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A Balancing Act: Achieving Adequacy and Sustainability in Retirement Income Reform

What are the Trade-Offs?
Defined Benefit vs. Defined Contribution Systems

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What are the Trade-Offs? Defined Benefit vs. Defined Contribution Systems

Good morning. I want to thank AARP for inviting me to talk at this conference about something that is very important to me, my profession, and the retirement security of millions of people: the advantages and disadvantages of defined benefit (DB) and defined contribution (DC) plans. Actuaries have been advising employers on these issues for over a century. In my talk, I have been asked to address this issue mainly from the perspective of employer-provided plans (Axel Boersch-Supan discussed it more from the perspective of state pension systems). As you may see however, there may be many similar issues in our talks.

Advantages of Employer Pension Plans – Whether DB or DC

I first want to note the advantages of *both* DB and DC plans. Some people prefer DB plans; some prefer DC plans; and many like both. For example, while younger employees understand and value the cash nature of DC plans, many older employees and retirees appreciate that cash does not equal retirement security - a stable lifetime pension does. When the stock market was performing well in the 1990s, many workers preferred DC plans. Now that the stock market has fallen dramatically, many workers want someone else to handle their savings, and would prefer employers to take care of this concern. Thus, there are advantages to having both types of plans, and many large employers do just that - they have a DB plan and a 401(k) – a voluntary savings plan in the US that allows matches and tax deferral of employee contributions. The World Bank agrees there are diversification advantages to having a multi-pillar system with both DB and DC elements, funded and non-funded systems, and all three parties responsible (the government, the employer, and the individual). That spreads responsibility over three parties, some of which may be stronger than others in different economic times. It also spreads responsibility over capital and labor, since some plans are more likely to be funded (employer and individual plans), and some are more likely to be unfunded (government plans).   Here are some advantages of having these retirement plans for employers, employees, and the nation.

- **Employers** provide pension plans not only out of the goodness of their hearts; they have business reasons to provide them. For example, they help employers manage their workforce: they allow for retirement with dignity and they help employers compete for and retain employees. In addition, employers contribute to pension plans in the US because they are tax efficient ($1,000 contributed to a pension plan will provide a larger pension than $1,000 saved outside the pension plan) and because they can satisfy employee demands.

- **Employees** want an employer pension plan because it improves their chances for a secure retirement. Without employer plans, many employees would not save enough, because of our myopic desire for consumption now over saving for retirement. In fact, a Yankelovich poll that the Academy did, showed that Americans most preferred saving through employers over doing it themselves or through the government.

- **Nation:** Pension plans are good for the nation, because they provide a large source of efficiently invested assets in our economy and reduce welfare costs. Pension plans relieve pressure on government programs like Social Security for providing larger benefits.

The US Income tax system encourages employer pensions: In the US, we tax all income (wages *and* investment income), not just consumption. Thus, economists will note that by taxing savings, we discourage it, and in fact, we penalize investment by taxing it more than once. But that is not the whole story. Our tax system encourages large amounts of long-term savings when it is used for socially encouraged reasons such as retirement, home ownership, and education. For example, taxes on pension savings are deferred until pulled out.

Consumption taxes might discourage pensions: If we went to a consumption tax, VAT (Value Added Tax), or flat wage tax, there would be no special tax advantage to retirement savings. Unless some tax advantage was inserted, an Academy monograph predicted that most employers would drop their retirement plans, and national savings might actually decrease, not increase. Our reasoning is that medium and low-income people would save less, and high-income people wouldn't offset that decline (they might just substitute one savings for another). Why? US pension rules require almost all employees to be covered by the company pension plan, particularly in DB and money purchase DC plans.

Our smaller Social Security benefits encourage employer pensions: In addition to the tax advantages, another reason why US employers provide pensions is because our Social Security benefits, by design, are not enough to provide an adequate *replacement* income in retirement, especially for higher income people.

Benefit Adequacy and Coverage: Large employers often define benefit adequacy in terms of whether a 30 or 40-year employee's standard of living can be maintained into retirement. For example, if Social Security replaces 30 percent of an employee's final pay, then the employer might want to provide 40 percent from the pension plan, since about 70 percent is needed to maintain one's standard of living into retirement (because certain taxes, expenses, and savings are gone in retirement). For low-income people in the US, this percent can be 80 percent or even more if one wants low-income people to be able to buy their own long-term care insurance (and other medical costs not provided by our Medicare), instead of falling on Medicaid (our medical system for people who can't afford health care).

However, many US employers today (particularly small employers) do not feel responsible for maintaining a worker's standard of living into retirement. With the advent of 401(k)s, most employers now see retirement security as the worker's responsibility. In fact, half of employees do not participate in an employer pension plan. That is partly due to the fact that our pension rules allow the exclusion of (1) employees working less than ½ time, (2) young employees, (3) newly-hired employees, and (4) employees declining to contribute to the company 401(k). If one excludes these employees, and asks what percent have something from a current or prior employer, then coverage rates are closer to 2/3rds or 3/4ths. These coverage rates have not changed much over the last 30 years, because it is difficult to increase coverage in a voluntary system at small employers, even with tax advantages. Other ways to increase coverage are automatic deductions from wages (unless waived) which is being tried more in US 401(k) plans, mandating coverage of more people form the four groups listed above, a mandatory system (as in Australia), and a mandatory system that allows contracting out to employers (as in Japan or subsidized, as in the UK).

The philosophy of our Social Security system has been that social adequacy is just as important a goal as individual equity. However, its goal is definitely not to maintain one's standard of living. Its goal is probably closer to providing retirees a minimal level of benefit adequacy so that they don't live in poverty, although even that is not guaranteed by the US Social Security system. If a worker does not have a full career of wages above poverty, Social Security may not boost them above poverty either. Our Supplemental Security Income program exists to help on that.

