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Alternate Measures of Replacement Rates for Social Security Benefits and Retirement Income

by Andrew G. Biggs and Glenn R. Springstead

Andrew G. Biggs is with the American Enterprise Institute and is a former Deputy Commissioner of the Social Security Administration (SSA). Glenn R. Springstead is with the Office of Retirement and Disability Policy, SSA.

Summary

Discussions of retirement planning and Social Security policy often focus on replacement rates, which represent retirement income or Social Security benefits relative to preretirement earnings. Replacement rates are a rule of thumb designed to simplify the process of smoothing consumption over individuals' lifetimes. Despite their widespread use, however, there is no common means of measuring replacement rates. Various measures of preretirement earnings mean that the denominators used in replacement rate calculations are often inconsistent and can lead to confusion.

Whether a given replacement rate represents an adequate retirement income depends on whether the denominator in the replacement rate calculation is an appropriate measure of preretirement earnings. This article illustrates replacement rates using four measures of preretirement earnings: final earnings; the constant income payable from the present value (PV) of lifetime earnings (PV payment); the wage-indexed average of all earnings prior to claiming Social Security benefits; and the inflation-adjusted average of all earnings prior to claiming Social Security benefits (consumer price index (CPI) average).

The article then measures replacement rates against a sample of the Social Secu- rity beneficiary population using the Social Security Administration's Modeling Income in the Near Term (MINT) microsimulation model. Replacement rates are shown based on Social Security benefits alone, to indicate the adequacy of the current benefit structure, as well as on total retirement income including defined benefit pensions and financial assets, to indicate total preparedness for retirement.

The results show that replacement rates can vary considerably based on the definition of preretirement earnings used and whether replacement rates are measured on an indi- vidual or a shared basis. For current new retirees, replacement rates based on all sources of retirement income seem strong by most measures and are projected to remain so as these individuals age. For new retirees in 2040, replacement rates are projected to be lower, though still adequate on average based on most common benchmarks.

Introduction

Individuals and policymakers both rely on the concept of replacement rates, which express retirement income as a percentage of preretire- ment earnings. Individuals use replacement rates as a rule of thumb in retirement planning. Policymakers use various replacement rate measures to analyze Social Security benefit adequacy under the current benefit schedule

versus those that might be provided under alternate policies.

However, confusion exists regarding the use of replacement rates. Specifically, while the numerator in the replacement rate equation is easy to isolate—either total retirement income in the case of retirement planning or periodic Social Security payments in the case of policy discussions—there is no consensus on the proper way to measure preretirement earnings.

As a result, personal planning and policy discussions often mix different measures of preretirement earnings, which can lead to false conclusions about current or potential replacement rates (Steuerle, Spiro, and Carasso 2000). Specifically, it is commonly accepted that a replacement rate of roughly 70 percent is adequate for retirement income from all sources, and Social Security benefits typically account for a replacement rate of roughly 40 percent. However, the 70 percent replacement rate recommended by many financial advisors is generally measured relative to earnings *immediately preceding retirement*, but Social Security replacement rates are measured relative to a *wage-indexed average of lifetime earnings*. It is risky to draw conclusions based on replacement rates calculated using different denominators. To help clarify measures of replacement rates this article presents four alternative measures of preretirement earnings:

- *Final earnings:* the average of real earnings in the 5 years prior to claiming Social Security benefits.

- *Present value (PV) payment:* a constant real payment spanning working years derived from the present value of lifetime earnings. The PV is the value, on a given date, of a past or future series of payments.

- *Wage-indexed average earnings:* a wage-indexed average of all earnings prior to claiming Social Security benefits, similar to the average indexed monthly earnings (AIME) used in calculating Social Security benefits.

- *Real average earnings (consumer price index (CPI) average):* the inflation-adjusted average of all earnings prior to claiming Social Security benefits.

All measures are then analyzed using the Social Security Administration's (SSA's) Modeling Income in the Near Term (MINT) microsimulation model. Replacement rates are measured only on a pretax basis, as MINT does not model income taxes.

Replacement rates are calculated for Social Security beneficiaries aged 64–66 in the year 2005. Rates are calculated separately for Social Security benefits alone and for total retirement income, which includes Social Security benefits, employer sponsored pensions, personal savings, and other sources. These calculations are repeated for the same birth cohort in the year 2020 to show the succession of replacement rates over the course of retirement and for beneficiaries aged 64–66 in 2040 to show projected replacement rates for future retirees.

This article

- provides background on replacement rate measurements, proposes alternative denominators for the replacement rate calculation, discusses recommended replacement rates for total retirement income, and examines how retirement ages and Social Security spousal benefits can affect replacement rates;

- analyzes individual and shared Social Security replacement rates for new Social Security beneficiaries using SSA's MINT model;

- analyzes replacement rates based on total retirement income;

- discusses how replacement rates may change over the course of retirement;

- analyzes projected replacement rates for new Social Security beneficiaries in the year 2040; and

- reviews and concludes.

