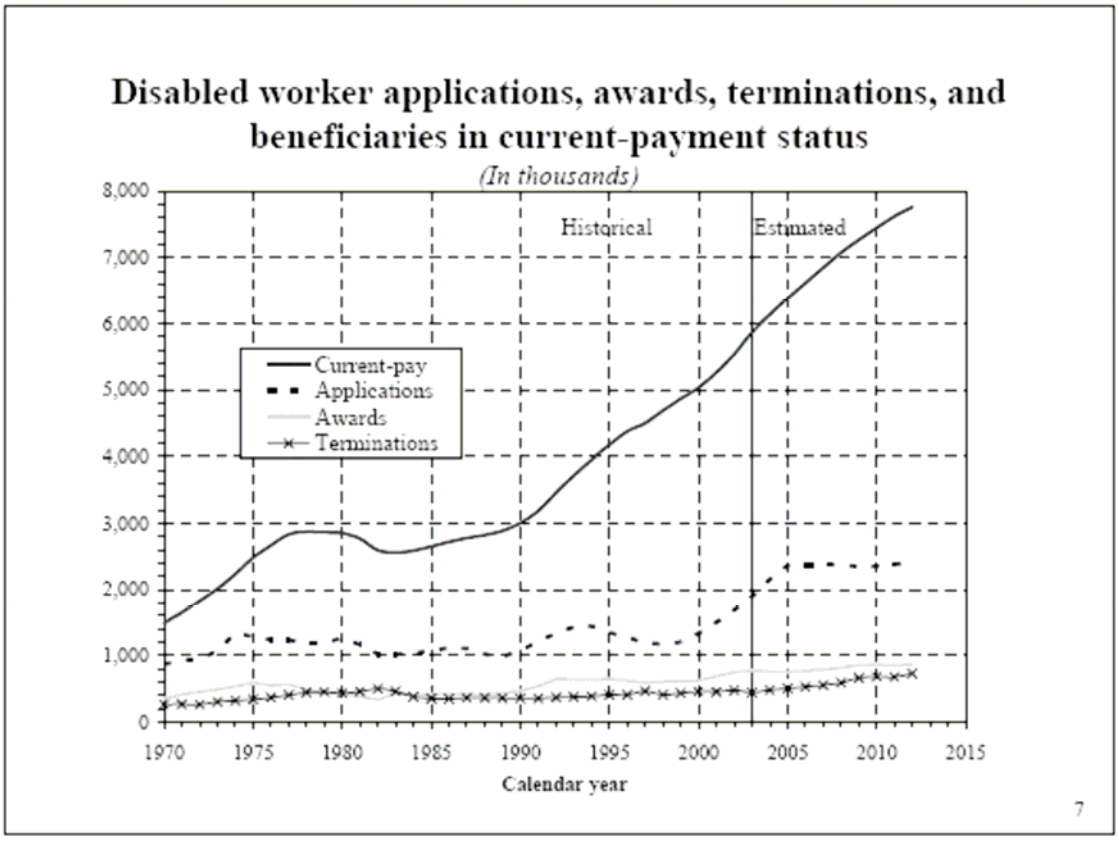

Disabled worker applications, awards, terminations, and beneficiaries in current-payment status
(In thousands)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Historical
Estimated
Current-pay
Applications
Awards
Terminations
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
Calendar year
7

Chart 4

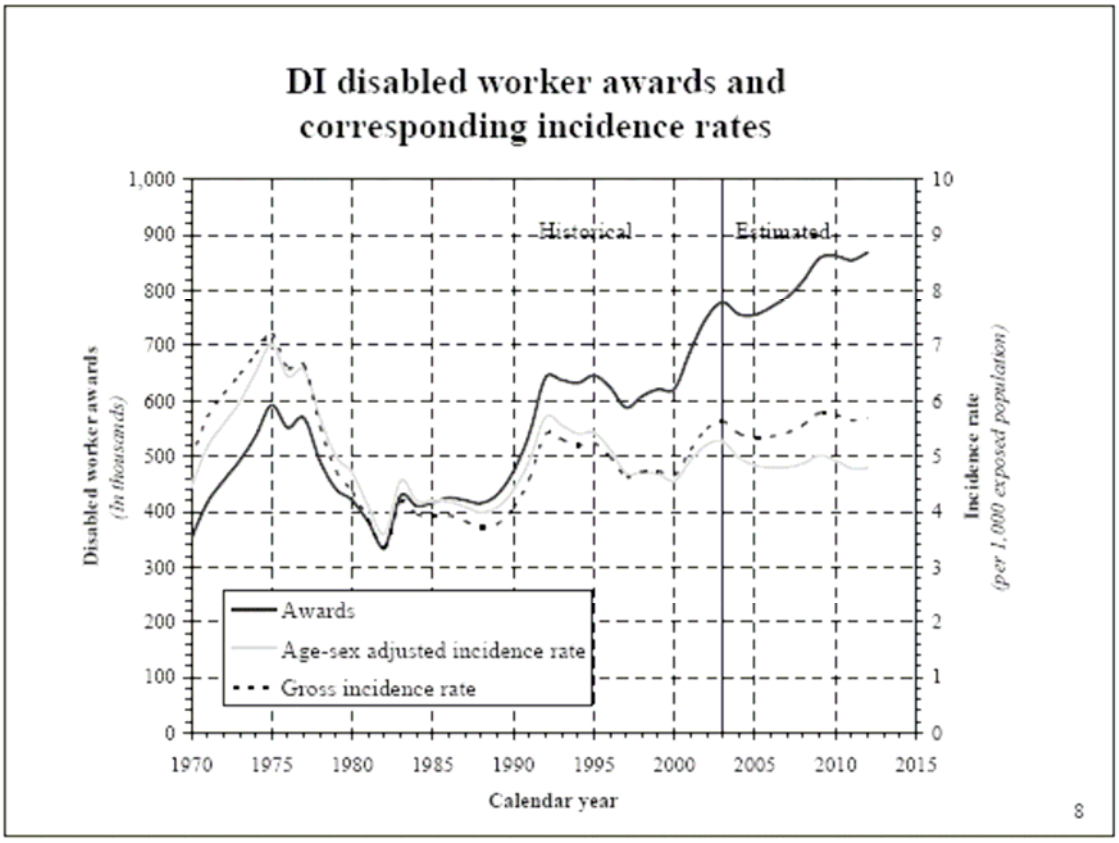

DI disabled worker awards and corresponding incidence rates
Historical
Estimated
Awards
Age-sex adjusted incidence rate
Gross incidence rate
Disabled worker awards
(In thousands)
Incidence rate
(per 1,000 exposed population)
Calendar year
1,000
900
800
700
600
500
400
300
200
100
0
10
9
8
7
6
5
4
3
2
1
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
8

Chart 5

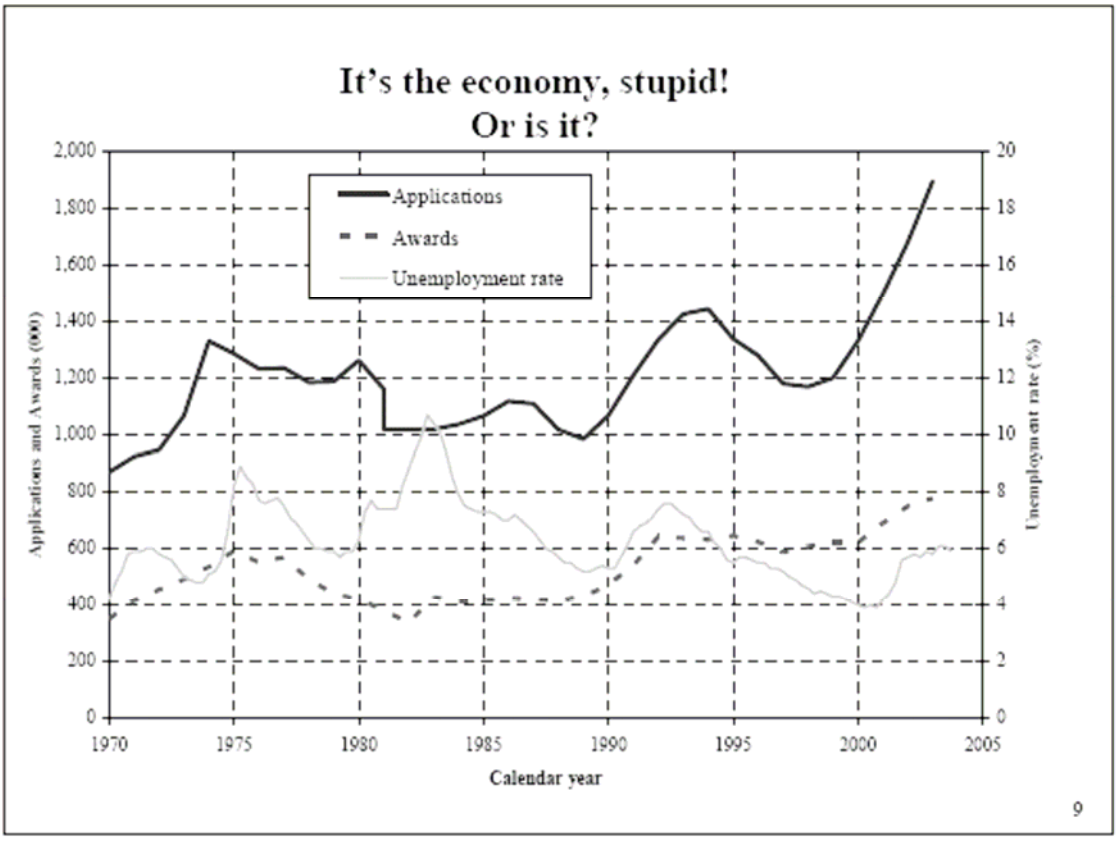

It's the economy, stupid!
Or is it?
Applications
Awards
Unemployment rate
Applications and Awards (000)
Unemployment rate (%)
Calendar year
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
20
18
16
14
12
10
8
6
4
2
0
1970
1975
1980
1985
1990
1995
2000
2005
9