Defined Benefit Plans

DB versus DC: On the subject of DB versus DC, the Academy actually takes a position. We agree, along with the World Bank, that it makes sense to have *both* a DB and a DC plan, since they both have their own advantages for employers and employees, but we wouldn't want the law to require both. US history and culture makes it difficult to set mandates on employers. Choice is almost always preferred. Thus, US pension laws do not require employers to have retirement plans. Employers and employees can decide what pension plan (or plans) is best for them.

DB decline: However, changes in DB coverage rates are a big concern for policy makers in the US. In 1975, just after ERISA was signed into law, 40 percent of the US labor force participated in a DB plan, and 16 percent participated in a DC plan (see Chart I). Today, however, the reverse is true: 46 percent participate in a DC plan, while less than 20 percent participate in a DB plan. Since a DB plan can totally mimic a DC plan, I contend that the primary reason for the decline in DB plans is the uneven regulatory treatment for DB plans in US law. US laws allow much more flexibility in DC plans. For example, section 401(k) of our tax law allows only DC-type plans to have tax-deferred employee contributions, employer matches, and profit-based contributions. In addition, DC plans have much gentler regulation. (See Appendix A for a further discussion of this issue.)

DB plans can mimic DC plans: Many people have asked: How can a DB plan mimic a DC plan? In the US we call them cash balance or hybrid plans. You may call them funded notional DC (NDC) plans. Actually, DB plans can be anything you want. For example, a major US company has a DB plan that matches their company 401(k) investments, complete with choices of several stock and bond mutual fund indices. However, the company decided their DB equivalent would improve on their 401(k). They guaranteed the employee's principle, in order to encourage them to move their money from the 401(k) to their DB plan. They didn't think that would cost too much, since employees have to quit to get their money, but the past few years have not been kind to them.

The DB advantage is also its disadvantage: This points out what I would say are the two weaknesses of DB plans, and they come directly from their strengths. DB plans can create some nice promises and reduce the risks of employees, but that can create risk for the sponsor. The DB plan doesn't have to have risks (it can exactly mimic a DC plan), but it usually does. Another weakness is: sponsors can add costly provisions to DB plans too easily, such as granting past service to a whole group of new employees taken over in a buyout. No one would ever expect a DC plan to do that. DC plans discipline us. Sponsors don't add costly retroactive provisions to them or benefits that workers can arbitrage. In addition to adding risk, the flexibility of DB plans allows for "bad" designs that can dramatically increase the complexity of the plan *and* the complexity of laws regulating them. Thus, it is not the DB plan that is inherently problematic. A DB plan doesn't have to have risk or complexity. It's the *provisions* that are added to DB plans that can cause the problems.

Level playing field: Due to the loss of so many DB plans in the US (not only to new employees, but also for all current employees – which is allowed in the US), the Academy frequently pushes for a level playing field between DB and DC laws. Thus, the Academy (and my talk today) may appear to favor DB plans, but it is only to get us back to the level playing field. We also suggest that annuitization should be encouraged by the government since annuities can reduce government assistance costs. Some ideas that have been proposed are:

(1) Tax advantages for plans that only provide annuities;
(2) Tax advantages for retirees that select annuities; and

(3) Restrictions on lump sums, such as prohibiting them in poorly funded plans, and putting an excise tax on them.

However, if retirement professionals want government to encourage DB plans, then we need to explain to the government why they help society.

Advantages of DB plans: DB plans have their own distinct advantages and disadvantages. Some special advantages of DB plans are:

- **For employees**, DB plans provide a secure, stable income for life. On the other hand, DC plans in the US rarely provide lifetime incomes — they almost always only pay out lump sums. I think that is only natural. Employees see their accounts, so they request them when they leave their jobs. We call this leakage in the US. In addition, over half of low-income employees do not participate in the typical DC plan in the US – a 401(k), which allows employees to choose whether to contribute. On the other hand, DB plans generally cover most or all full-time permanent employees. In DB plans, employees generally don't have to worry about risks, such as a bear market when they want to retire or after they retire. In most DB plans, workers also don't have to worry about inflation or interest rate risks before retirement. For example, if interest rates decrease, annuities get more expensive, but employers take that risk on. These economic risks can be almost totally eliminated (not moved to the employer), if the employer chooses to invest in inflation-indexed bonds or annuities. In addition, pension plans can reduce longevity risk by pooling. An individual can't predict their payment stream, unless they know exactly when they are going to die. However, with a large group of retirees, actuaries can make a fairly good forecast of the pension payments, so the only remaining risk is a major medical breakthrough increasing life spans. If our forecast is inadequate, we will probably learn about it gradually, and thus it will affect the employer's books gradually also. In addition, if employees pay their retirement income out of a lump sum, it will have to be smaller than what they could get from an insurer, unless they know for certain that they will die sooner than the populations' average life expectancy.
- **For employers**, DB plans can provide contribution flexibility and are better at keeping a stable workforce (e.g., employees with DC plans may retire early when the stock market does well and later if it does poorly). DB plans also help employers meet union demands. In addition, large DB plans are professionally managed and achieve higher returns with less risk than a typical employee-directed account. A study by Dalbar, Inc notes that over the 19-year period from 1984 thru 2002, equity mutual fund investors had an average yield of only 2.6 percent (a real return of minus ½ percent) due to chasing returns (buying high and selling low). Meanwhile the S&P index had an average return of 12.2 percent and pension plans probably had returns close to 9 percent.[1]
- **For the nation**, DB plans are better than DC plans at providing the country with some very important advantages, which many people (including some policymakers) will not realize are lost until many years from now, when it is too late to regain them. For example, DB plans are more effective than DC plans at reducing near-poverty rates at older ages, reducing welfare expenditures, providing a huge source of efficiently invested assets in US markets, and deferring taxable income to the future when it is needed (for example, to reduce the strain on financial resources caused by retiring baby boomers).