Background on Replacement Rates

Retirement income adequacy is a relative measure. No single dollar amount is correct for every retired individual or couple at every time; rather, households are best served with different real retirement income levels, balancing income in retirement with consumption patterns established during working years. Individuals planning for retirement and government pension programs both use the replacement of a portion of preretirement earnings, rather than a simple dollar amount, to project retirement income needs. This portion, or percentage, is called a replacement rate. The formula for computing Social Security retirement benefits replaces prior income progressively, such that lower earners generally receive a higher replacement rate than do higher earners.

Replacement rates express retirement income as a percentage of preretirement earnings, where retirement income is the numerator and preretirement earnings

are the denominator. The numerator can signify either total retirement income or a selected component, such as the Social Security benefit. Preretirement earnings are also subject to alternative definitions, further discussed below. Replacement rates are used both for individual financial planning and for policy analysis.

A replacement rate of less than 100 percent of preretirement earnings may be enough to maintain the preretirement standard of living, as the cost of living can decline significantly in the transition from work to retirement. For instance, retirees pay lower taxes because there is an advantageous tax treatment of Social Security benefits; the need to save for retirement is reduced or eliminated; work-related expenses such as clothing, commuting, or meals outside the home decline; mortgages are often fully paid off; and children have completed college and left the home (Schieber 1998). However, new costs can arise in retirement, particularly costs associated with health care. Rising Medicare premiums and out-of-pocket health care costs can introduce considerable uncertainty regarding optimal replacement rates for future retirees (Caplan and Brangan 2004; Skinner 2007).

Defining the Denominator

Even though the numerator of the replacement rate calculation is relatively easy to determine, there is no consensus on the proper denominator to represent preretirement earnings. Multiple measures of preretirement earnings have been used to calculate replacement rates, with potentially confusing results. Consider the following statement, which summarizes conventional wisdom on replacement rates and Social Security benefits:

> While Social Security replaces about 40 percent of the average worker's pre-retirement earnings, most financial advisors say that you will need 70 percent or more of pre-retirement earnings to live comfortably. (SSA 2008, 7)

This view of recommended retirement income, and the amount typically supplied by Social Security, is widely shared. This conclusion is not troubling, in that Social Security was not designed to be the sole source of retirement income.

The difficulty with this statement is that the 70 percent replacement rate recommended by financial advisors is measured relative to final earnings, while the 40 percent Social Security replacement rate is measured relative to the AIME. That is to say, the two

replacement rate figures use different denominators, and as a result, cannot be directly compared.[1]

Moreover, it is not clear whether final earnings or the AIME is the best denominator to use in calculating replacement rates. To avoid confusion and to find the best possible measures for replacement rates, it is helpful to consider the merits of the alternative measures of preretirement earnings that can be used in replacement rate calculations, and for such calculations to be clear on which measure is used.

Final Earnings. In most cases, replacement rates are measured relative to final earnings, meaning earnings in the year or years immediately preceding retirement. As the Government Accountability Office (2001, 2003) notes, "Generally, [the replacement rate] is calculated as the ratio of retirement income in the first year of retirement to household income in the year immediately preceding retirement." The Greenspan Commission of the early 1980s also defined replacement rates on the basis of earnings immediately preceding retirement (National Commission on Social Security Reform 1983),[2] and for many years, replacement rates printed in the annual Social Security Trustees Report were measured relative to final earnings.

There are several advantages to measuring replacement rates relative to final earnings. First, the use of final earnings is a relatively easy rule of thumb for individuals and financial planners to follow, especially for individuals who can easily predict how their earnings will trend.[3] Second, many defined benefit pension plans are calculated on a final salary basis. Third, a final wage replacement rate indicates the degree to which an individual's consumption possibilities may change as he or she retires from work. Thus, final earnings replacement rates can be useful in projecting retirement behavior, in which individuals who are employed but eligible for retirement benefits can choose between the earnings they receive at work and the benefits they could receive by retiring.[4]

Final earnings are the measure most often used as the denominator to calculate replacement rates. However, they are an imperfect measure in several respects. First, final earnings are particularly volatile. In addition to normal periods of unemployment, many individuals reduce their work hours or leave the labor force entirely prior to claiming Social Security benefits. To smooth the volatility of earnings in a single year some studies use an average of a number of years prior to retirement; Grad (1990), for instance, averages earnings over the 5 years prior to claiming benefits.

While not perfect, this approach is superior to relying on a single year of earnings to calculate replacement rates, and is used in this article.