Chart 6

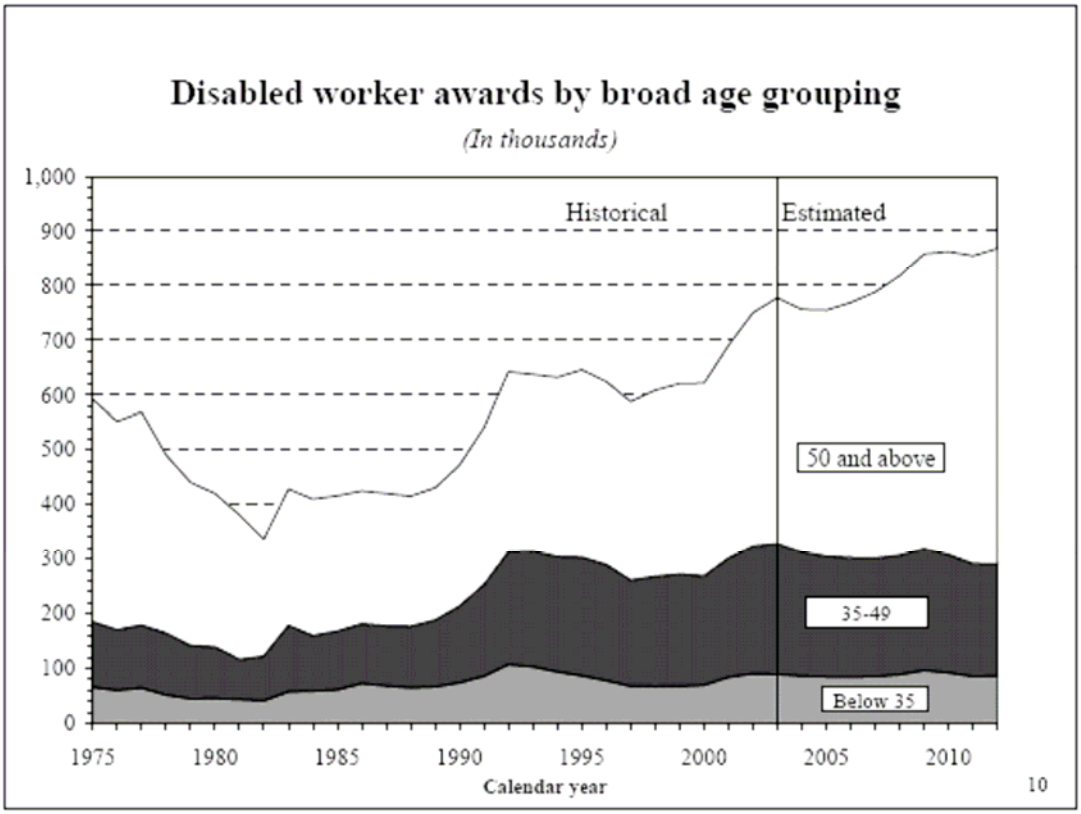

Disabled worker awards by broad age grouping
(In thousands)
1,000
900
800
700
600
500
400
300
200
100
0
Historical
Estimated
50 and above
35-49
Below 35
1975
1980
1985
1990
1995
2000
2005
2010
Calendar year
10

Chart 7

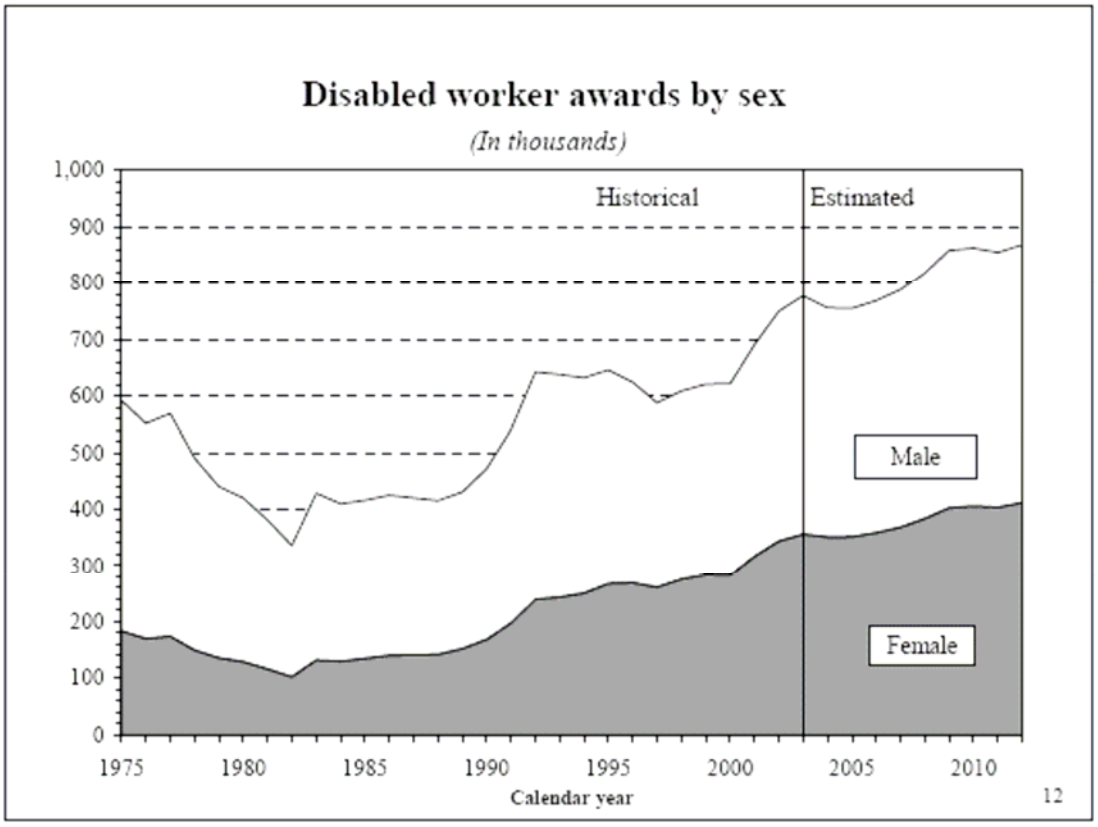

Disabled worker awards by sex
(In thousands)
1,000
900
800
700
600
500
400
300
200
100
0
Historical
Estimated
Male
Female
1975
1980
1985
1990
1995
2000
2005
2010
Calendar year
12

Chart 8

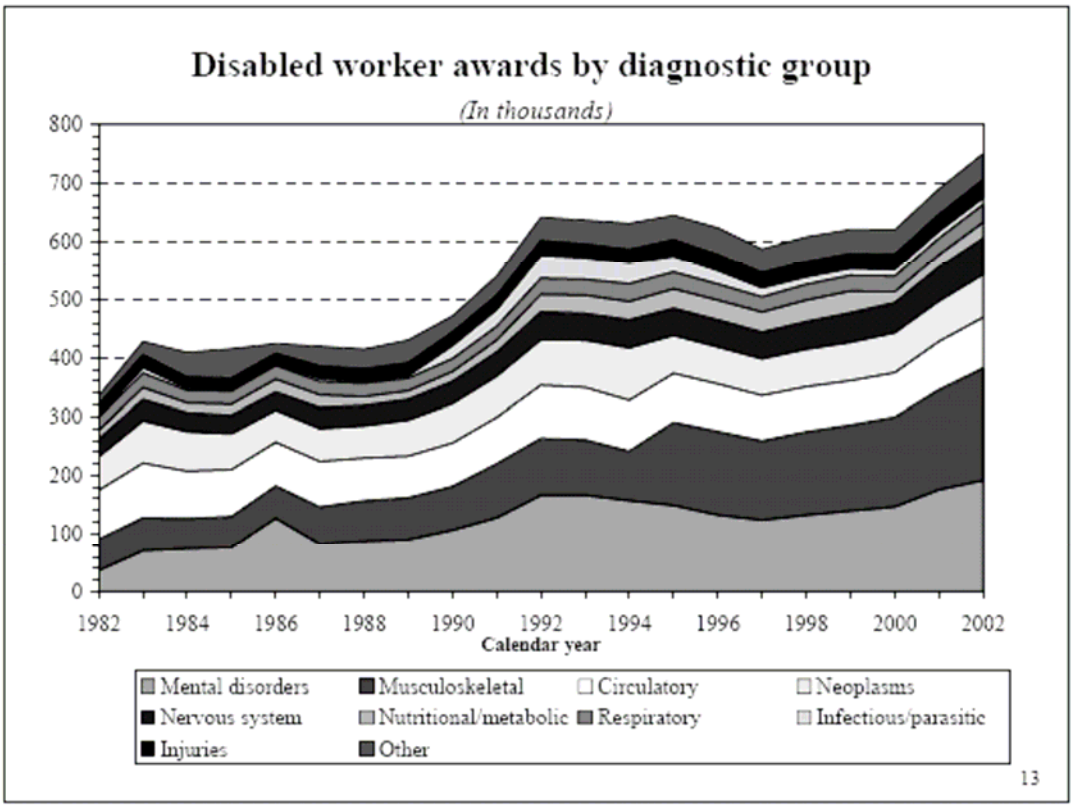

Disabled worker awards by diagnostic group
(In thousands)
800
700
600
500
400
300
200
100
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
Calendar year
Mental disorders
Musculoskeletal
Circulatory
Neoplasms
Nervous system
Nutritional/metabolic
Respiratory
Infectious/parasitic
Injuries
Other
13

