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## Pension Policy

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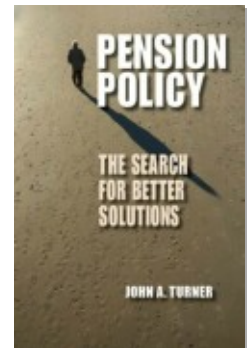
Published by W.E. Upjohn Institute

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Pension Policy: The Search for Better Solutions.

First ed. W.E. Upjohn Institute, 2009.

Project MUSE.[muse.jhu.edu/book/17381](https://muse.jhu.edu/book/17381).



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# 10

## The Decline in Annuitization and How to Reverse It

Annuities are generally not provided to participants in 401(k) plans.<sup>1</sup> This is a key shortcoming of 401(k) plans. Annuities are not required in 401(k) plans, making those plans practically indistinguishable from tax-favored retirement savings accounts, rather than making them seem like pension plans. With the decline in defined benefit plans, one of the goals of some policy analysts has been the “DB-ification” of 401(k) plans, meaning that 401(k) plans would be structured so that they have some of the desirable features of defined benefit plans, including providing annuities. Because annuities are a complex subject, they are treated here, in a separate chapter from other benefits issues, which were discussed in the previous chapter.

The goal of pension policymakers is to enable retirees to achieve financial security. With continued increases in life expectancy and poor planning by some, retirees risk outliving their assets. Retirement benefits generally are intended to protect against this risk. This risk can be managed through a life annuity, which provides a guaranteed stream of income that the recipient cannot outlive. While Social Security provides lifetime, inflation-indexed benefits, those benefits do not provide enough income for most retirees to maintain their preretirement standard of living. Defined benefit plans traditionally have provided their benefits as an annuity, but those plans are declining in importance.

This chapter surveys the variety of annuity payout options available in defined contribution systems. It provides examples of payout options from Sweden, the United Kingdom, and Chile and compares those to options in the United States. These countries are chosen because together they provide a wide variety of payout options under different institutional arrangements. The Swedish system, the newest of the three, has been designed with an attempt to learn from the experience of other defined contribution systems. The British and Chilean systems have substantial experience in paying benefits, and those systems have evolved over time.

Defined contribution plans accrue benefits in the form of an account balance and typically in the United States pay benefits as a lump sum or as a series of withdrawals. Thus, with the growth of defined contribution plans and the decline in defined benefit plans, the extent to which workers annuitize retirement income is expected to decline over time, unless workers start obtaining annuities from 401(k) plans. While economists and others have predicted that the growth of 401(k) plans would lead to the growth of the use of annuities (Brown et al. 2001), only 10 percent of individuals with defined contribution plans annuitized their account balances when terminating employment, both at ages 60 to 64 and at ages 65 to 69 (Gale and Dworsky 2006). However, Holden (2007) finds that 23 percent of those having the option to take an annuity do so, while 47 percent take a lump sum, 26 percent defer taking a distribution, and 10 percent take installment payments. Selectivity may affect these statistics, however, as annuities may be offered in workplaces where workers have greater demand for them. A different study (Medill 2008) finds that 11 percent of people in one plan take an annuity when given the option.

## **ANNUITY BASICS**

An annuity is a financial instrument that converts an account balance into a stream of periodic payments. Life annuities provide retirees periodic payments that continue until death. They insure workers against the monetary costs of living longer than expected.

A basic life annuity pays fixed nominal benefits until the annuitant's death. This product combines two features, whose importance varies depending on the age at which the participant takes the annuity. First, annuities provide retirement income, and in this respect they are comparable to other financial instruments, particularly bonds. Second, annuities have an insurance component. They insure against the risk that retirees will outlive their resources. Because retirees tend to spend down their savings, that risk increases with age. Thus, the relative importance of the insurance aspect of an annuity is greater the older the age at which the participant first receives benefits.