Second, final earnings are not necessarily representative of the worker's lifetime earnings, which better reflect total consumption possibilities. Although annual earnings can vary considerably from year to year, the life cycle/permanent income hypothesis used by economists holds that individuals seek to smooth consumption evenly between years (Modigliani and Brumberg 1954; Ando and Modigliani 1963; Friedman 1957). Thus, a retired worker's earnings immediately prior to retirement may not be representative of his or her consumption at that time, even if it is preretirement consumption rather than earnings that retirement income seeks to replace. However, final earnings may be a useful denominator for very low earners without the means to borrow or invest to smooth consumption over the life cycle. In such cases, consumption roughly equals earnings and therefore final earnings may be the appropriate value to use in replacement rate calculations.

Present Value (PV) Payment. The premise of a life cycle approach to measuring preretirement income is that, rather than feast or famine, individuals will seek to consume roughly the same amount in each period of life. More precisely, in each period individuals will consume an amount equal to a steady payment based on the present value (PV) of their lifetime earnings.[5]

For this reason, we calculate a measure we term PV payment. It is equal to a steady, inflation-adjusted payment running from age 21 through the age of retirement, derived from the present value of the individual's earnings during those years. While not fully consistent with the life cycle approach, which would smooth earnings over the individual's entire adult life, including retirement, PV payment allows for replacement rate calculations that are methodologically comparable to other standard approaches.

PV payment is calculated as follows:

$$PVpayment = \frac{PVr(1+r)^n}{(1+r)^n - 1}$$

where *PV* equals the present value of lifetime earnings discounted at the interest rate earned by the Social Security trust funds, *r* equals the real annual interest rate,[6] and *n* equals the number of years between entering the labor force and claiming benefits.

To illustrate, assuming a 3 percent real interest rate, a medium-wage worker entering the workforce in 2006 at age 21 and retiring at age 63 would have lifetime earnings with a present value of approximately $1 million.[7] That $1 million would provide a constant annual payment of roughly $42,200 (in 2006 dollars) for each year of retirement. Out of this $1 million would come taxes, retirement savings, and employment costs; consequently, true consumption would be lower. For that reason, a replacement rate of less than 100 percent would be adequate to smooth consumption in retirement. Moreover, recommended replacement rates would vary based on tax liabilities and other costs, so it is difficult to construct a single rule that could be applied across the board. Nevertheless, PV payment provides a more thorough evaluation of lifetime earnings than the other three measures.

Wage-Indexed Average Earnings. SSA does not currently calculate replacement rates relative to final earnings. As reported in the Performance and Accountability Report, SSA (2004) defines replacement rates as "the ratio of the retired worker's benefit based on his or her own earnings to his or her own average indexed monthly earnings." In calculating the average indexed monthly earnings, or AIME, past earnings are first wage-indexed to age 60.[8] That is, earnings in a past year are multiplied by the ratio of economy-wide average earnings at age 60 to average earnings in the year in which the earnings took place. For example, if a worker retiring at age 62 in 2006 earned the average wage of $5,472 in 1968, those wages would be indexed to $35,010, the average wage in 2004 (when the beneficiary turned 60).[9] From these wage-indexed earnings years, the highest 35 are averaged and then the earnings are expressed as a monthly figure.

In recent years, SSA has reported replacement rates relative to the AIME using two approaches: actual work histories and stylized workers with varying earnings levels. Replacement rates based on stylized workers appear in the annual Trustees Report. Stylized workers with low, medium, and high earnings retiring at age 65 in 2006 had replacement rates of 56 percent, 41 percent, and 35 percent respectively, as reported in the 2006 Trustees Report.[10] Replacement rates based on actual work histories appeared most recently in SSA's 2004 Performance and Accountability Report (PAR) and are calculated using the 1 percent Continuous Work History Sample of Social Security earnings and benefits records. These replacement rates are calculated for individuals who become entitled to benefits based on their own earnings records. Only

the individuals' earned benefits are included in these calculations; auxiliary benefits are omitted. Based on the latest published data, in 2003 the median replacement rate was 41 percent, which is close to the rate for the stylized medium earner. Rates varied by sex, with men receiving median replacement rates of 36 percent and women receiving replacement rates of 50 percent (SSA 2004, 128).

Measuring replacement rates relative to the AIME has the merit of using a statistic that SSA already calculates. In addition, it includes a greater portion of lifetime earnings than the final earnings measure. An AIME denominator also has the advantage of continuity with past SSA figures.[11]

However, the AIME as a denominator has several shortcomings. First, it includes only the 35 highest years of earnings. This high-35 restriction increases its value relative to a full measure of lifetime income and thereby reduces replacement rates measured against it. Therefore, we base our modified AIME measure, what we will call a wage-indexed average, on all earnings prior to claiming Social Security benefits. In further contrast to the statutory AIME calculated by SSA, we compute the wage-indexed-average earnings for all Social Security beneficiaries in our sample. Because the other measures in this article are not dependent on each beneficiary being eligible for a Social Security retirement benefit based on their own work record, this helps ensure our wage-indexed average can be compared with alternative replacement rate calculations.