Chart 9

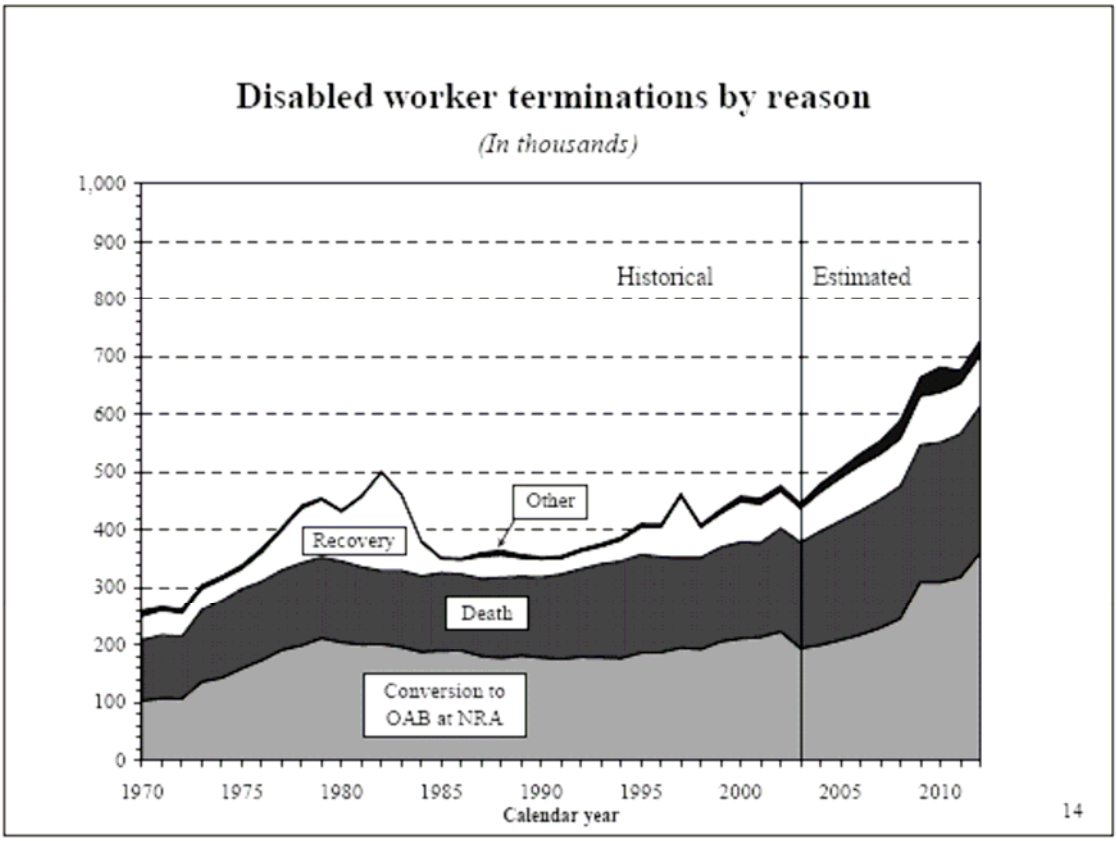

Disabled worker terminations by reason
(In thousands)
1,000
900
800
700
600
500
400
300
200
100
0
Historical
Estimated
Other
Recovery
Death
Conversion to OAB at NRA
1970
1975
1980
1985
1990
1995
2000
2005
2010
Calendar year
14

Chart 10

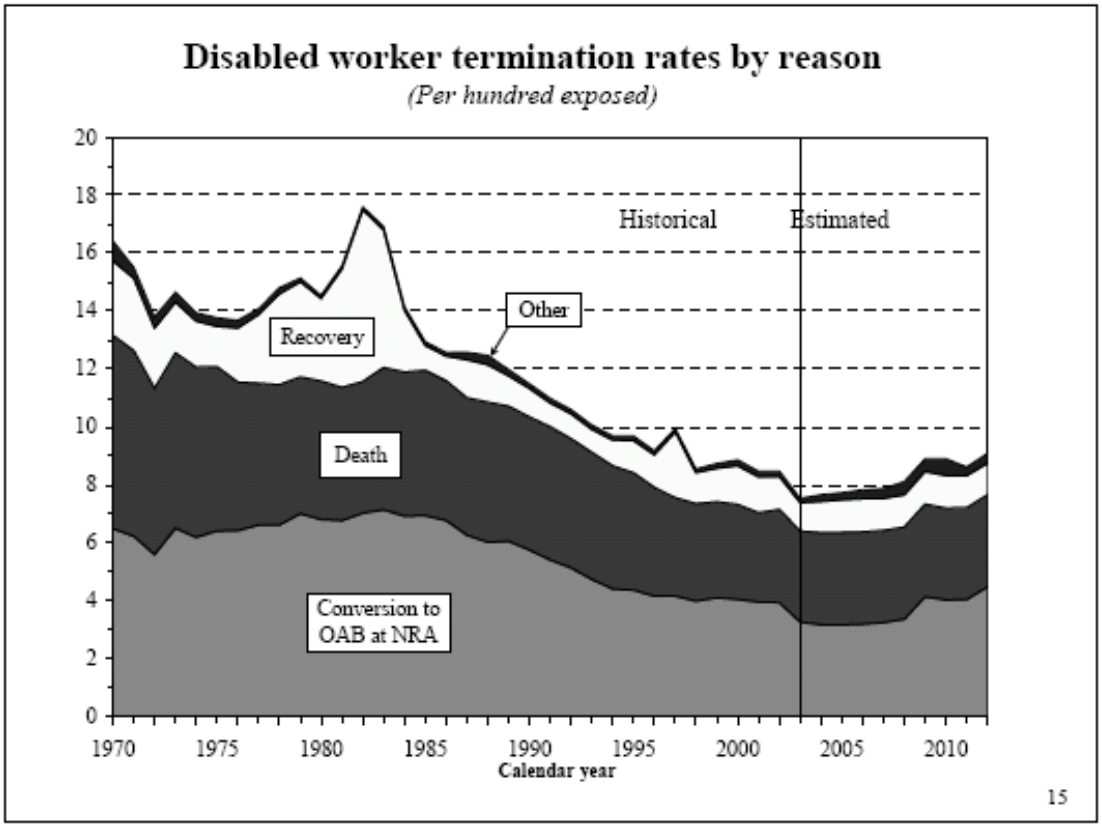

Disabled worker termination rates by reason
(Per hundred exposed)
20
18
16
14
12
10
8
6
4
2
0
Historical
Estimated
Other
Recovery
Death
Conversion to OAB at NRA
1970
1975
1980
1985
1990
1995
2000
2005
2010
Calendar year
15

Chart 11

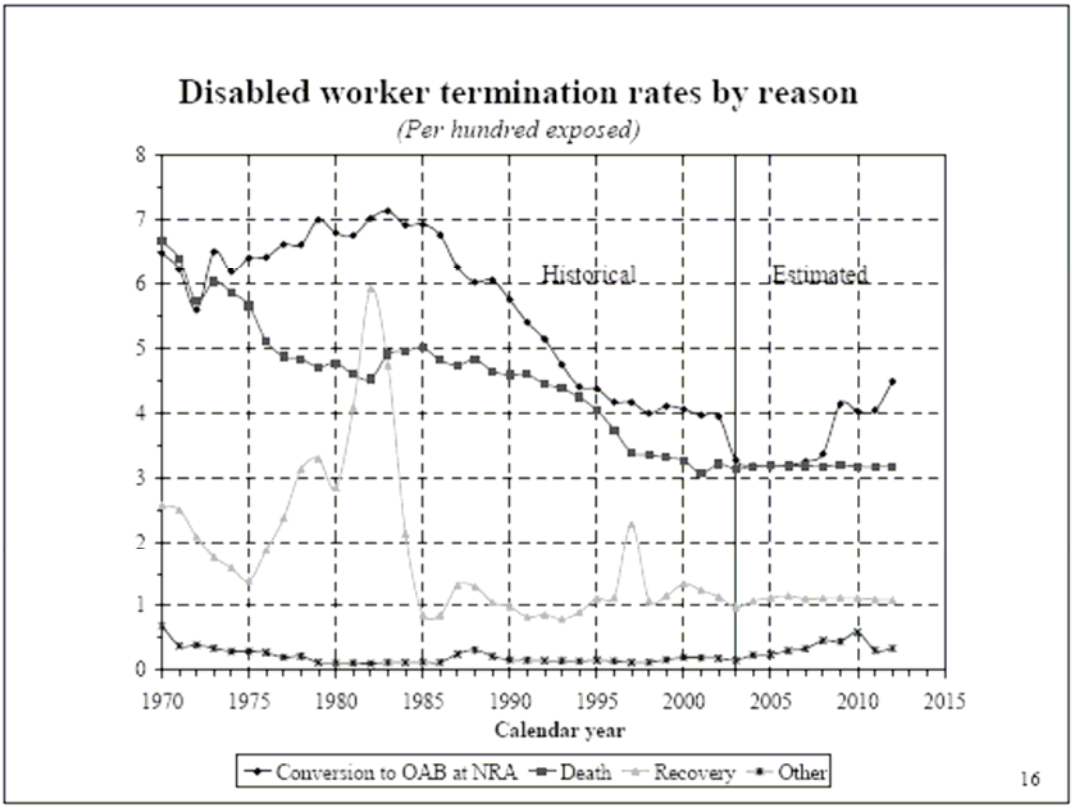

Disabled worker termination rates by reason
(Per hundred exposed)
8
7
6
5
4
3
2
1
0
Historical
Estimated
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
Calendar year
Conversion to OAB at NRA
Death
Recovery
Other
16