Annuities provide insurance against outliving one's resources by pooling mortality risks across individuals. Other risks workers face also can be mitigated by purchasing an annuity. An annuity provides a mechanism for controlling one's level of consumption over time, thus providing a valuable device for self-control and self-discipline (MacKenzie 2007). With an annuity, capital market risks are shifted to the financial institution providing the annuity, usually an insurance company.

Workers purchasing annuities benefit from the "mortality credit," meaning that workers who survive to older ages benefit from the assets of those workers who die earlier. For this reason, annuities typically provide a higher expected return than bonds for workers who live relatively long. However, annuities generally provide a lower expected rate of return than equities, though also with lower risk. Annuities are particularly valuable for women because women tend to outlive the men in their lives, and their risk of poverty at the end of life is greater than for men.

## **ANNUITIZING 401(k) PLANS**

While 401(k) plans generally do not provide annuities, when an annuity is offered by a 401(k) plan, workers generally do not take it. This section investigates why most 401(k) plans do not provide annuities and why most 401(k) plan participants do not take them when offered. It considers changes in policy and in features of annuities to increase the extent to which annuities are offered and to which participants take them.

### **The Effects of Unisex Pensions**

Annuities offered through employer-provided pension plans in the United States must calculate benefits using unisex mortality rates. That requirement is the result of a Supreme Court ruling that using gender-based mortality tables would constitute sex discrimination in compensation. The case *Arizona Governing Committee v. Norris* 463

U.S. 1073 (1983) held that employer-provided pension plans were required to provide men and women the same level of benefits from an annuity if they were the same age and had the same account balance. This means that benefits are determined using the same mortality rates for men and women, not recognizing that women at retirement ages on average live about three years longer than men. Privately purchased annuities do not have this requirement, and are sold on a gender basis in every state except Montana.

Unisex single life annuities are favorable to women but adverse to men, compared to gender-based annuities. The disadvantages to men of purchasing annuities through a 401(k) plan could be offset to some extent because group annuities are priced more cheaply than single annuities in the private market. The disadvantages to men are also offset to the extent that they choose joint and survivor annuities.

Adverse selection occurs when people selecting annuities have information about their life expectancy that the annuity provider does not have. For example, people who choose voluntary annuities on average have lower mortality rates for their gender than the population as a whole. The selection caused by a unisex requirement is not adverse selection because gender and gender differences in life expectancy are common knowledge to both the participant and the insurance company. However, this type of selection has the same effects as adverse selection: it is information about life expectancy that insurance companies are not able to use. Selection increases with the range of mortality rates in the population under consideration, and thus it increases when men and women are pooled together in a single risk pool. Adverse selection either results in insurers raising their premiums or not offering the product at all. Adverse selection concentrates risk, rather than spreading it, and thus hinders the functioning of an insurance market.

The Thrift Savings Plan for government workers allows workers to calculate online how much in benefits they will receive from their account balance. This calculation is done on a unisex basis, and thus is relatively unfavorable to men taking single life annuities. The unisex annuity payable from the Thrift Savings Plan in March 2007 for an account balance of \$100,000 with the annuity taken at age 62 was \$8,280 annually.

The amount the Thrift Savings Plan provides can be compared to the amount indicated by online annuity calculators that would be available to men in the individual annuity market. An informal survey of online calculators indicates that men participating in the Thrift Savings Plan could receive higher benefits if they purchased an annuity through the individual annuity market, while women would receive lower benefits (Table 10.1).

The level of benefits women receive from the Thrift Savings Plan is higher than what they would receive in the individual market. However, the difference is only a little more than \$200 a year, suggesting that most single life annuitants in the Thrift Savings Plan are women, and that the annuity is priced accordingly (Table 10.2). While the Internet survey was not exhaustive, it appears that women could not find a higher annuity in the individual purchase market than the Thrift Savings Plan annuity, while men could.

The Thrift Savings Plan annuity may not be representative of annuities offered by other employers. Because the federal government negotiates for the annuity, it may be that the annuity provides benefits at favorable rates. If that is the case, it further strengthens the point concerning the effect of the unisex requirement on men being able to get better annuities outside the Thrift Savings Plan.