However, even with these modifications, a wage-indexed average will still raise other issues, namely that it overstates real earnings level in past years. Imagine an individual who earned the average wage in every year of his life. Assuming he retired at 65, his wage-indexed average would be higher in real terms than all but 4 years of earnings throughout his lifetime. Thus, a wage-indexed average of an individual's lifetime earnings may not be representative of the consumption possibilities open to that individual. Boskin and Shoven (1987) argue that wage-indexed averages "greatly overstate the average absolute real level of earnings; [wage-indexed] career average replacement rates have a relative income component embedded in them."

Although the life cycle approach does not argue for replacing a wage-indexed average of prior earnings, alternate economic theories are more sympathetic to wage-indexed measures. A relative income approach, such as that described by Duesenberry (1949), argues that individual consumption is a function of current income and past peak income. In effect, individuals wish for their consumption to keep up with increases throughout the population, producing consumption rising roughly along with wages. While the relative income approach was overtaken by the life cycle/permanent income hypothesis in the 1950s, some economists argue that it better describes consumption patterns in practice (Frank 2002, 2005).

Likewise, the "buffer-stock" theory of saving, in which younger individuals consume less than the life cycle hypothesis predicts to buffer against uncertain future income, may argue for a wage-indexed denominator. The buffer-stock theory predicts consumption patterns that more closely resemble those when individuals wish to smooth the wage-indexed average of lifetime earnings.[12] This approach might particularly apply to low earners, who when young are often unable to borrow against future earnings.

Nevertheless, the wage-indexed average calculation is complex and poorly understood by the public and, as noted above, lacks a compelling rationale under the dominant life cycle/permanent income economic theory. Thus the wage-indexed average may not be ideal for individual retirement planning.

Real Average Earnings (CPI Average). The fourth measure is the inflation-adjusted average of lifetime earnings. Boskin and Shoven (1987) and Rettenmaier and Saving (2006) advocate the CPI-indexed average of lifetime earnings. CPI-indexed average earnings avoid many of the problems of final earnings and wage-indexed earnings. Relative to the AIME and to final earnings, the inflation-indexed average of lifetime earnings may better capture the real level of resources available for consumption over a worker's lifetime.[13] In addition, real earnings levels are more easily understood by ordinary individuals than are wage-indexed earnings. As such, they are perhaps better suited for computing and conveying replacement rates. Note, though, that the CPI average of lifetime earnings fails to account for the *timing* of earnings over a worker's lifetime. A worker whose earnings peaked early in life would have higher consumption possibilities than a worker with the same real lifetime earnings whose earnings peaked later in life. The former worker could invest a portion of his early wages, earning interest, to provide higher consumption later. The PV payment measure better accounts for the timing of earnings over an individual's lifetime.

Other Factors Affecting Replacement Rates

The inclusion of microsample results from the MINT model requires the discussion of additional factors that can affect realized replacement rates. The MINT model matches Social Security earnings records to data from the Survey of Income and Program Participation (SIPP). The richness of the MINT data set, relative to calculations using stylized workers, requires that additional life factors be put into context. In particular, MINT takes realistic account of marriage patterns and retirement ages, variables that are relevant to auxiliary benefits and changes to benefits. Both auxiliary benefits and early retirement will alter reported replacement rates when measured against an actual population versus stylized work histories.

The replacement rates reported in the Social Security Trustees Report and used in other discussions generally refer to single individuals who retire at age 65. While such a stylized example is easy to understand, in many cases these examples would not accurately reflect the lifetime earnings or condition of a typical Social Security–covered worker in retirement.

Most Americans are married at the time of retirement. Social Security can offer spousal benefits to these couples, as well as to divorced spouses whose marriages lasted at least 10 years. A spouse generally receives benefits based either on his or her own earnings, or on half the benefit payable to his or her spouse, whichever is higher.[14] For a single-earner couple, total benefits—and thus, total replacement rates—could be up to 50 percent higher than those based on individual earnings alone. For most couples the impact of spousal benefits is significantly smaller, as the lesser-earning spouse is entitled to some benefits under his or her own earnings, and the net effect of spousal benefits is merely the difference between the two. Moreover, differences in earnings between spouses are expected to diminish over time, reducing the effect of spousal benefit payments. Nevertheless, a large proportion of the population is eligible for spousal benefits, and such benefits could have a significant positive effect on their replacement rates.[15]

In addition, Social Security offers benefits to survivors. A surviving spouse is generally entitled to the greater of either his or her own earned benefit or the deceased spouse's benefit. This can increase measured replacement rates relative to an individual's preretirement earnings if his or her beneficiary status changes upon the death of a spouse.

While spousal benefits will raise replacement rates, early retirement will lower them, because Social Security benefits are reduced for individuals who claim benefits prior to the full retirement age.[16] As shown below, in 2005 the majority of individuals claimed Social Security benefits prior to the full retirement age, and thus were subject to benefit reductions:

Age at first benefit claim	Percent of claimants
62	56.6
63	8.3
64	9.9
65	19.8
66	1.5
67	0.8
68	0.6
69	0.5
70 or older	2.1

SOURCE: Authors' calculations based on SSA (2006, Table 6.A4).