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[1] Using the difference between average returns on indices of a typical pension portfolio and Table E24 average returns from the 1998 DOL Form 5500 abstract. It would be interesting to compare this with large DC plans that are managed by the employer. Their returns might be more comparable to large DB plans, unless the employer is nervous about allocating as much to equities in the DC plan, since it can directly affect the amount of the employee's benefit. However, these plans will decline to probably only a few as companies have switched to the 401(k), now that comparable amounts can be tax deferred in them.

DB plans can get larger benefits than DC and individual account (IA) plans, because they don't "waste" money like DC plans in the following areas:

- **DC plans can "waste" money on Heirs**: Upon death, the remaining funds in one's DC account goes to their heirs (or to their estate if there are no heirs), unless an annuity is purchased, which is rare. Many people would say that bequeaths (particularly those to children) are not wasted, but a variable bequeath doesn't make sense to me. If a retiree doesn't live long, the inheritance is large; however, if the retiree does live long, the inheritance can be zero. What is the value in an inheritance, if the heir can't plan on it? To me it would make more sense to decide how much you need for yourself and how much you want to give to your heirs, and then give it to them immediately (so that you see them enjoy it) or in an inflation-indexed death benefit (if you don't want them to waste it while you are alive). Retirees may worry that the pension plan (or insurance company) will win if they are hit by a bus and die early. However, pension plans don't win when someone dies early. Their assets are used to pay larger benefits to everyone, particularly the retirees who live longer than the population's life expectancy.
- **DC plans "waste" money on workers who retire during market bubbles**: Chart II shows the replacement rate that retirees would get if they invested 10 percent of their wages in a stock index (and moved to a bond index over the 5 years before their retirement to dampen volatility). As you can see, workers who retired in the late 1960s and late 1990s got over 100 percent of their wages replaced by an indexed annuity. (However, those who retired between 1975 and 1985 would have less than 60 percent of their wages replaced.) I am a trustee of a large church plan that had this problem. Pastors had replacement rates over 100 percent in the late 1990s, so they retired early, and now we have a shortage of ministers. We decided that that money was wasted, and should have been held and used for pastors retiring in different periods, so we are planning on moving back to a DB plan. Of course, saving high stock returns for later periods makes for good retirement policy, but it also increases risks on the employer. Therefore, decision-makers will have to balance the desire to share the good returns with everyone versus the desire to reduce employer risks. Organizations that will exist for a long time like governments and churches are better able to do this, but even they have to be concerned about shrinking taxpayer pools or shrinking memberships. In those cases, sponsors will be better prepared if their DB plans are over-funded with equities or immunized with bonds, so that market losses won't hurt future taxpayers (or members). Then if difficult times come, those holding stocks will bear more of the demographic costs than the taxpayers.
- **Individually directed DC plans can "waste" money on larger investment expenses and in unfortunate investment decisions**: Individually directed IA plans generally have larger investment expenses. In addition, the Dalbar studies mentioned earlier suggest that individuals get lower returns. While Dalbar's studies show that equity mutual fund investor returns were 9 percent below market returns, Chart III shows the effects of investment expenses and losses reducing returns by 3 percent per year. The effects of this (or a 50 - 50 allocation to equities and bonds), can result in lower replacement rates than a DB plan invested 100 percent in bonds.

On the other hand, wealthy people may not have the above problems, so they may prefer individual accounts over a DB system. They may know how to avoid the unfortunate investment decisions and expensive mutual funds. Furthermore, they may not be as concerned with volatile markets or the need to buy annuities (because for example, their retirement benefits are probably adequate for them, and they may want most of their assets to flow to their heirs).

In addition, it needs to be noted that DB plans can also "waste" money on complexity, regulatory compliance, increased litigation, retroactive benefit increases, and other possibly "unwise" benefit promises that DC plans probably would not have, and these can be just as large or larger than the funds "wasted" by DC plans. Furthermore, employees (especially those at typically young hiring ages) don't appreciate DB plans. Finally, the unprecedented combination of severe declines in both equity values and interest rates have scared employers into considering other options, such as 401(k) plans. The stock market may have started reverting to the mean, but interest rates are still low, which is making the DB plan very expensive (and it is not appreciated by the employees – only the retirees may understand what low interest rates mean to retirement income).

Cash Balance Plans

Reasons for their introduction: Cash balance plans in the US were first created in the early 1980s when a large bank decided it wanted to index its pensions after employees separated from work. Traditional DB plans in the US based their pension on the pay level when the employee quit, which was much smaller than their pay levels at retirement, due to the high inflation at that time. Bank employees can be mobile, so a traditional pension plan was not valuable at attracting new employees. They decided that indexing pensions after separation would fix that problem.

Equivalence to indexed DB plans: In the process of redesigning the plan, the bank's pension advisors told them that a DB plan with an X percent of final pay formula with inflation-indexation to retirement was very similar to putting money (10X percent of pay) each year into the employee's account and growing it at a rate equal to pay increases before quit date and price inflation after quit date. Redesigning the plan this way had several advantages. It was much simpler than the complexities of an inflation-indexed final pay DB plan. It would look to employees like a savings plan. However, the annual rate of return would be at pay increase rates or inflation levels. These could be low in comparison to what investments earned, and pay increases could be negative for employees that reduced their hours. The solution was to give the account an investment-related return. Thus began the cash balance plan.