An earlier survey found similar results. The survey of payments from annuities in qualified pension plans (where the unisex requirement holds) and other annuities found that on average the payments from qualified plans were less than other annuities for men, but more for women (Brown et al. 2001, p. 157). However, annuity payments vary considerably, and not every qualified annuity for men paid less than every nonqualified annuity. Payout differences across pension plans may be due to different assumptions for different groups of workers as to mortality experience.

That study found that the annuity benefit payable to men in the Thrift Savings Plan was slightly larger than the average of that payable to men on individually purchased annuities. However, it was somewhat lower than the average for the 10 best nonqualified annuities. It found that the Thrift Savings Plan annuity payable to women was higher than the average of the ten best qualified or nonqualified annuities in the

**Table 10.1 Features of Annuities in Mandatory Individual Account Systems in Sweden, Chile, and the United Kingdom**

Features	Country		
	Sweden	Chile	United Kingdom
Entitlement conditions			
Entitlement age	61	60 women, 65 men	60
Early benefit receipt before entitlement age with more stringent requirements	No	Yes, based on account balance	No
Benefit receipt while working	Yes	Yes	Yes
Maximum age by which benefit receipt must begin	No	No	75
Annuity acquisition			
Mandatory vs. voluntary annuitization	Mandatory	Voluntary	Until 2006, mandatory starting at age 75; starting in 2006, mandatory at age 75 except for those claiming a religious exemption
Annuity provider	Government	Life insurance companies	Life insurance companies
Factors used in determining annuity value	Age, year of birth	No restrictions	Age, gender, impaired health, year of birth
Fees			
Level and structure of fees for annuitization	Uniform percentage of account balance	Determined by life insurance company	Determined by life insurance company

Disclosure of fees	Not separately disclosed, bundled with individual account fee	Not separately disclosed, incorporated in net annuity payments	Not separately disclosed, incorporated in net annuity payments
Benefit forms			
Phased or partial annuitization	Yes	No	Yes
Fixed or variable annuity	Either fixed annuity with some upside variability or phased withdrawal	Fixed but price-indexed	Price-indexed, up to 5% a year
Lump sum benefit allowable	No	Yes, for part of account	No
Disability benefits	Provided separately	Provided separately	Provided separately
Preretirement withdrawals for medical expenses, educational expenses, or for purchasing a home	No	No	No
Minimum period payment guarantees	No	No	No
Minimum benefit guarantee	No	Yes, for workers with 20 years of contributions	No
Benefits for other persons			
Spousal benefit	Worker can contribute to account of spouse	No	No
Benefit for divorced spouses	No	No	Can be negotiated as part of divorce settlement
Survivors' benefits	Optional	Required for men who annuitize their account	Yes, 50% survivors' benefits must be provided



**Table 10.1 (continued)**

Features	Country		
	Sweden	Chile	United Kingdom
Bequeathable benefits	No	Yes, if taking phased withdrawals	Yes, if taking phased withdrawal before age 75
Risk reduction			
Reinsurance of annuities	Government guarantees annuities	Government guarantees annuities	No government guarantee
Inflation protection	No price-indexing, option of variable annuity	Fully price-indexed annuities	Annuities price-indexed up to 5% a year
Interest rate guarantee for annuitization	Guarantee at minimum of 3%	No guarantee	No guarantee
Taxation and income redistribution			
Taxation	Same as wage earnings	Same as wage earnings	Same as wage earnings
Income redistribution	No explicit redistribution, implicit redistribution through mandatory annuitization	Minimum benefit guarantee provides some redistribution, unrestricted annuity pricing limits redistribution through annuitization	No explicit redistribution, implicit redistribution through mandatory annuitization

SOURCE: Author's compilation.

**Table 10.2 Comparison of Monthly Annuity Benefits for a \$100,000 Account Balance with Unisex and Gender-Based Pricing, Benefits Taken at Age 62, 2007 (\$)**

Plan type	Men	Women
Unisex—Thrift Savings Plan (MetLife)	690	690
Gender-based—Annuitybid.com	754	670

SOURCE: Thrift Savings Plan (2009).