Although claiming benefits early does not necessarily lower total lifetime benefits, doing so reduces replacement rates. However, lower replacement rates for early retirees do not unambiguously denote a less adequate retirement income. A life cycle approach suggests that individuals spending a greater share of their lives in retirement, either by retiring earlier or living longer, should desire a lower replacement rate. Longer retirements demand a higher saving rate, and thus a lower level of consumption, while working. To match the working-age level of consumption in retirement, the replacement rate should decline relative to gross preretirement earnings (Schieber 1998).

Recommended Replacement Rates for Total Retirement Income

As noted above, a common rule of thumb is that total retirement income—Social Security plus pensions, asset income, and other sources—should replace about 70 percent of preretirement earnings. Financial advisors' recommendations of a 70 percent replacement rate are generally measured against final earnings. However, there is no single authoritative source for 70 percent as the appropriate replacement rate, and indeed recommendations can be higher or lower. Rather, 70 percent appears to be a rough consensus among financial planners and others. Greninger and others (2000) report that four-fifths of financial plan-

ners and educators accepted that a replacement rate of 70 percent to 89 percent of previous earnings was appropriate, with mean and median recommendations of 74 percent and 75 percent respectively. A number of other analyses produce similar recommendations. According to the Teachers Insurance and Annuity Association—College Retirement Equities Fund (TIAA-CREF 2002), "The desired replacement ratio is usually an income equal to 60 percent to 90 percent of an individual's salary during his or her last year of work." Aon Consulting and Georgia State University (2004) recommend an average replacement rate of about 75 percent of final earnings, with low earners requiring replacement rates of close to 90 percent. It is worth noting that even in studies that measure rather than suggest replacement rates, final earnings are the most common measure used in calculating the replacement rate (Grad 1990; Boskin and Shoven 1987; Holden and VanDerhei 2002, 2005; Gustman and Steinmeier 1998, 2002; Martin 2004). This divergence of views highlights the importance of clarifying how replacement rates are calculated.

Myers (1993) estimates that a total replacement rate of 70 percent to 75 percent of final earnings would be appropriate for an average wage worker, with recommended replacement rates of 85 percent to 90 percent of final earnings for the lowest earning workers and 55 percent to 60 percent for workers earning the maximum taxable wage.[17]

Based on a similar analysis of preretirement earnings, taxes, and expenses, Schieber (2004) projects that for workers with no retirement plan, a replacement rate of around 70 percent would maintain preretirement living standards for those retiring at age 65, or slightly over 60 percent for those retiring at age 60. McGill and others (2005) extend Schieber's analysis, with similar conclusions.[18]

Some recommendations for replacement rates have been made relative to measures other than final earnings. For instance, the World Bank recommends a household replacement rate of 78 percent of real average lifetime wages net of taxes and preretirement saving, with a recommended government mandatory replacement rate for individuals of 60 percent to 63 percent.[19] Relative to final earnings, the World Bank (1994) recommends a household replacement rate of 54 percent, with a mandatory individual replacement rate of 42 percent to 44 percent.

Although the above recommendations represent a reasonable summary of existing views regarding appropriate replacement rates at retirement, it is worth noting that financial advisors' approaches to setting retirement goals have been criticized by economists. Kotlikoff (2006) in particular argues that the concept of replacement rates is overly simplistic for retirement planning, and that the recommended replacement rates of 60 percent to 80 percent used by financial advisors and online retirement planners are arbitrary.

Social Security Replacement Rates for New Beneficiaries

This section uses SSA's MINT model to measure replacement rates for Social Security beneficiaries aged 64–66 in the year 2005. MINT matches Social Security earnings records with individual responses to the Census Bureau's SIPP to create a large, comprehensive and detailed database of earnings and other demographic information. The matched data are used to project one's future earnings, marital status changes, disability incidence, date of retirement, Social Security benefit, and other retirement income. In this case, when examining individuals aged 64–66 in 2005, individual earnings prior to 2002 are derived from SSA earnings records; only the earnings after 2002 are projected. The MINT version used here is limited in that it omits information on child recipients of Social Security benefits. In addition, MINT does not include a full range of non–payroll tax information. The current version of the MINT model is calibrated to the projections contained in the 2004 Social Security Trustees Report.[20]

Social Security replacement rates presented here are calculated based on Social Security benefits and earnings subject to Social Security taxes. It should be noted at the outset that Social Security was not designed to be the sole source of income in retirement, and thus in most cases should not be expected to meet the replacement rate targets discussed in the prior section. In the following sections, total retirement income replacement rates are shown, which can be more reasonably compared with target replacement rates for retirement income.