However, actuaries have found some problems with cash balance plans over the past 20 years.

Low interest credits: Due to US tax law, CB plans often provide employees with interest credits based on Treasury bond rates. Employees may feel that these interest credits are low in comparison to what they could earn in the markets. On the other hand, the employees don't need to worry about losing principal, so they can be more aggressive in their other investments.

Investment risk: Employers have the flexibility to invest the plan assets in equities, and they generally do. They can pass the extra returns on to employees thru extra ad hoc interest credits or a higher contribution formula, or they can use it to decrease employer contributions. Of course that means the employer, and the government insurer, also take on more risk due to the mismatch with the plan's liabilities. It is the employer's call to decide if the reward is worth the risk, which includes both higher minimum plan contributions and extra premiums to the government insurer, if the plan becomes underfunded due to a market decline.

Some cash balance plans credit equity returns, so the employee can have risks. This can actually decrease the employer's risk, if they invest in the appropriate assets. Some employers guarantee employees a positive return on the equity fund in exchange for a limit (or reductions) in the potential returns. The guarantee reduces the risk for the employees, and the employer can immunize their risks through paying for the put through the use of calls on the upside.

Interest rate risk: Employees usually retain an interest rate risk in US cash balance plans. If interest rates are low when they reach retirement, their annuity costs will be high, which will reduce their pension.[2] This can also happen if the cash balance (or NDC) plan buys indexed annuities at a time when real interest rates are low. Employers can reduce the risk to employees by guaranteeing the annuity rate, regardless of interest rates, but then the employer takes the investment risk. Of course, if they are invested in equities they also get the reward, and many people believe that markets and interest rates eventually revert to their means. While this risk/reward payoff is not good enough for an insurance company (because they can't get future customers to pay for their past mistakes, and a new insurer won't have to charge for that), some people think that pension plans can get around this problem. Their argument is that pension trusts are separate from the employer, which enables smoothing techniques to work in a timely fashion so that future rewards can compensate them in time so that it doesn't force their products to be more costly than competitors who don't take the risk.

Inflation risk: The interest credits can be less than inflation right before retirement, which adds a risk to employees that doesn't exist in the traditional final pay DB plan. There have been many periods where inflation exceeded bond returns. While equity returns are noted to be good inflation hedges in the long term, they are not in the short term – see in particular, the 1970s. In addition, while cash balance could offer inflation-indexed benefits, they generally don't, so retirees could find periods of high inflation very difficult. Sometimes in those situations, employers (who may have received higher returns from stocks) may provide ad hoc cost-of-living adjustments to the retirees, but that is not promised or guaranteed by most sponsors, except in government plans, where it is quite common.

Leakage risk: As cash balance plans are based on an account, mobile employees are more likely demand that the plan pay out lump sums. If employees saved the distribution in an individual retirement account there would be no concern. However, surveys show that mobile and young employees with small lump sums are more likely to spend them. In addition, Dalbar studies suggest that employees who do save their lump sums don't invest them well, and often have returns less than inflation over long periods.

Expenses: CB plan administrative expenses can be less than those of individually directed DC plans, since they don't have to invest the assets as directed by each employee.

Integration with disability and survivor benefits: Since only a small account is built up for new and young employees, Cash Balance plans don't integrate as well with the disability benefit as do traditional DB plans. This concern can be accommodated by adding a long-term disability (LTD) plan to provide the desired benefit. One question that remains is what to do with the account when an employee becomes disabled. Should it be used to offset the LTD benefit, or should it be saved for the Retirement benefit. If the disabled employee dies before retirement, the account balance would be "wasted". On the other hand, if the disabled employee lives beyond the retirement age, more than the account balance will be needed. Companies can contribute annual amounts to the CB plans while disabled to accommodate this concern. However again, it will be wasted if the employee doesn't live to retirement, which makes the CB plan more expensive than a DB plan. Similar issues exist for survivor benefits of employees who die while working.

Not as transparent as people may think: Because cash accounts appear more transparent, people may think they really understand these plans and be able to compare them. However, it is not that

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[2] This risk could be immunized if the interest crediting rates equaled the full return on the long bonds (including appreciation), but normally it is just the forward bond rate.

easy since a higher interest crediting rate can offset a lower contribution rate for longer-term employees, and both can be offset by different annuity purchase rates, and all three of them could change. In addition, most employees have no idea how to convert them to an income at retirement.

Conversions: The biggest difficulty in the US has been the conversion of traditional DB plans to cash balance plans. Traditional DB plans are back-loaded. They provide most of their value in the years leading up to retirement, whereas, cash balance plans are more age neutral in their distribution of accruals. During a conversion, older employees will have low accruals in the early years but lose the higher DB accruals that they were expecting in the later years. While the law and plan documents stated that employers could change or terminate the pension plan at any time, employees developed expectations that were not met by the cash balance conversion. For this reason, most conversions provided transitional credits to employees near retirement. But some people still contended that the conversions were unfair to older employees, and that employer communications deceived these employees (as it was difficult for employees to compare cash amounts in a CB plan to annuity promises in a traditional DB plan). The US Congress has already enacted legislation to improve communications for conversions, and there are proposals for minimum standards on the benefits provided after conversions. However, it may be very difficult for the US Congress to resolve this very contentious issue, which puts into jeopardy most of the private sector DB pension system in the US. Most employers with a mobile workforce want to convert to a cash balance plan, because they make more sense for both the employer and the employee. If Congress doesn't resolve this problem soon, these employers will switch to a 401(k), in which case employees will carry all the risks (and probably pay for all the expenses) without help from the employer.