**Table 10.3 Comparison of a Unisex Annuity Provided through the Thrift Savings Plan and a Gender-Based Annuity Provided to Individuals by the Same Insurance Company, 2007**

Annuity source	Monthly benefit (\$)	Interest rate (%)
Thrift Savings Plan (MetLife)	888	5.25
Individual purchase (MetLife)	806	5.30

NOTE: This assumes an account balance of \$140,000 for a male age 57. The quotations are for March 19, 2007.

SOURCE: Thrift Savings Plan (2009); MetLife agent.

individual market. Thus, this earlier study is consistent with the results of our informal Internet survey.

Table 10.3 compares an annuity for a man obtained through the Thrift Savings Plan to an annuity for a man obtained individually through MetLife. MetLife is the annuity provider for the Thrift Savings Plan, so this comparison holds constant the company providing the annuity. The MetLife annuity quote was obtained from a MetLife agent, rather than from the Internet. The interest rate used for calculating both annuities is slightly higher for the MetLife than for the Thrift Savings Plan. The Thrift Savings Plan annuity is calculated using unisex mortality rates, while the MetLife annuity is calculated using gender-based mortality rates.

The MetLife annuity provides benefits about 9 percent lower than the Thrift Savings Plan annuity, even though the interest rate used is slightly more favorable and the mortality table used is more favorable. The difference presumably is accounted for in part by the commission received by the MetLife agent in the case of the individually purchased annuity.

Adverse selection has the potential for destroying an annuity market. An unintended consequence of the unisex rulings may be that

401(k) plans rarely provide annuities because men can obtain better annuities in the individual annuities market. Selection problems presumably are a more serious problem for 401(k) plans than for private sector annuity providers because of the unisex requirement. Private providers can reduce selection problems by offering different rates to men and to women.

### **Two Kinds of 401(k) Plans**

Recognizing that 401(k) plans generally are no longer mainly supplementary plans, they should be regulated as primary plans. However, an argument can be made that there should be two types of 401(k) plans as far as regulation is concerned. For 401(k) plans that are the primary or sole plan, they would be classified as 401(k) retirement plans. They would be required to provide an annuity as the default option, and to provide spousal protection in the form of a joint and survivor benefit that can be waived only by the spouse signing and notarizing a document. Other 401(k) plans that are supplementary plans, where a defined benefit plan provides the primary benefits, would continue to be regulated as savings plans.

This approach favors extending the requirements applied to defined benefit plans to 401(k) plans. This would mean that 401(k) plans provide annuities as the default option, requiring a spousal waiver if not chosen. That requirement would apply at least for those plans that are the primary or sole pension plan the employer provides. Arguments in favor of this approach include that 401(k) plans now play the role that once was played by defined benefit plans. Also, as a matter of leveling the playing field between 401(k) plans and defined benefit plans, the same requirements should apply uniformly to both. Both the United Kingdom and Ireland require that defined contribution plans provide annuitized benefits.

A different approach would be to require that 401(k) retirement plans offer annuities as an option but that the annuities not be required to be the default option. However, these plans would also be required to provide standard “advice” recommending that an annuity be chosen for at least part of the account balance because that is the only form of benefit that would assure that participants would not outlive their pension savings.

**Mandatory versus voluntary annuitization.** Some degree of mandatory annuitization may be desirable to assure that workers will not outlive their retirement savings. Mandatory annuity purchases reduce annuity prices by expanding the market to cover individuals regardless of health and life expectancy. Also, mandatory annuities would be less expensive to administer, with greater economies of scale and reduced enrollment costs. However, mandating annuities forces some people to buy them who would be better off not doing so.

Full mandatory annuitization may not be desirable. Full mandatory annuitization restricts the access of participants to their accumulated funds, and for this reason may weaken the argument that defined contribution plans foster an “ownership society.” Full annuitization reduces flexibility in meeting unplanned expenses. Instead, a mandate could require that only part of the account balance be annuitized. An alternative policy innovation would be to charge an exit fee when lump sum benefits are taken, and use that fee to subsidize annuities.