Chart 12

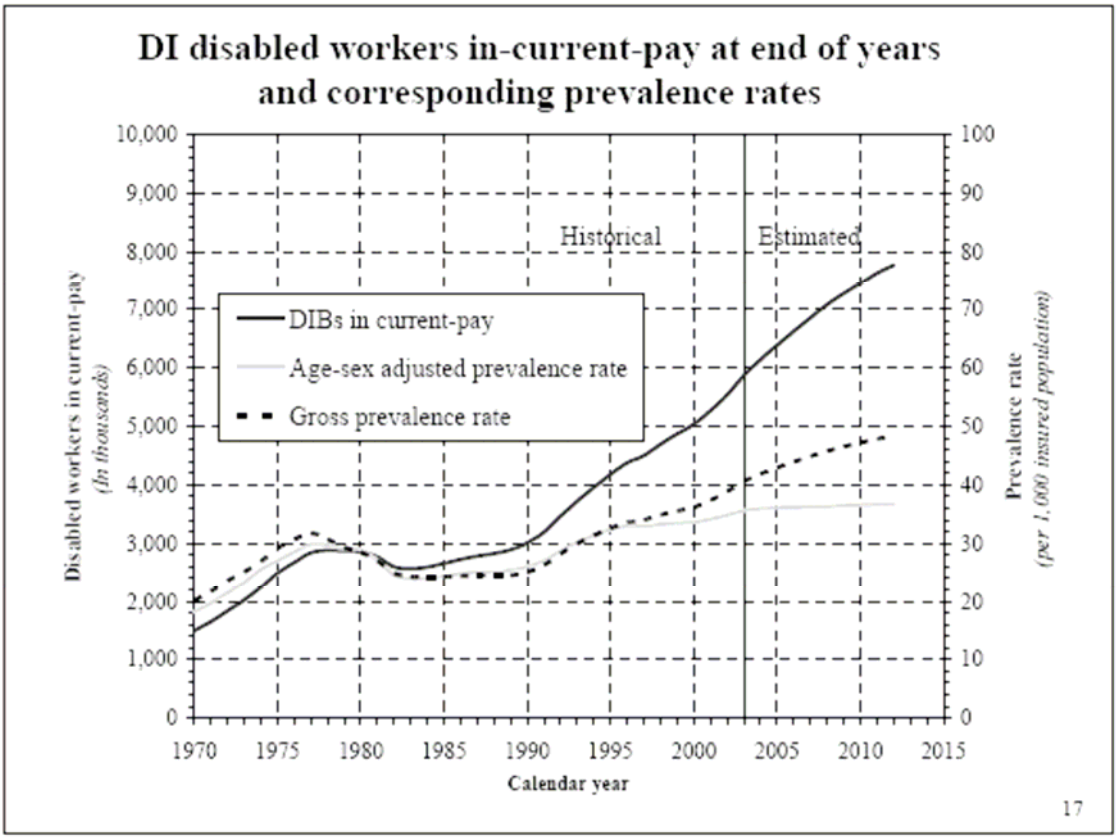

DI disabled workers in-current-pay at end of years and corresponding prevalence rates
Historical
Estimated
DIBs in current-pay
Age-sex adjusted prevalence rate
Gross prevalence rate
Disabled workers in current-pay
(In thousands)
Prevalence rate
(per 1,000 insured population)
Calendar year
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
100
90
80
70
60
50
40
30
20
10
0
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
17

Chart 13

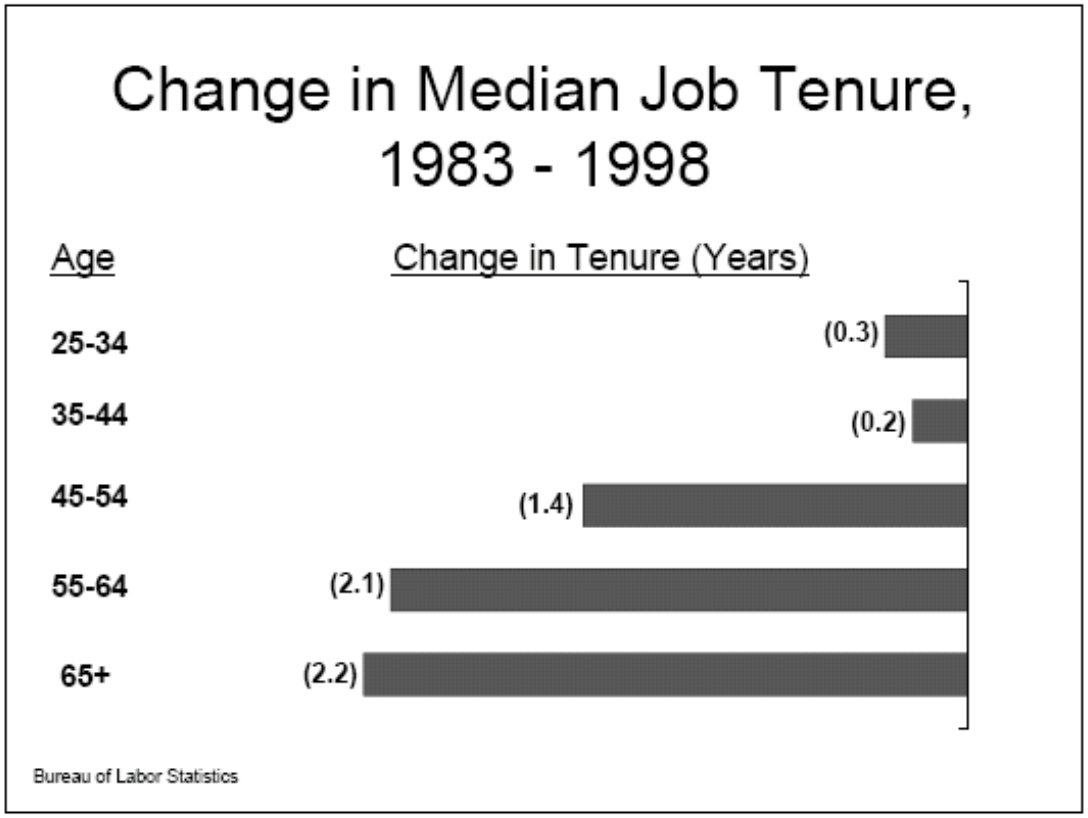

Change in Median Job Tenure, 1983 - 1998
Age
Change in Tenure (Years)
25-34
(0.3)
35-44
(0.2)
45-54
(1.4)
55-64
(2.1)
65+
(2.2)
Bureau of Labor Statistics