Notional DC plans

Conversions can deceive: Some of our history on cash balance plans may be helpful to countries thinking of converting to NDC systems, since Cash Balance plans are very similar to NDC plans. For example, I have seen written material from other countries saying they went to an NDC plan because that was the only way they could reduce the expectations of the population. That is very close to the arguments of US workers that they were deceived by their employers about the conversions. If you want to switch to an NDC system, it is very important that you decide upfront to communicate very clearly how the change will affect each individual. Knowing that may even influence the design of the new NDC system. It is not good to rely solely on people liking transparent account balances better. Many people may be happily deceived if they are told they now have $50,000 in their NDC account instead of the more valuable $10,000 pension they had under the prior rules (because $50,000 is a bigger number than $10,000), but not everyone will be deceived, and definitely not when they reach retirement. At that point, it will become very clear that they have a smaller lifetime income.

NDC systems recognize increasing life spans, but it is a benefit cut: Switching to an NDC system will reduce pensions as life expectations increase. It just won't be obvious because many people will not notice that annuity prices gradually increase due to longer life spans. That lack of transparency may make it easier to enact than increasing the retirement age in a traditional DB plan, which is much more obvious to people. However, it can only be because the political world is not communicating that they have the same effect.

Transparent cash simpler, and tempting: The cash accounts of NDC plans are simpler, and therefore better appreciated by workers. However, they may be tempting for people wanting to take their money out in cash when they have a greater need for it (e.g., health problems, expensive medical operation, education, unemployment) or when they move to another country. Maybe the fact that these NDC plans are often PAYGO, will rebut these requests for cash.

Low returns: If the interest credit is set at price or wage inflation or the contribution growth rate (and it is low due to a declining workforce), workers may become unhappy and demand to get their funds in cash so that they can invest the funds in the markets. It will be very transparent that the plan is not doing well.

Merging systems: Policy makers will note that their NDC system can be merged easier with other country NDC systems. However, all the countries will have to convert to the NDC system first, and address the issues discussed above, which could be just as difficult as fixing the traditional DB system to avoid the problems it has.[3]

Inflation, interest rate, and longevity risks: As mentioned earlier for cash balance plans, NDC plans can leave inflation risk and interest rate risk on the workers, unless they credit returns using price or wage inflation, and fix the annuity purchase interest rate. Workers will also retain some longevity risk (i.e., as we live longer, annuities at a fixed age get more expensive). However, it is probably appropriate that this additional cost be borne by the individual worker, unless the change is unusually fast so that it could not be planned for, in which case the annuity purchase rates could be smoothed by the state. There is also concern that the selection of the annuity rate could become politicized. No one knows how fast mortality will improve, and there are great arguments in the US on this subject. Depending on who decides the mortality table projection scale, one can have very different pensions. Eventually, a legislative body might have to decide which mortality improvement scale to use. Of course, an indexed DB plan is not immune from this issue, since the mortality improvement rate will affect the indexation of the normal retirement age. Thus, the legislative body might have to set it, but that seems much more understandable than setting a mortality table improvement factor.

Retirement Planning: The other problem with NDC, is that employees may not be able to plan for retirement as well. Replacement rates will change depending on the interest credits and annuity purchase rates in effect at their retirement. While younger employees find cash more transparent, it is not transparent to someone who is close to retirement, who doesn't understand how much their account can provide in lifetime income. The definition of transparency needs to change in the retirement field. Cash is NOT transparent for retirement decisions – only lifetime income is.

My Preferences: Thus, I think I would prefer an indexed career average DB plan for national systems. It can exactly mimic the notional DC plan by (1) indexing the normal retirement age to longevity increases, and (2) indexing pay to average wage growth. Indexing pay by wage growth will make more sense and appeal to taxpayers more than growing account balances by wage or productivity growth. Individuals won't be happy with investment returns equal to growth rates when they are low. In a typical DB plan it is also easier to index benefits to inflation. However, in an NDC plan there may be a push to index them to wage or productivity growth, which can be more expensive over the long run. To deal with fertility decreases, I would probably increase contributions immediately (since child care costs would decrease), and not wait until the affects were evident on productivity to reduce the indexation. I'd also invest the increased contributions in the market, not government bonds, so that the future was better immunized from tax increases. If policymakers are concerned with political intrusion in the equities market, they can get the exact same economic results for the trust funds and the demand for equity by taxing capital income.

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[3] For example, indexing the retirement age to longevity improvements, indexing salaries instead of using the final year's salaries (which can be manipulated), etc.

Summary

In summary, there are advantages to having both a DB and a DC plan. Since DB plans can exactly mimic DC plans, however, I personally do not see why employers would terminate a DB plan. It must be because US laws are much more difficult on DB plans, and employers have made their DB plans very complex and have inserted risks into them that they are finding difficult to remove. If we can make the legal playing field more level, it is my hope that we can show employers that they can keep their DB plans and modify them to reduce or remove whatever complexities and risks they don't want. A DB plan can be whatever you want it to be.

Appendix A
Why Have DB Plans Declined in the US?

Why are there fewer DB plans in the US today? The Academy suggests that non-level, complex, contradictory, and out-of-date laws are some of the primary reasons for the decline in DB plans. In 1975, just after ERISA was signed into law, 40 percent of the labor force participated in a DB plan, and 16 percent participated in a DC plan (see Chart I). Today, however, the reverse is true: only 21 percent participate in a DB plan, while 46 percent participate in a DC plan.[4] As Chart I shows, almost anyone who participates in a pension plan is in a DC plan. Sometimes, it is in addition to a DB plan.