Annuitization is a prerequisite to providing survivors’ benefits. Thus, the requirement for annuitization is related to providing survivors’ protection for widows. Annuitization could be required to be jointly decided by husbands and wives. For example, annuitization could be the default, with other forms of benefit receipt only being allowed if the spouse signs an agreement permitting that.

Perhaps in part because of the interest rate risk associated with converting an account balance to an annuity, many countries with mandatory defined contribution plans do not require that workers annuitize account balances. Seven countries with mandatory defined contribution systems in Latin America allow their workers to choose between an annuity and phased withdrawals throughout retirement, while two countries mandate annuity purchases (Kritzer 2000). Countries that do not mandate annuitization generally mandate that benefits be withdrawn periodically through phased withdrawals.

In Sweden, where the mandatory defined contribution plan is a relatively small part of the mandatory benefits (financed by a 2.5 percent tax rate, out of a total social security tax rate of 18.5 percent), workers must either fully annuitize their account balances or take the benefits as a phased withdrawal. Chile does not require workers to annuitize their account balances, but workers not annuitizing must take their benefits

as a phased withdrawal. British workers until 2006 were required to annuitize their account balances by age 75. That requirement has been dropped for those claiming a religious exemption.

**Default options.** Behavioral finance has suggested that making automatic enrollment the default option can greatly increase the percentage of workers who participate in pensions. However, because of the financial importance of the decision and its irreversibility, if annuities were the default, considerably more people might opt out of the default than has been the case with automatic enrollment. Experience with cash balance plans has indicated that making an annuity the default for receiving a benefit defined as an account balance may have little effect.

**Participant education.** Participant education is one method for encouraging participants to annuitize. Employees may need to be educated as to the advantages of guaranteed lifetime income, which annuities provide. The U.S. Department of Labor (2005b) has commented that plan communications tend to focus on the accumulation phase rather than on the payout phase. It recommended that the Department of Labor provide guidance as to what constitutes education, as opposed to advice, in providing information concerning benefit options. Such guidance would alleviate concerns that employers have over their fiduciary liability in providing such information to their participants.

Participant education may need to include information about life expectancy. Information concerning life expectancy is the most common way that information about mortality risk is provided. However, approximately half the population will outlive its life expectancy, so information about life expectancy sets a low standard in terms of the number of years that a person should be prepared to finance. It may be more useful in helping participants understand the risks they face to provide information on the probability they will live to age 90, and the higher probability that at least one member of a couple will live to age 90.

Participants are accustomed to thinking of 401(k) plans in terms of their account balance. More participants might annuitize if they think of their 401(k) plans in terms of the amount of annuitized income the

account could provide. Thus, it might be desirable for account statements to provide information as to the amount of annuitized income the account would provide if it were annuitized at a fixed age, such as 62. Also providing that information for age 65 would help educate people as to the advantages of postponing retirement.

Participant education is often provided by the institution managing the investments of the participants' accounts. Those institutions generally have a conflict of interest with respect to providing information about annuities. Because they typically do not sell annuities, their income will be greater if participants continue to maintain an account balance rather than purchase an annuity.

**Tax incentives.** Tax incentives can be used to encourage the choice of annuities by workers. That can occur either by providing more favorable tax treatment to annuities or a less favorable tax treatment to other forms of payment. In 2006, Spain reduced the generosity of the tax treatment of lump sum benefits to encourage workers to purchase annuities (Social Security Administration 2007). To encourage annuitization, the first \$10,000 of annual income from an annuity could be exempt from taxation. This proposal, however, would disadvantage defined benefit plans, unless the exemption was also extended to the first \$10,000 of benefits received from a defined benefit plan. In that case, the loss of tax revenue would become more of an issue.

Chile, Sweden, and the United Kingdom all do not encourage annuitization. Annuitization could be encouraged by favorable tax treatment, but none of those countries have adopted such a policy. Annuitization could be encouraged by providing preferential tax treatment for annuities, with maximum limits on the level of benefits that would receive preferential treatment to assure some targeting of the tax benefit to lower- and middle-income recipients. However, tax incentives may have relatively little effect on the choices that pension participants make, given what appears to be a fairly strong preference to take lump sum payments.