Chart 14

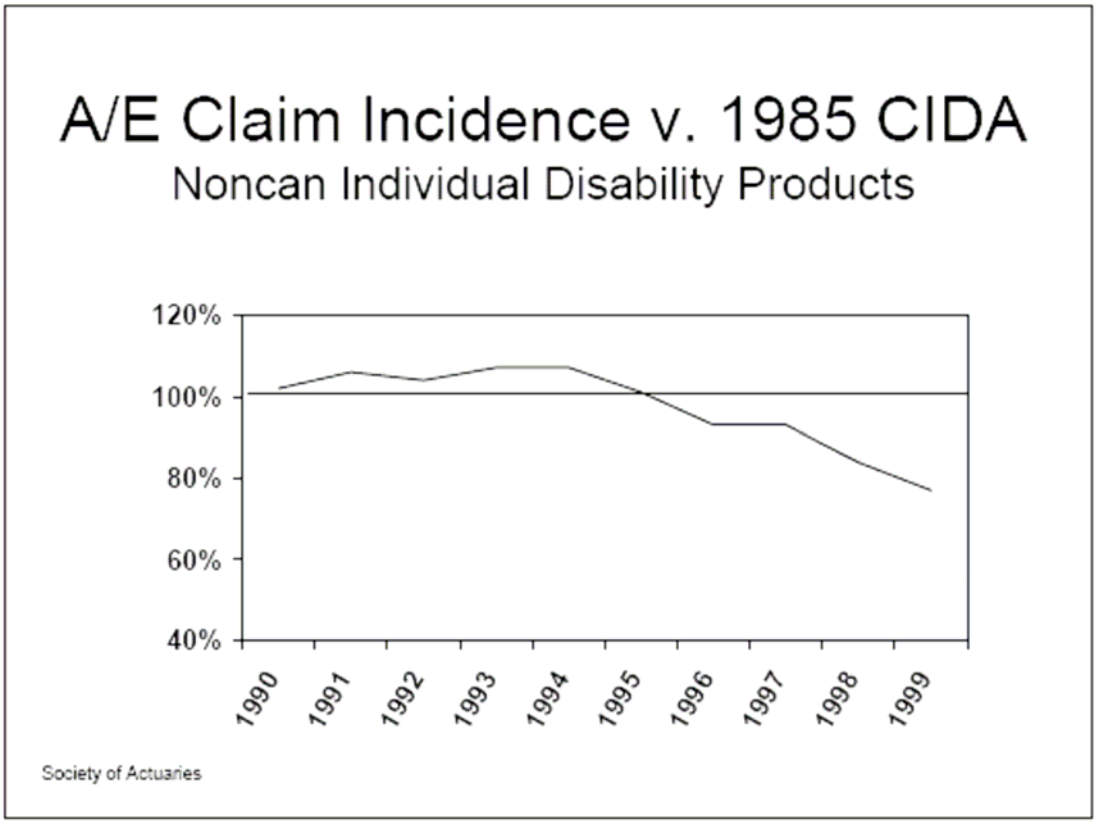
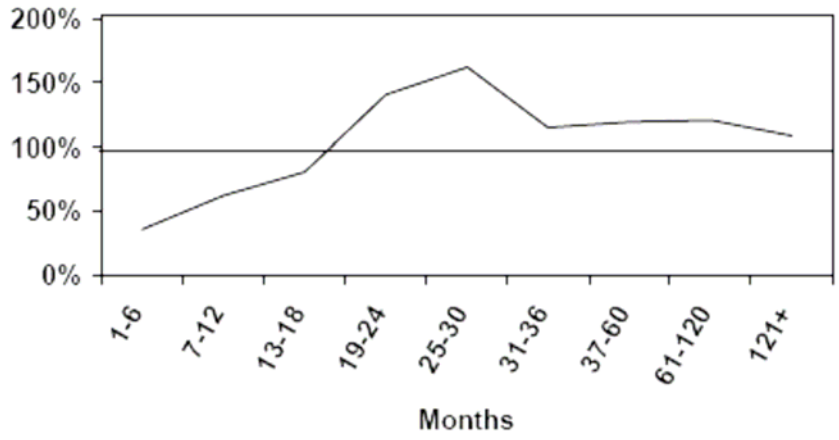

A/E Claim Incidence v. 1985 CIDA
Noncan Individual Disability Products
120%
100%
80%
60%
40%
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
Society of Actuaries

Chart 15

A/E Claim Terminations v. 1985 CIDA

Noncan Individual Disability Products



Society of Actuaries

Chart 16


Occupational Injury / Illness
Rates per 100
(Rate)
4.0
3.0
2.0
1.0
0.0
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
Bureau of Labor Statistics

Chart 17

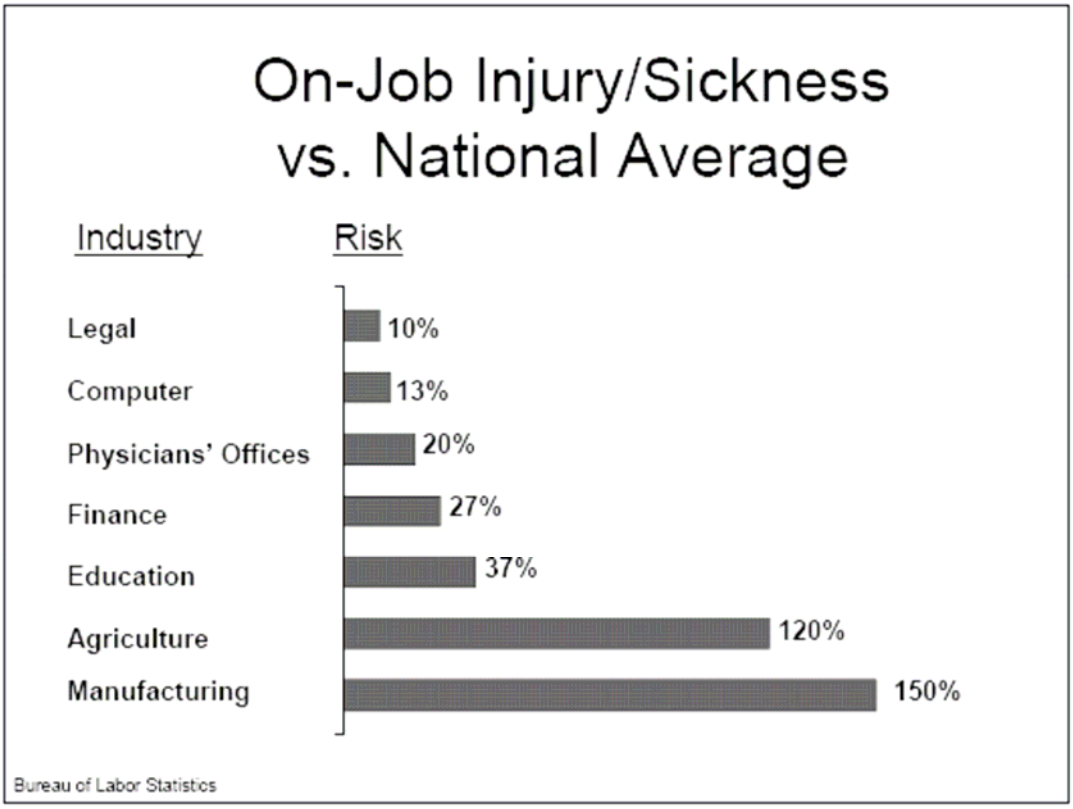

On-Job Injury/Sickness vs. National Average
Industry
Risk
Legal
10%
Computer
13%
Physicians' Offices
20%
Finance
27%
Education
37%
Agriculture
120%
Manufacturing
150%
Bureau of Labor Statistics

Chart 18

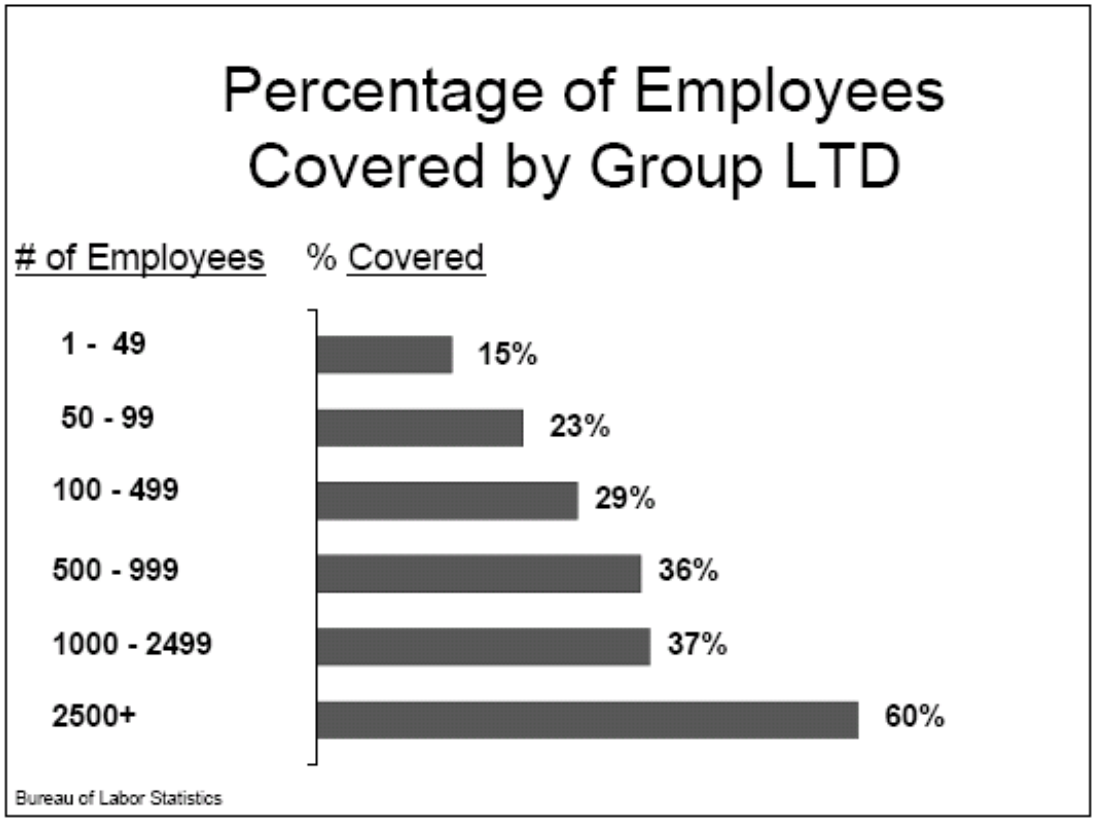

Percentage of Employees Covered by Group LTD
# of Employees
% Covered
1 - 49
15%
50 - 99
23%
100 - 499
29%
500 - 999
36%
1000 - 2499
37%
2500+
60%
Bureau of Labor Statistics