Analysts have attributed the movement to DC plans to the increased mobility of workers, the transparency of DC plans to employees, and employer desires to avoid risks. But I do not think that they have pinpointed the reason fully, because DB plans can exactly mimic DC plans to participants. If the employer and employees wanted a DC plan, with employees being able to allocate their funds, they could simply change the DB plan formula to match the DC plan they wanted. There are cash balance plans in the U.S. that already do this. Converting to a cash balance plan would be much easier than having to terminate the DB plan and start up a DC plan from scratch. In addition, with the DB plan, the employer would keep the design, investment, and contribution flexibility. So, there must be another reason. One reason is that it is not easy to provide these kinds of cash balance plans and the rules are not clear on how to do it (even though they mimic a legal DC plan).

Thus, I suggest that the biggest reason for the decline in DB plans is that the regulatory and tax code create an uneven playing field for DB plans in the private sector. DC plans can have certain provisions, like pre-tax employee contributions and matches that private sector DB plans cannot have. As evidence, I note that Canadian employers and state and local governments in the U.S. provide a more even regulatory treatment for DB plans (e.g., they have pre-tax contributions), and all three have a much higher percentage of DB plans than in the U.S. private sector.[5]

The other primary reason is that pension law for private sector employers in the U.S. is much more onerous for DB plans. In fact, some pension professionals consider the regulations draconian. A study by the American Academy of Actuaries in 1993[6] showed that increased government regulation was the major factor in 44 percent of DB plan terminations in the late 1980s.

As further evidence, I note that there has also been a very large decline in DC plans that do not have a 401(k) arrangement. The US Department of Labor Form 5500 abstracts show that of the 46 percent of the labor force participating in DC plans; 3/4ths of that number are in 401(k) arrangements. When you subtract out the 401(k) arrangements, you find that the remaining DC plans trail behind even DB plans. In fact, due to EGTRRA,[7] this 12 percent participating in “other DC plans” may practically disappear. In fact, the “battle” has never been between DB and DC plans. It has been between 401(k) arrangements and all other plans. And 401(k)s won due to their more advantageous rules.

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[4] The 2000 Form 5500 data is not available yet, because pension plans file about 9 months after the end of the plan year, which could be September 2002 for plans with plan years starting in December of 2000.

[5] See Professor Rob Brown’s paper discussing why it did not happen in Canada in the July 2001 issue of the North American Actuarial Journal (NAAJ), and discussions in the April 2002 NAAJ.

[6] *The Impact of Government Regulation on Defined Benefit Pension Plan Terminations*, a Special Report by the American Academy of Actuaries (March 1993).

[7] EGTRRA, the Economic Growth, Tax Relief and Reconciliation Act of 2001.

Appendix B
Advantages of Individual Accounts suggested by some Economists

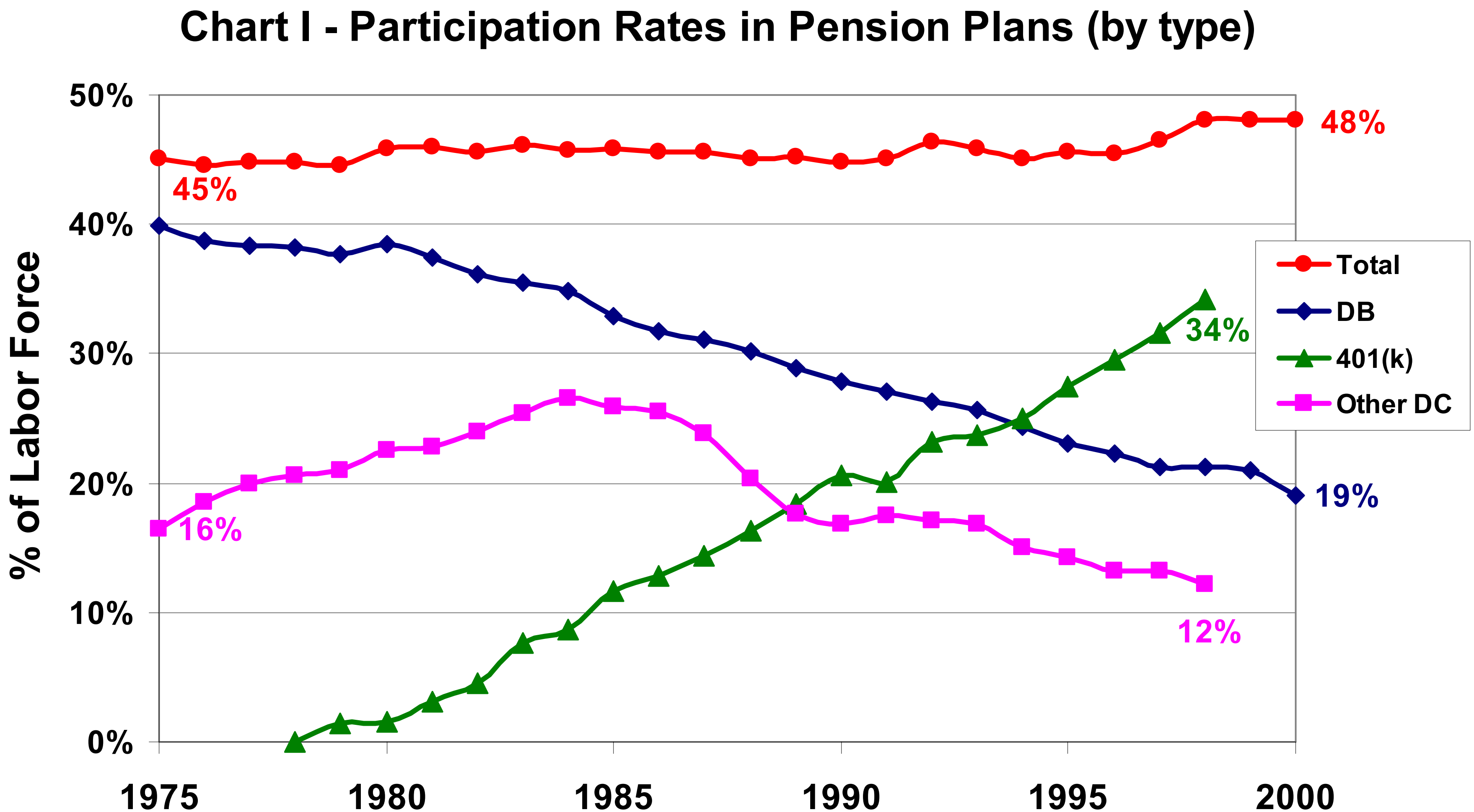
In the 1990s some economists expressed concerns with traditional DB systems and suggested that countries should switch to individual accounts (IA) systems.[8] While I agree that there is value in having both DB and DC-type benefits, the economists may not have realized that there were ways of fixing the problems within the DB system. In the following list, I provide advantages advanced by different economists for IA systems and provide alternative DB solutions for them. The economists wrote that individual accounts would:

1. Develop financial markets of countries transitioning out of communism
    a. Wouldn't individual investors be at a disadvantage in immature markets that are not well regulated yet? Is it fair to require all citizens to invest most (or all) of their retirement savings in those undeveloped markets?
    b. Wouldn't large pension plans be better at developing financial markets than individuals? They would have greater resources to defend their interests than individuals.
2. Increase national savings
    a. Individual accounts might not increase national savings if the government borrowed the funds to divert to Individual Accounts.
    b. Wealthy individuals might just substitute one savings for another.
    c. Would low-income individuals just borrow to meet the mandate, or would government need to help them? Either would reduce savings?
    d. The US Social Security (DB) system's surpluses greatly increased savings in the late 1990s. For another reason, DB plans might increase national savings more. People may not count those assets and thereby have less substitution.
3. Increase job creation
    a. If national savings isn't increased by individual accounts, job creation might not follow.
    b. Mandates on individuals to contribute to individual accounts might encourage an underground or informal economy to avoid taxes and mandates.
    c. Mandates on employers to administer (and possibly contribute to) individual accounts would hurt job creation. Small employers would resist these mandates.
4. Avoid the discouragement of work (i.e., labor market incentives are better under IA systems)
    a. Workers who retire early can get early retirement subsidies in DB plans, and may not be hurt by working fewer years.
    b. This was also a policy decision.
    c. DB plans don't have to have early retirement subsidies. They could eliminate them or restrict them just to lower income or blue-collar workers. Of course, special rules for special groups also invites problems, as other groups will want favors too.
5. Avoid bad redistribution to the rich in DB plans
    a. The first recipients of DB social security systems got large transfers from the public. The wealthiest got the largest transfers.
        i. This issue was not as obvious due to the DB nature of the system.
        ii. Policymakers could have limited the transfer. This is not a DB/DC issue.
    b. See also items 5, 6, & 7, which wealthy people could more easily take advantage of
6. Reduce manipulation (e.g., working extra hours in final year to increase the pension)
    a. A DB system can base benefits on career average pay to avoid this problem.

[8] In fact, sometimes World Bank and IMF loans were conditioned on countries adopting an IA system.

7. Avoid moral hazards of DB plans, such as those in items 4, 5, and 6
    a. Spouses with automatic spousal benefits can work in informal economy to avoid taxation.
        i. The DB system could switch to benefit sharing (or earnings sharing), instead of an automatic benefit for spouses.
    b. Means tested benefits can discourage savings and encourage abuse.
        i. Progressive DB systems and progressive taxes accomplish some of the goals of means testing while avoiding these two moral hazards.
    c. Flat DB benefits can be abused by working outside covered employment (and can be a windfall for part-time and temporary workers, and those who also worked in other countries).
        i. A flat DB benefit can be prorated for years worked.
    d. DB systems can be modified to better tie benefits to contributions.
8. Avoid the additional costs of improved longevity, by charging more for annuities at retirement in the future
    a. DB plans can index retirement ages to longevity improvements.
9. Reduce expenses and be easier to administer correctly
    a. Administering large DB plans can actually be easier and less costly than administering large DC systems. A large decentralized church plan found this to be true, and is planning to switch back to a DB plan.
    b. Countries that don't manage a DB system well may have problems managing IA systems too.
    c. CB and NDC plans can mimic IA systems with less cost, since they don't require revising asset allocations to follow worker allocation decisions.
    d. Competition can lower expenses, but if there is more work maintaining Individual Accounts, then it will still be more expensive. Currently, the US Social Security system's expenses are under 1 percent of benefits, while some IA system expenses can reduce benefits by 20 percent. They can get better service and higher returns with that additional expense, but note next item.
    e. IA expenses can be large on small accounts.
        i. Small accounts can be subsidized.
10. Improve rates of return
    a. Low rates of return of the DB system may be due to corrupt and inefficient governments.
        i. IA returns can be hurt by those governments too, unless the accounts can be invested outside the government.
    b. Low returns in DB systems may also be due to decreased fertility rates (the current generation pays more for the prior generation than it will receive from the following generations), not the DB /DC decision. IA systems could be affected by lower fertility too, if it reduced productivity. And they would still have to pay off the unfunded costs of the prior promises, just like the DB system.
    c. If legislative bodies don't want a national DB system invested in equities to avoid political manipulation of individual companies thru buying, selling, and voting of shares, then they can tax capital income and give it to the DB system, which is economically equivalent to equity allocations in the trust funds.
11. Can reduce poverty just as well as DB plans for elderly, and better for heirs
    a. Leakage to heirs means IA systems may not help elderly as well.
    b. IA systems would have to mandate annuitization of IA wealth at retirement to help elderly poverty rates as much as DB systems.
    c. DB systems can provide benefits to dependents and can provide additional death benefits to heirs, if desired.