## **ANNUITY OPTIONS**

A number of options have been developed for annuities in an attempt to make them more appealing by providing pension participants greater range of choice.

### **Phased or Partial Annuitization or Deferred Annuitization**

Phased annuitization offers workers the option of annuitizing their account balance in stages over time. This option facilitates phased retirement by allowing for receipt of partial benefits. Phased or partial annuitization facilitates part-time work with a part-time pension and thus may be a favorable option, particularly for women, because it provides greater flexibility for mixing paid work and family responsibilities. It also is a way of attempting to deal with the interest rate and financial market risk associated with the timing of annuitization.

Sweden and the United Kingdom allow phased or partial annuitization in their individual account systems, while Chile does not. Swedish workers can phase in their annuitization over time, initially annuitizing only a quarter, then a half, and then three-quarters of their account balance, if they wish. Once they have claimed benefits, they can suspend payment or change the percentage of a full payment they receive. Chilean workers may defer annuitization by first receiving benefits as a phased withdrawal and then later annuitize the remainder of their account balance.

### **Fixed or Variable Annuities**

Annuities can provide fixed nominal or fixed real payments, or the payments can vary over time. Among annuities that vary over time, annuities that vary depending on the investment performance of the underlying assets are called variable annuities. Variable annuities offer both the advantages of annuities and the advantages of investments in equities, as well as the risks of investments in equities. Also, frequently insurance companies provide escalating annuities, where the payment increases by a fixed percentage amount each year. With this type of annuity, retirees can attempt to obtain an annuity that mimics an indexed

annuity in that it increases over time, though it is not tied to increases in the price level.

Equity-indexed annuities have characteristics of both fixed and variable annuities. Their return varies more than a fixed annuity but not as much as a variable annuity. They combine a minimum guaranteed interest rate with a variable rate that is tied to a market index. The guarantee is backed by the insurance company marketing the product, and is thus only as secure as the insurance company.

When a Swedish participant chooses a fixed annuity, Sweden guarantees a fixed monthly payment for life. The monthly amount may be increased by a bonus, however, depending on the investment experience. When a worker chooses a phased withdrawal, the benefit may vary since the worker's benefit will be affected by the value of the underlying funds. When a worker chooses a phased withdrawal, the funds remain invested with the mutual funds the worker has chosen.

Chilean workers may take their benefit as a price-indexed annuity or as a phased withdrawal, or as a combination of the two. British workers choosing annuities must take price-indexed annuities, but they have the option of a phased withdrawal. Phased withdrawal does not provide longevity insurance, and for this reason it may not be a good option for many workers, especially women.

### **Benefits for Other Persons**

As well as providing benefits to the retired workers who earned them, annuities may pay benefits to other related persons, notably spouses. Doing so, however, generally reduces the benefits received by the retired worker because the extra benefits must be financed out of the account balance.

Providing survivors' benefits for a spouse or domestic partner generally would reduce the benefits paid while both persons were alive by 8 to 20 percent, depending on the ages of the two people (American Academy of Actuaries 2001). Spousal benefits, benefits for divorced spouses, survivors' benefits, and bequeathable benefits are of particular value to women because women are more likely to be economically dependent on their spouses than are men.



**Spousal benefits.** Spousal benefits are received by the spouse while the retired worker who earned them is still alive. In Sweden, workers can advance-fund retirement income for their spouse by having their contributions deposited into their spouse's account instead of their own. The Chilean and British defined contribution plans do not provide spousal benefits. Dependent spouses must rely on the benefits of their working spouse while that person is alive.

**Benefits for divorced spouses.** Providing benefits for a divorced spouse from a defined contribution plan is particularly difficult if the worker has remarried and has a current spouse. Any benefits provided to the divorced spouse would reduce the benefits received by the worker and current spouse.