Chart 19

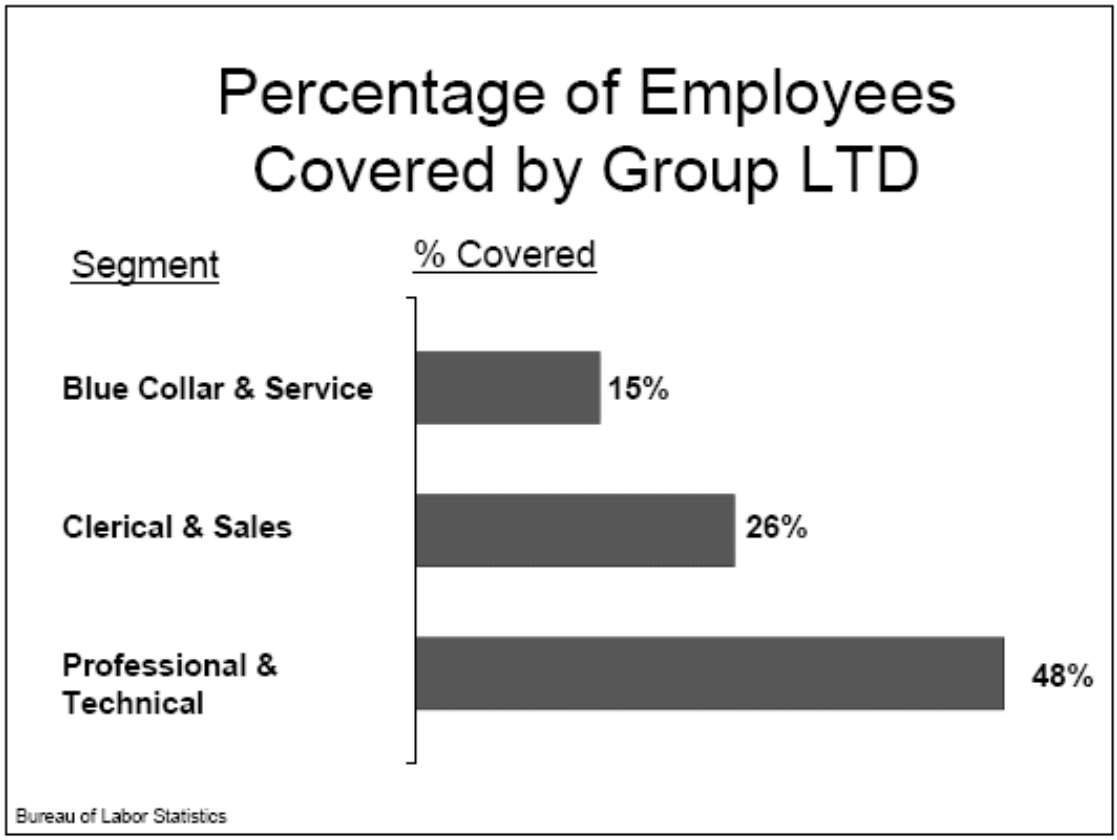

Percentage of Employees Covered by Group LTD
Segment
% Covered
Blue Collar & Service
15%
Clerical & Sales
26%
Professional & Technical
48%
Bureau of Labor Statistics

Chart 20

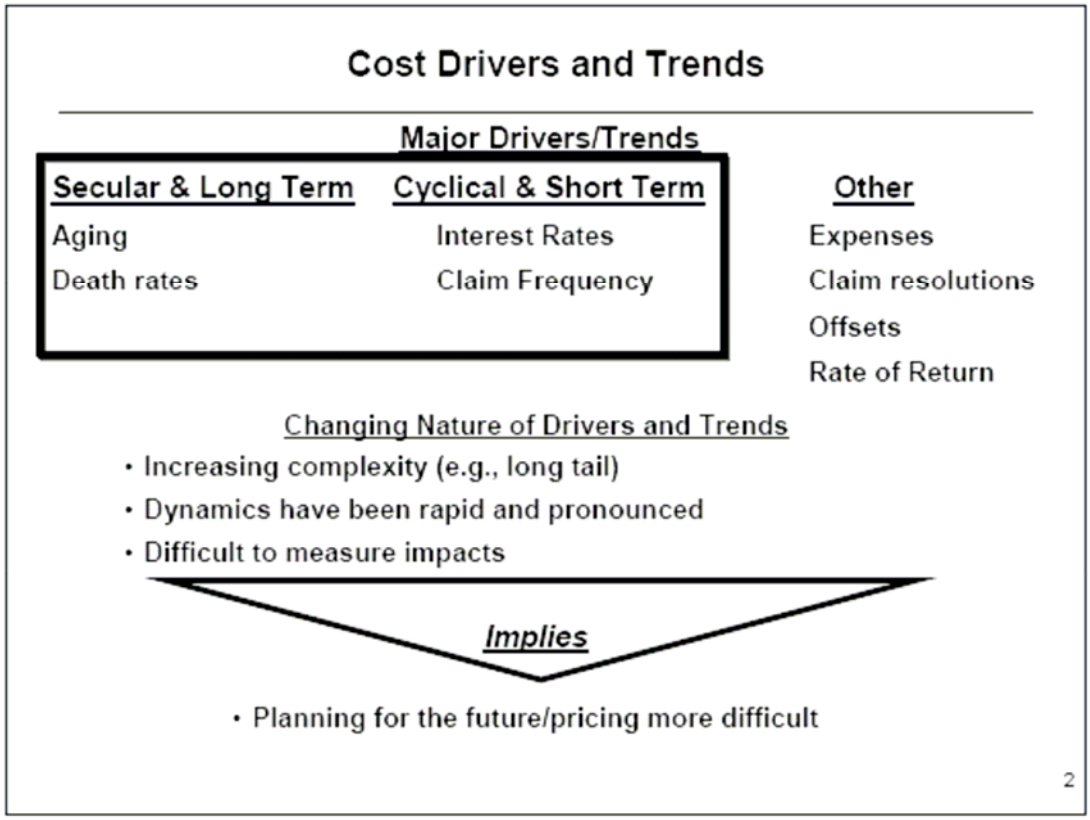
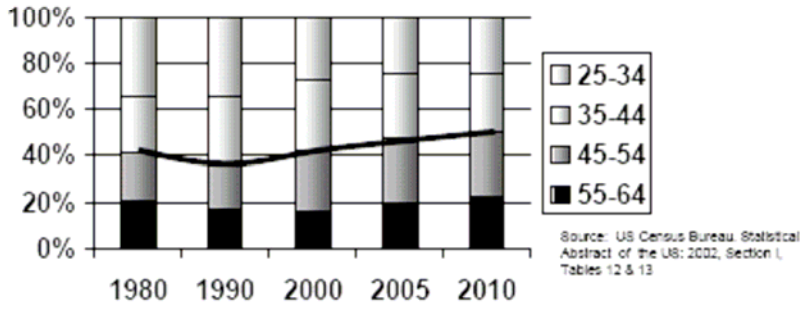

Cost Drivers and Trends
Major Drivers/Trends
Secular & Long Term
Aging
Death rates
Cyclical & Short Term
Interest Rates
Claim Frequency
Other
Expenses
Claim resolutions
Offsets
Rate of Return
Changing Nature of Drivers and Trends
• Increasing complexity (e.g., long tail)
• Dynamics have been rapid and pronounced
• Difficult to measure impacts
Implies
• Planning for the future/pricing more difficult
2

Chart 21

Secular Changes in Risk Dynamic - Aging

Distribution of "Working Age" US Population



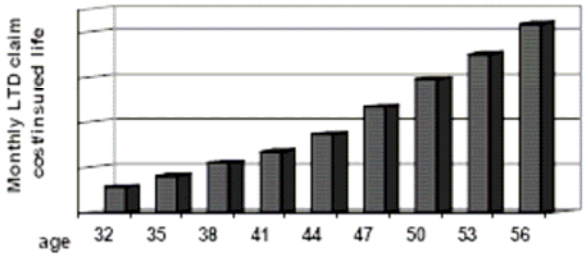
Source: US Census Bureau, Statistical Abstract of the US: 2002, Section I, Tables 12 & 13

- Between 1990 and 2000, the median age of the US "working age" population increased from 40 to 42 and it will continue to rise.
- The largest proportional increase came from the 45-54 age bracket, as the "baby boomers" continue aging.

Chart 22

Secular Changes in Risk Dynamic

Monthly LTD claim cost per age

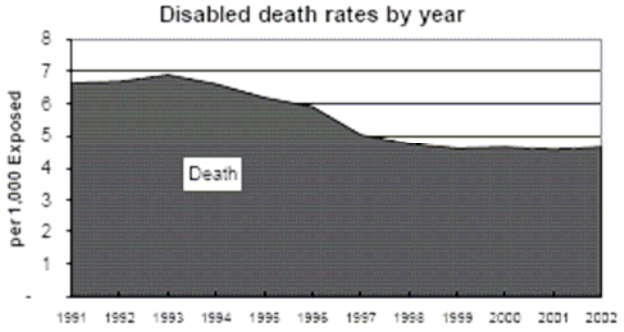


Source: UnumProvident LTD Block

- The population and workforce are aging.
- Impact of aging along the disability curve can be steep – cost increases of 4 – 8% per age year are common.
- UnumProvident block and new sales have been aging by 4-6 months each year.