Two sets of results will be presented. First, replacement rates under the various metrics will be calculated for individuals based on quintiles of lifetime earnings. Second, replacement rates will be shown on a shared basis for married couples. Shared replacement rates are a better measure of Social Security benefit adequacy as spouses generally share income and costs as a unit. In addition, shared replacement rates eliminate many seeming outliers in which individuals with little or no

earnings receive extraordinarily high replacement rates based on the receipt of spousal benefits.

Replacement Rates Based on Individual Earnings and Benefits

This section details replacement rates for Social Security beneficiaries aged 64–66 in the year 2005. Analysis here is limited to nondisabled beneficiaries with a benefit start age of 62 or older.[21] This group constitutes the great majority of nondisabled beneficiaries. It does, however, omit retirees who do not qualify for Social Security benefits, and so the results should be seen as representative of the beneficiary population and not the retiree population as a whole. The analysis also omits individuals with earnings in noncovered employment such as state/local government, as MINT does not model the Windfall Elimination Provision and Government Pension Offset (WEP/GPO) that often affect such individuals. Auxiliary benefits are included in calculating these replacement rates. The replacement rate measures are the four discussed above: final earnings indicates the inflation-adjusted average of earnings in the 5 years prior to claiming benefits; PV payment represents a steady payment from age 21 to the age of first benefit claim, based on the present value of lifetime earnings; wage-indexed average reflects the AWI-adjusted average of earnings through age 61;[22] and CPI average indicates the inflation-adjusted average of earnings through age 61.

Table 1 highlights the different measures of replacement rates for individuals aged 64–66 in the year 2005. The median replacement rate relative to final earnings is 64 percent, while the median replacement rate relative to PV payment, the steady payment derived from the present value of career earnings, is 46 percent. The replacement rate for the median earner relative to the wage-indexed average earnings is 47 percent, roughly

comparable with other published figures. When measured relative to the CPI-adjusted average of lifetime earnings, replacement rates rise to a median value of 56 percent.

The figures here represent the median replacement rate value for individuals grouped by wage-indexed average earnings quintile. The median replacement rate is used for each quintile rather than the mean replacement rate or the replacement rate of the median earner. The mean replacement rate by earnings quintile would be subject to distortions from outlying values, particularly for the lowest quintile where replacement rates can be extremely high. Likewise, the replacement rate for the median earner would be a single value subject to the individual circumstances of that earner, which may not be representative of the entire earnings quintile. Individuals are sorted by wage-indexed average earnings rather than current income because Social Security benefits are based on lifetime earnings.[23]

As one would expect, individuals with lower lifetime earnings receive significantly higher replacement rates under all measures than higher earning individuals. Measured against final earnings, the median replacement rate for the lowest quintile is infinite, signifying that the median individual in the lowest quintile had no earnings during the 5 years prior to claiming benefits. This should not be unduly surprising, given that low labor force participation is a primary cause of low lifetime earnings. Measured against wage-indexed average earnings, the lowest quintile receives a median replacement rate of 224 percent versus 47 percent for the middle quintile and 34 percent for the highest quintile.

To shed more light on the methods and assumptions used here, these results are compared with individual replacement rates published in SSA's 2004 Performance and Accountability Report (PAR), shown in

Table 1.

Individual median benefit replacement rates by individual lifetime earnings quintile for retired beneficiaries aged 64–66 in 2005 under alternative definitions of preretirement earnings (in percent)

Definition	Lowest	2nd	3rd	4th	Highest
Final earnings	*	82	64	59	40
PV payment	173	63	46	37	34
Wage-indexed average earnings	224	66	47	39	34
CPI average	268	77	56	46	39

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: PV = present value; CPI = Consumer Price Index.

* = infinity.

Table 2.
Individual median benefit replacement rates, by average lifetime earnings quintile, under alternative calculation methodologies (in percent)

Calculation	Lowest	2nd	3rd	4th	Highest
MINT [a]	224	66	47	39	34
Performance and Accountability Report [b]	70	50	40	35	30

SOURCES: Authors' calculations based on Modeling Income in the Near Term (MINT) model; 2004 Social Security Administration Performance and Accountability Report, Table IIA.2.

NOTES: These calculation methodologies use differing measures of average lifetime earnings. Thus, replacement rates based on wage-indexed average earnings (MINT) are shown by wage-indexed average lifetime earnings quintiles, and replacement rates based on the AIME (Performance and Accountability Report) are shown by AIME quintiles.

AIME = average indexed monthly earnings.

a. The MINT replacement rate is the Social Security benefit divided by lifetime wage-indexed average earnings for all nondisabled beneficiaries aged 64–66 in 2005.

b. The Performance and Accountability Report replacement rate is the Social Security benefit divided by the AIME amount for new retirees qualified for benefits based on their own earnings records in 2003.