British workers can negotiate rights to pension benefits in divorce settlements. In Chile and Sweden, divorced spouses have no rights to pension benefits of their former spouses. While current spouses, same-sex partners, and dependent children are eligible for survivors' benefits if the participant elects to provide them, divorced spouses are not eligible for survivors' benefits. If a spouse is named as a beneficiary and a divorce subsequently occurs, the divorced spouse loses the right to the future survivors' benefits.

**Survivors' benefits.** Because workers are not required to annuitize their 401(k) accounts, women whose spouses participate in 401(k) plans are generally denied the form of insurance that an annuity received as a survivor provides.

Survivors' benefits can be a mandated part of a defined contribution system, or they can be provided as an option. In defined contribution systems, providing survivors' benefits results in lower benefits to the couple while both are alive. In voluntary defined contribution systems, participants generally have a choice of level of survivors' benefits—100 percent, 75 percent, 66.7 percent, or 50 percent are common options, though participants generally would not have all those options. An issue when providing survivors' benefits is what happens to the benefit of the participant if the dependent spouse dies first. The participant's benefit could be left unchanged, it could be decreased because there would be only one person for it to support, or it could be increased because there is no longer the need to provide survivors' benefits.

The United Kingdom is the only country of the four (United States, United Kingdom, Sweden, Chile) that requires all married participants in defined contribution plans to provide survivors' benefits. It requires a married participant to provide survivors' benefits equal to 50 percent of the benefits received by the participant.

**Bequeathable benefits.** Bequeathable benefits take the form of a lump sum payment made to a surviving spouse or other surviving family member or unrelated person at the death of a pension participant. Defined contribution systems may distinguish between deaths that occur before the worker has started receiving retirement benefits and deaths that occur while the worker is receiving benefits.

In the United States, the possibility of accumulating bequeathable wealth through defined contribution systems is considered to be a desirable feature by some people. This possibility allows workers to accumulate wealth that they might bequeath to their heirs, but the trade-off is that annuitized benefits are reduced below what they otherwise would be. Bequeathable benefits generally result when a defined contribution has not been annuitized, and they are eliminated when an account has been annuitized.

If workers die before having annuitized their account balances, the Swedish pension system does not allow the bequest of their account balances. That amount is redistributed among all the participants in the system. When Chilean or British workers die, their account balances are bequeathable to their survivors. If they die during retirement and they have not annuitized their account balances, the remaining account balances are also bequeathable.

## INCOME REDISTRIBUTION

When defined contribution plans annuitize benefits without taking into account the longer life expectancy associated with higher income, they redistribute income toward upper-income workers. The use of unisex life tables also causes income redistribution within the system, though the pattern of redistribution is also affected by whether partici-

pants choose survivors' benefits for their spouses. Since women and higher-wage workers have on average longer life expectancies than men and lower-wage workers, the system redistributes money in a complex way from men to women and from lower-wage to higher-wage workers. Thus, the criticism by some policy analysts that traditional defined benefit social security programs redistribute income in complex ways (World Bank 1994) also applies—and to some extent for the same reasons—to defined contribution plans that mandate annuitization.

Most of the mandatory defined contribution systems allow workers to avoid the regressive effects of annuitization by taking a phased withdrawal of benefits. Providing this option, however, increases the problem of adverse selection in the annuity market. Adverse selection occurs when long-lived people are more likely to choose an annuity than short-lived people but both receive the same annual benefits for a given account balance.

Because people who expect to be long-lived are more likely to purchase annuities than people who expect to be short-lived, insurers price annuities on the assumption that their purchasers are long-lived. While these prices may be actuarially fair for upper-income workers with long life expectancies, the high price keeps low-income workers out of the annuity market and deprives them of the insurance protection traditional social insurance plans provide against the risk of outliving one's resources. Not requiring annuitization, however, allows low-income workers who die relatively young to bequeath some of their retirement income to their survivors.

An option that has received little consideration for dealing with adverse selection that arises with voluntary annuitization is to levy a charge on persons not annuitizing that offsets the effects of adverse selection. The charge amount would be contributed to the financing of annuities, allowing annuities to be priced as if there were no adverse selection.