Chart 23

Secular Change in Disability Deaths



Source: UnumProvident LTD Block

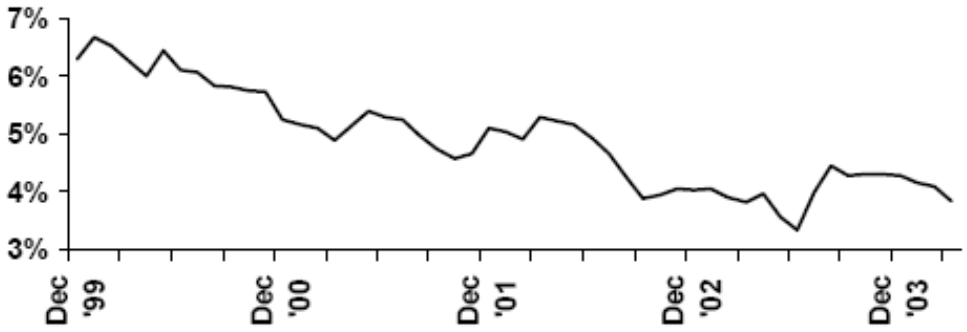
While aging is currently a secular trend impacting disability cost for US private insurers, due to the demographic profile of US employees, other secular cost such as disability death rates impact disability cost.

The actual rates of disability death in recent years have been relatively stable; however, in the early 1990's the disability death rates were declining.

Chart 24

Interest Rates

Yield on 10-Year Constant Maturity Treasuries



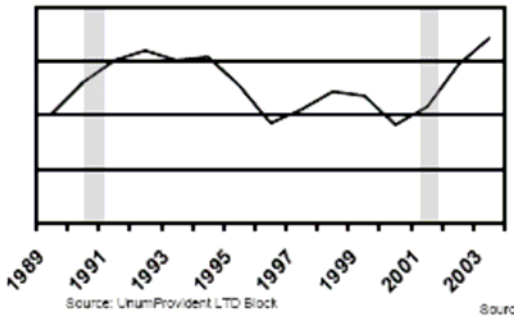
- Declining rates impact new money invested, and therefore Net Investment Income as well as reserves.
- Interest has a direct and significant impact on cost (100bp shift requires approximately 4% shift in prices).
- Interest rates affect all players and all sizes and segments of cases.

Source: Federal Reserve Board: H15

Chart 25

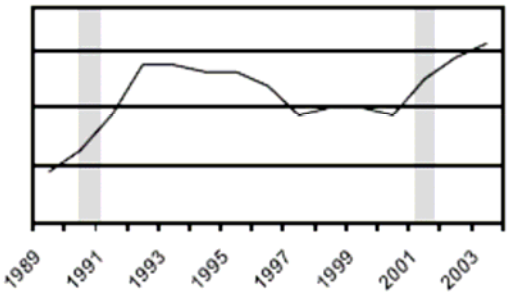
Disability Paid Incidence
UnumProvident and SSA

UPC Paid Incidence



Source: UnumProvident LTD Block

SS Disability Awards



Source: Social Security Actuarial Publications: Statistical tables – Applications for Disability Benefits and Benefit Awards, 2/13/ 2003

- Paid incidence rates increase during recessions and remain elevated for several years; that's an important cost factor.
- SSA results show similar trend.

Chart 26

Disability Incidence and Economic Recessions

Incidence is indexed to the end of each recession.

Source: UnumProvident LTD Block

- Submitted incidence increased more steeply in the current recession.
- Submitted incidence continued to climb long after the recession officially ended in March 1991 and reached its peak 16 quarters later.

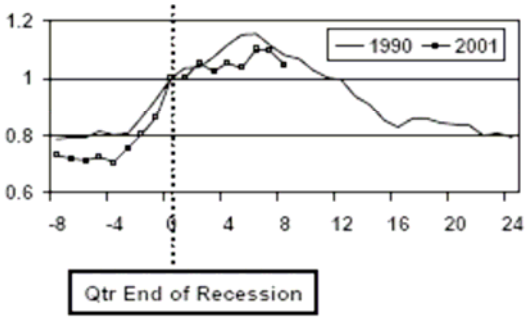
8

Chart 27

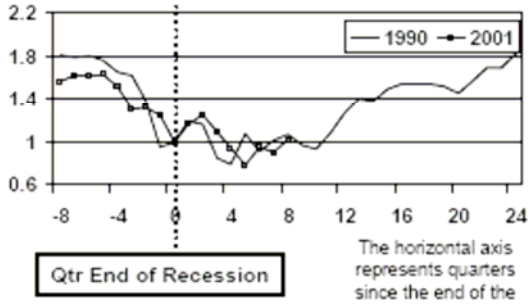
Two Economic Recessions With Jobless Recoveries: 1990-91 & 2001

(Indexed to the end of each recession)

Unemployment Rate %



Consumer Confidence



The horizontal axis represents quarters since the end of the recession

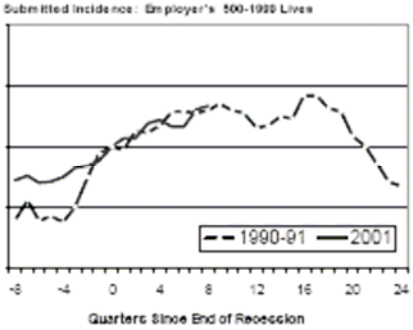
Source: Bureau of Labor Statistics Unemployment Rate & Conference Board's Consumer Confidence Index

- Key dynamics affecting incidence rates seem to be similar.
- Employment and Consumer Confidence lag recessionary periods -- recovery takes time!

9

Chart 28

Disability Incidence and Economic Recessions By Employer Size



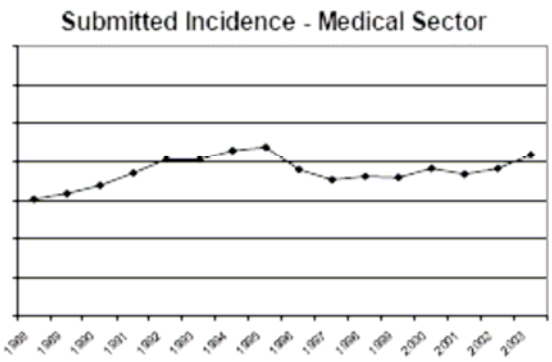
The economy impacts on disability incidence since 1990 appear to impact all sizes of employer's.

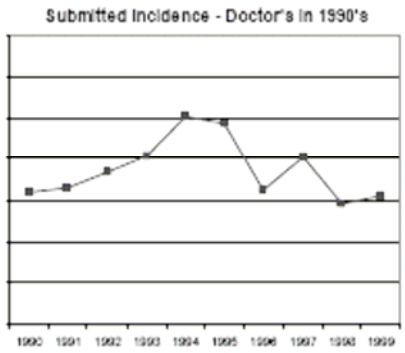
- Employers with less than 500 employees had very similar incidence changes in both recession up to this point.
- Employers with 500 – 1999 employees had a notably smaller incidence increase in this current recession.
- Employers with greater than 2000 employees had a slightly larger incidence increase in this current recession.

Source: UnumProvident LTD Block

Chart 29

Historical Disability Incidence: Medical Sector





•Various industry sectors of the economy have experienced different impacts in the last two recessions.

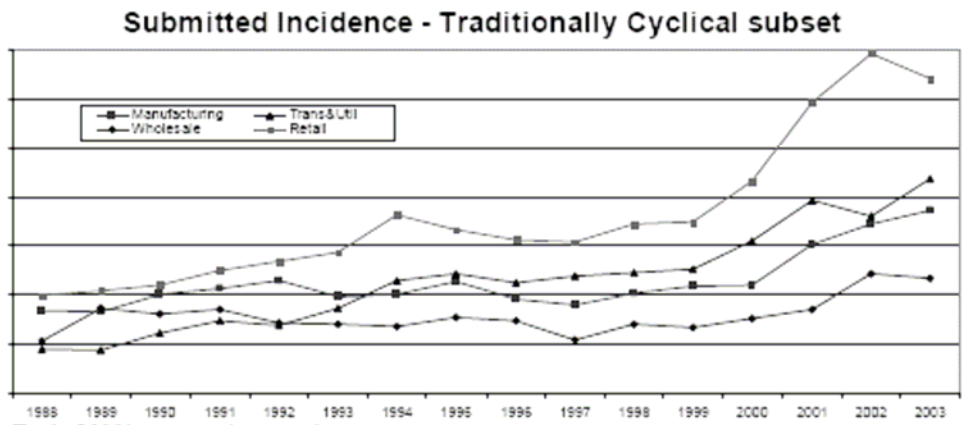
• The charts above show that the medical and health care sectors in the early 1990's economy were experiencing increasing disability incidence. Is this due solely to the 1990 recession or a combination of the recession and other events in the economy?

• Employer's were moving to more managed health care toward the mid-1990's.

Source: UnumProvident LTD Block

Chart 30

Historical Disability Incidence: Industry Groups



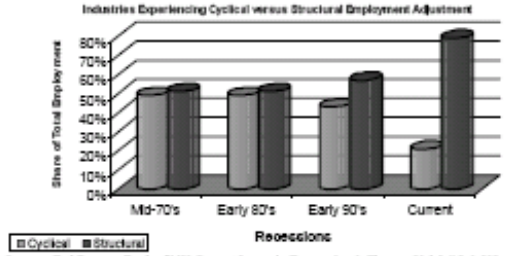
• Early 1990's economic recession: Manufacturing, Retail, and Transportation & Utilities show some disability incidence deterioration while the Wholesale sector was relatively stable.

• Current recession: Manufacturing, Retail, and Transportation & Utilities are experiencing greater incidence deterioration. The Wholesale sector is experiencing greater incidence deterioration in this recession relative to the 1990's; however, relative to the other sectors in this recession it is experiencing less deterioration.