Table 2. Several differences are immediately apparent. First, the median replacement rate from MINT (47 percent) is slightly higher than in the PAR (40 percent). Second, the replacement rate for the lowest earnings quintile in the MINT measure is several multiples higher, at 224 percent, versus 70 percent in the PAR. The PAR figures and MINT figures use reasonably comparable populations: The PAR measures replacement rates for new beneficiaries in 2003; the MINT figures are for individuals aged 64–66 in 2005. Thus, the differences in results arise from differences in how replacement rates are calculated. These differences are worth highlighting.

First, the replacement rate measure used in this article includes Social Security auxiliary benefits, while the PAR measure excludes them. Auxiliary benefits can play a significant role in retirement income adequacy, and policy changes could increase their role in the future. Thus it makes sense to include auxiliary benefits in this context, raising replacement rates across the board. Second, the MINT replacement rate measure is calculated for all nondisabled beneficiaries, but the PAR measure is calculated only for those who are qualified for benefits based on their own earnings records. Qualification for retirement benefits requires 40 quarters—roughly 10 years—of work in covered employment. This population difference accounts for the extremely high replacement rates for the lowest earnings quintile, which would have very low lifetime earnings entered as the denominator in the replacement rate calculation.

While it is appropriate to include auxiliary benefits and to measure as broad a relevant population as possible, these important measurement differences highlight why caution should be exercised in interpreting any replacement rate figures based solely on individual earnings and benefits, particularly those for very low earners. As noted above, very high replacement rates for the lowest earners often reflect auxiliary benefits paid to spouses, widows, or widowers who had little or no lifetime earnings of their own. For beneficiaries aged 64–66 in 2005, MINT estimates that only 22 percent of those in the lowest lifetime earnings quintile received retirement benefits based entirely on their own earnings records. Nearly two-thirds of this group received spouse-only benefits, meaning they did not have sufficient earnings to be eligible for their own retired worker benefits. Prior to retirement, these individuals likely subsisted on the earnings of a spouse, yet these earnings are not included in replacement rate calculations focusing on individuals. In addition, low-wage workers often pay little or no net taxes and may be eligible for a number of government transfer programs. These transfers could increase their consumption while working and their consequent need for consumption replacement in retirement. Thus, spouses who do not work outside the home and single low-wage workers have the potential to consume 100 percent or more of their earnings prior to retirement, making retirement replacement rate calculations problematic.

Some of these issues cannot be resolved, particularly as the MINT model does not capture the value

of preretirement income taxes and income transfers. However, other issues can effectively be addressed by analyzing replacement rates for a couple, who share income and consumption expenditures, rather than for an individual. For that reason, replacement rates measured on a shared basis are presented below as a more relevant method of judging retirement income adequacy.

Replacement Rates Based on Shared Spousal Earnings and Benefits

In practice, couples tend to share resources, meaning that the burden of payroll taxes and the benefits of Social Security payments fall equally on both members even if their wage earnings are very different. Thus, measuring replacement rates only on an individual level can give a distorted view of the total effects of Social Security.

To account for this, replacement rates are recalculated here on the basis of a married couple's shared resources. The shared resource calculation divides taxes or benefits evenly between spouses for all years in which they are married. It goes beyond a simple examination of workers and spouses in a given year by incorporating the earnings effects of changes in marital status throughout life. Under the shared resources approach, for instance, replacement rates for a widow who did not work outside the home would reflect the earnings her husband contributed while he was alive. Likewise, the shared resources measure can account for multiple marriages and divorces and the benefit entitlements these marriages may produce.[24]

Table 3 shows replacement rates calculated on a shared resource basis for individuals aged 64–66 in 2005. The shared replacement rate compares the individual's shared benefit with the individual's shared preretirement earnings. Note that while members of a couple will generally have the same shared benefit, they may have very different shared lifetime earnings

if they were not married to each other throughout their working years. The median replacement rate for the middle earnings quintile is 69 percent based on final earnings, 42 percent when based on the PV payment, 45 percent based on the wage-indexed average, and 53 percent when based on the CPI average of lifetime earnings.

Shared resource replacement rates decline as lifetime earnings rise, although more slowly than under the individual measure. Median replacement rates for the lowest earnings quintile are significantly lower under the shared resource approach, ranging from 62 percent to 137 percent depending on the denominator used.[25] This reduction in replacement rates occurs because the denominators now include part of the lifetime earnings of current and former spouses. Likewise, replacement rates for the highest earnings quintile increase, as the shared resource measure incorporates the lower earnings and relatively generous benefits paid to the spouses of high earners. In general, the shared resource measure compresses the distribution of replacement rates across earnings levels. Examining replacement rates on a shared resource basis effectively eliminates many of the outliers found in the analysis of rates for individuals.

Replacement Rates Based on Total Retirement Income

In addition to Social Security benefits, the MINT model projects total retirement income. Estimates of total retirement income can be used to assess overall retirement preparedness. In making such calculations, however, somewhat different methods are used from those applied solely to Social Security replacement rates.