12. Increase transparency
    a. Cash is more transparent to younger workers.
    b. Lifetime income promises are more transparent to workers close to retirement, since people don't know how to convert cash to lifetime income.
    c. Early retirement factors and indexed retirement ages in DB plans can be more clear than if someone had to convert their account balance to an annuity amount.
    d. Cash balance and NDC plans can combine the best of both worlds, by showing cash when young and lifetime income when older. They are equivalent to indexed career average DB plans.
13. Reduce political risks
    a. IA systems have political risks if markets tank, or there is a lot of leakage, or when people that don't annuitize run out of funds, or if small accounts are hurt by large fees.
14. Allow diversification of funds outside country
    a. That is good if and when a small country is not doing well.
    b. However, foreign investments can hurt a country's markets when made.
    c. DB plans can invest outside country, too.
    d. Workers are best diversified when assets are spread over all asset classes and responsibilities are spread over all three legs of the retirement stool (nation, employer, and individual). An individual account system on top of a DB system can help that happen.



It's not a battle between DB and DC. It's a battle between 401(k) and the others, and 401(k) is far ahead.
Why? Favorable laws for 401(k), especially pre-tax contributions and match.
Sources: Workers from BLS statistics: employed (FT & PT) and unemployed wage & salary workers. Coverage from DOL/PWBA Abstract of 1998 Form 5500 data (Winter 2001/2002) Tables E4, E8, & E23, and NCS for 1999 & 2000.

Chart II - Replacement Rates from Qualified Savings

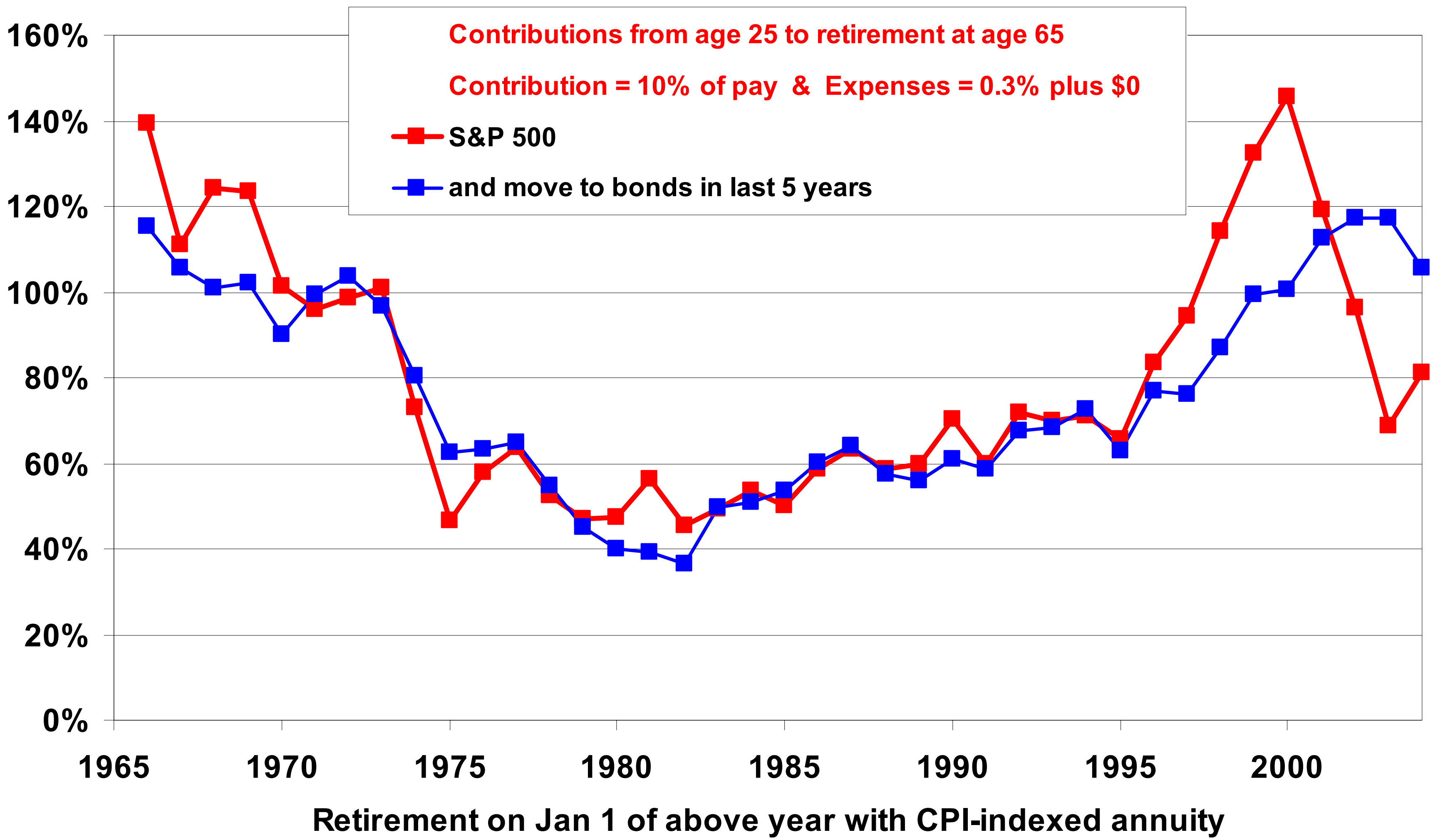


Chart III - Replacement Rates from Qualified Savings