Insurance companies in Chile, but not in most countries with mandatory defined contribution plans, use individual characteristics, including income and gender, in determining the level of annuity benefits an account balance provides. Calculating annuities this way limits the regressive income transfers due to annuitization, but at the cost of

lower retirement benefits for women than would be the case if unisex life tables were used to calculate annuitized benefits.

Income redistribution can also occur through the way the annuity provider charges fees. The transaction costs to the annuity provider associated with an individual worker purchasing an annuity are largely fixed costs. These costs do not depend on the size of the account balance being annuitized. Thus, these costs have a regressive effect when charged to the individual. They form a larger percentage of small account balances than of big ones, and small account balances tend to be held by people with lower incomes. Vittas and Iglesias (1992) find that annuity charges in Chile are a source of inequality in benefits, as larger commissions relative to annuity payments are often charged to lower-income workers.

## **MARKET INNOVATIONS: LONGEVITY INSURANCE, LADDERING, AND FRAMING**

### **Longevity Insurance**

Much of the utility value of annuitization comes from insuring against the possibility of running out of money if one lives to be older than expected (Brown 2001). An annuity can be used to purchase longevity insurance, while allowing workers control over part of their money. If a worker purchases an annuity with an adequate benefit and a start date that is deferred to age 85, the worker—if he or she lives that long—only needs to manage the spend-down of assets over a fixed period, from retirement to age 85. This strategy greatly reduces mortality risk, while also facilitating the management of the spend-down of assets. The person no longer needs to manage the spend-down of assets over an uncertain period.

Pension-plan tax qualification rules may make it difficult for workers to purchase longevity insurance with start dates at advanced ages. The problem arises with the requirement that minimum distributions from a 401(k) plan start by April 1 of the year following the year the person turns age 70 ½. Changes in these minimum required distribu-

tion rules might be considered to encourage the purchase of longevity insurance. Even with such changes, however, it is likely that few people would purchase longevity insurance. People are reluctant to purchase annuities that begin payment immediately. They presumably would be even more reluctant to purchase an annuity that began payment at age 85. With longevity insurance, people have better protection against outliving their resources and ending life in poverty, but the trade-off is that they have less money to spend earlier in life.

### **Laddering**

Another innovation is laddering the purchase of annuities. This process occurs when annuities are purchased in small amounts over time. Doing so reduces the risk related to interest rates. Participants may be more willing to purchase annuities if they do so in small amounts. The purchasing of annuities could be done in the context of a target date retirement plan, where the individual's portfolio becomes more conservative as the individual's retirement target date approaches. Usually this change is done by increasing the share of the portfolio held in bonds. An alternative approach would be to gradually purchase annuities. Participants may be more willing to have annuities in their portfolio if they are purchased by the employer with the employer's contribution. This process could start later in life, for example at age 50.

### **Framing**

An alternative approach to encouraging annuitization would be to require that 401(k) plans report at least once a year to participants the amount of the annuity they would receive at current interest rates if taken at age 62. That approach would encourage employees to think in terms of taking their benefit as an annuity.

## **CONCLUSION**

Several aspects of government policy that were designed to strengthen the protection of workers may have had the unintended ef-

fect of discouraging employers from providing annuities. First, the unisex rulings of the Supreme Court that require 401(k) plans to provide unisex annuities may have discouraged employers from providing annuities because often men are able to obtain annuities on more favorable terms by purchasing them individually outside the 401(k) plan. Second, the requirement of a joint and survivor option may have increased the complexity of administering annuities.

A basic policy decision is the extent to which participants will be free to choose from a wide range of options. A wide range of options allows participants the opportunity to structure the receipt of benefits in the way that they prefer. However, in some cases, public policy goals may take overriding importance. For example, should husbands be free to decide whether to provide survivors' benefits for their wives, or should public policy require that those benefits be provided?

### **Note**

1. This chapter draws on Iwry and Turner (2008).