Source: UnumProvident LTD Block

Chart 31

Recessions & Employment Characteristics: Industry Observations



Source: Fed Reserve Bank of NY Current Issues in Economics & Finance Vol 9 #8 & US Bureau of Labor Statistics

Are the 1990 & 2001 recession similar to prior recessions?

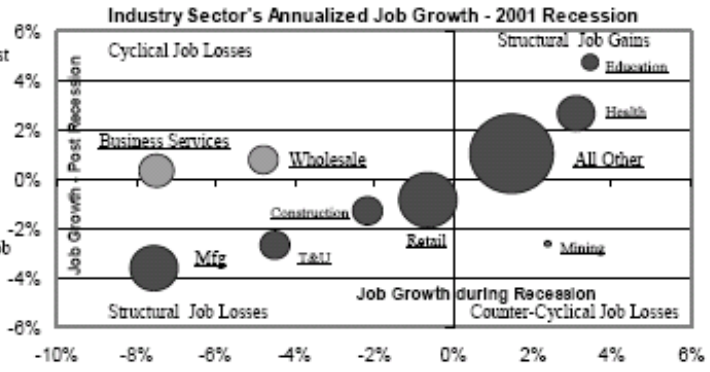
- The term 'Jobless Recovery' was coined with the 1990 recession!
- In recessions prior to 1990, a surge in payroll jobs typically coincided with the end of a recession.

Has employment behavior changed in more recent recessions?

- Cyclical Employment adjustment: Job losses are temporary, laid off workers recalled to prior firm or comparable firms. Reversible responses to lulls in demand.
- Structural Employment adjustment: A permanent relocation of workers from some industry to others. A permanent shift in employee's distributed thru the economy.

- Disability Frequency in last two US recessions appears to be impacted long past the trough in economic activity.
- Economist have noted that the job losses in the last two recession have been less cyclical than in prior recessions.

- **Can Structural job loss explain the disability frequency lag?**
- The chart to the right shows some key economic sectors experienced structural job losses in the 2001 recession. These same sectors experienced larger incidence deterioration in 2001.



13

Source: US Bureau of Labor Statistics

Chart 32

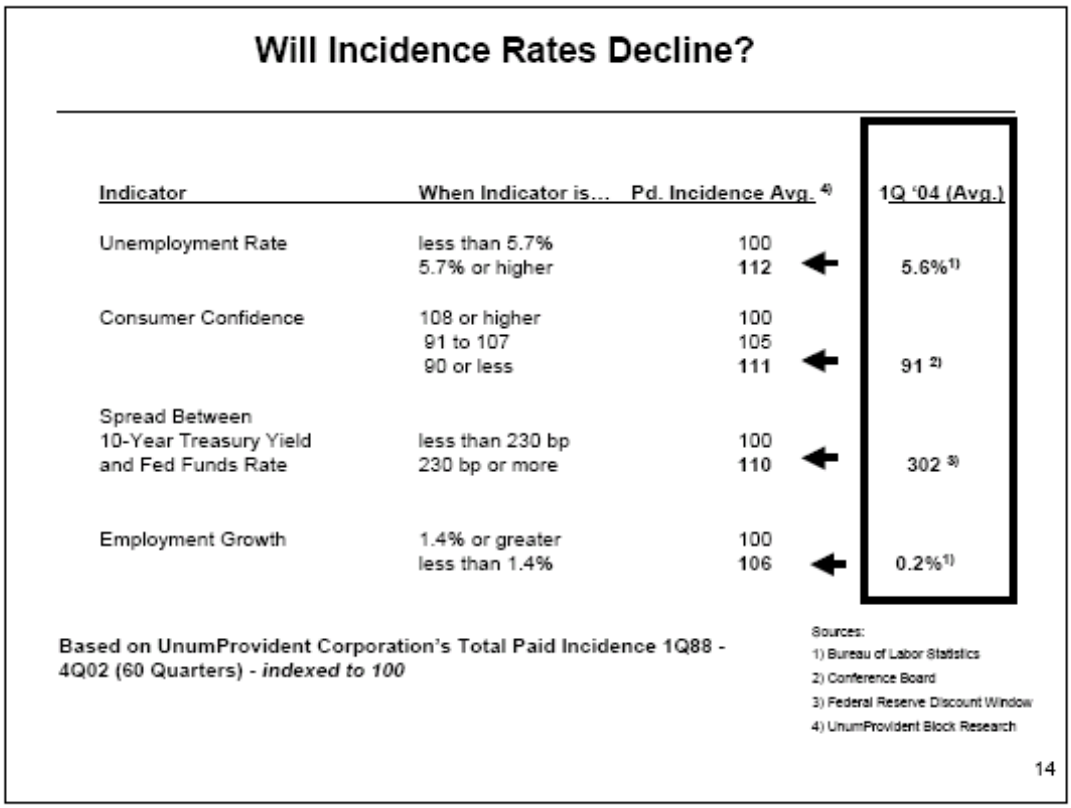
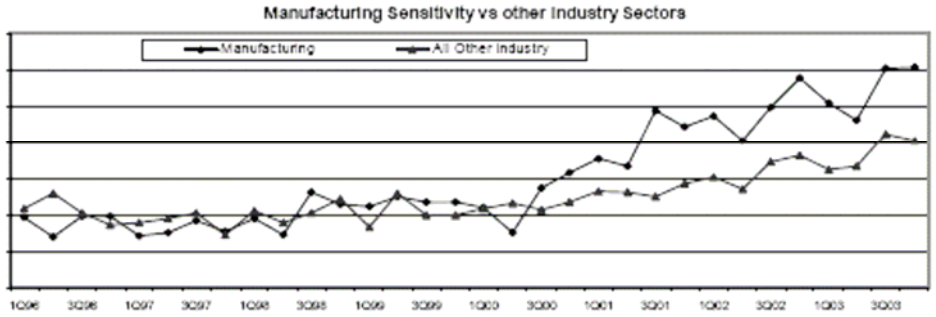

Will Incidence Rates Decline?
Indicator
When Indicator is…
Pd. Incidence Avg. 4)
1Q '04 (Avg.)
Unemployment Rate
less than 5.7%
100
5.7% or higher
112
5.6% 1)
Consumer Confidence
108 or higher
100
91 to 107
105
90 or less
111
91 2)
Spread Between
10-Year Treasury Yield
and Fed Funds Rate
less than 230 bp
100
230 bp or more
110
302 3)
Employment Growth
1.4% or greater
100
less than 1.4%
106
0.2% 1)
Based on UnumProvident Corporation's Total Paid Incidence 1Q88 - 4Q02 (60 Quarters) - indexed to 100
Sources:
1) Bureau of Labor Statistics
2) Conference Board
3) Federal Reserve Discount Window
4) UnumProvident Block Research
14

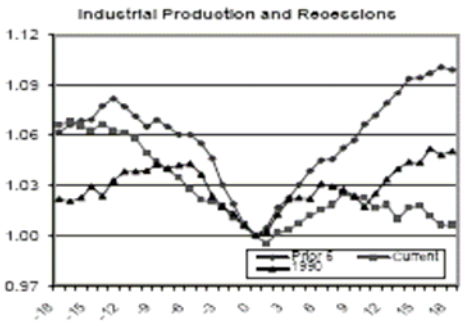
Chart 33

Historical Disability Incidence: Manufacturing Sector



During 1996 – 2000 the manufacturing sector and all other industry sectors were experiencing reasonably similar incidence *until the third quarter in 2000.*

- **Why did manufacturing claim frequency begin trending differently?** The chart to the right offers some explanation. This chart shows changes in industrial production relative to the month end of a recession.
- The expansion of Industrial Production ended in 3Q00 & recessionary impacts started to occur in this industry sector.
- Also note that industrial production has rebounded much more slowly in this recession than in prior recessions.

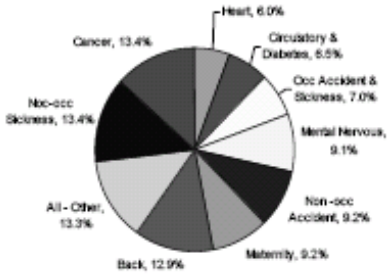


Source: UnumProvident LTD Block

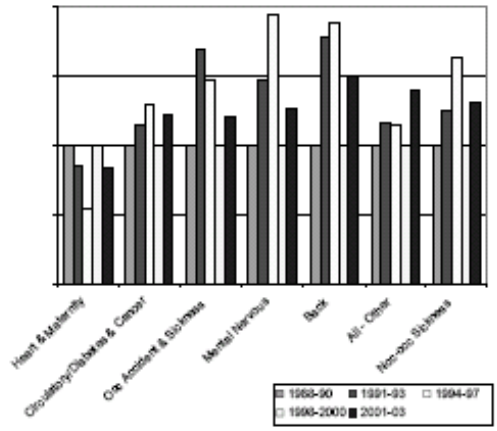
Chart 34

Disability Incidence: by Diagnosis

Submitted Claims: Mix by Diagnosis



Submitted Incidence Changes by Diagnosis



• The diagnosis mix of submitted claims appear to differ from the diagnosis mix of awarded claims from the Social Security Administration.
• While the diagnosis mix of new claims differs, some similar diagnosis groups appear to experience a greater increase around recessionary events.

Source: UnumProvident LTD Block