First, the numerator of total retirement income used in this analysis includes shared Social Security benefits, defined benefit (DB) pensions, earnings from current employment, income from financial assets,

Table 3.
Median shared benefit replacement rates, by shared lifetime earnings quintile for retired beneficiaries aged 64–66 in 2005 under alternative definitions of preretirement earnings (in percent)

Definition	Lowest	2nd	3rd	4th	Highest
Final earnings	137	77	69	52	42
PV payment	62	47	42	40	36
Wage-indexed average earnings	70	52	45	41	36
CPI average	82	60	53	48	42

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: PV = present value; CPI = consumer price index.

and co-resident income (income from nonspousal household members). Income from financial assets is calculated based on an assumed annuitization of 80 percent of total financial assets.[26] The effects of the Social Security retirement earnings test are modeled where appropriate.[27]

Second, the shared lifetime earnings denominator for each of the four replacement rate measures includes earnings in excess of the Social Security taxable maximum. These additional earnings sources are included because they can be saved while working to furnish income in retirement. Likewise, the quintiles in Table 4 include earnings above the current law taxable maximum.[28]

Total retirement income replacement rates as estimated by MINT for individuals aged 64–66 in 2005 are shown in Table 4. Total income replacement rates are generally high relative to standard rules of thumb. The median replacement rate relative to final earnings is 185 percent; relative to PV payment, the constant real amount payable from the present value of shared earnings between age 21 and retirement is 98 percent. Relative to wage-indexed average earnings, the median total retirement income replacement rate is

106 percent. The median replacement rate relative to the CPI-indexed average of lifetime earnings is 124 percent.

As these outcomes are quite high and include almost all major sources of income with the exception of noncash government transfers and implicit rent, it is important to note the roles of different income components. Table 5 shows the percentage of total income supplied by each income source, broken down by quintiles of total wage-indexed lifetime earnings. Overall, Social Security benefits provide about 40 percent of total income for nondisabled beneficiaries aged 64–66 in 2005. Asset income and DB pensions provide approximately 25 percent and 10 percent of total income, respectively. Earnings provide an additional 20 percent of total retirement income, and co-resident income provides around 5 percent for the typical individual. SSI payments are relevant only for those in the bottom quintile of lifetime earnings.

These proportions allow for approximations of different replacement rate measures based on different income sources. For instance, one might wish to omit co-resident income and earnings, as these may not continue throughout retirement. As they make up

Table 4.
Median shared total retirement income replacement rates, by shared lifetime earnings quintile for retired beneficiaries aged 64–66 in 2005 under alternative definitions of preretirement earnings (in percent)

Definition	Lowest	2nd	3rd	4th	Highest
Final earnings	381	210	185	161	143
PV payment	160	111	98	108	115
Wage-indexed average earnings	176	120	106	112	112
CPI average	204	141	124	130	130

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: PV = present value; CPI = consumer price index.

Table 5.
Composition of total retirement income, by shared lifetime earnings quintile for retired beneficiaries aged 64–66 in 2005 (percentage distribution)

Income source	All	Lowest	2nd	3rd	4th	Highest
Social Security	39	47	43	41	35	29
Earnings	20	16	22	19	20	25
DB pensions	10	8	9	11	11	12
Asset income	25	19	20	25	31	31
Co-resident income	5	9	6	4	3	3
SSI	0	1	0	0	0	0

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: Sums may not equal 100 due to rounding.

DB = defined benefit; SSI = Supplemental Security Income.

roughly 25 percent of total retirement income, one could multiply median replacement rates in Table 4 by 0.75 to arrive at approximate replacement rates provided by the combination of Social Security, DB pensions, assets, and SSI. By this measure, the median value would fall to 163 percent relative to final earnings, and to 92 percent, 96 percent, and 114 percent relative to PV payment, wage-indexed average, and CPI average, respectively.

The results in Table 4 point to somewhat higher income adequacy for current retirees than many suppose. Under these measures, the median income for an individual aged 64–66, excluding current earnings and nonspousal co-resident income, exceeds his or her average working-age earnings by almost one-quarter. Retirement income is also significantly higher than earnings in the 5 years immediately preceding retirement. It should be noted that significant dispersion in benefits and replacement rates can exist even for Social Security beneficiaries with the same lifetime earnings. In particular, the relative earnings between spouses can alter eligibility for and generosity of Social Security spousal benefits, which can significantly affect total benefits.

Because of the dispersion of replacement rates, it is informative to measure the percentage of the sample that exceeds a target replacement rate. The National Retirement Risk Index (NRRI) projects that a household would need total retirement income to replace between 67 percent and 81 percent of wage-indexed average earnings, depending on its income (Munnell, Webb, and Delorme 2006). Out of caution, a benchmark of 80 percent of wage-indexed average earnings, toward the high end of this range, is used; then the percentage of individuals who fall short of this level is measured. Among individuals aged 64–66 in 2005, around 17 percent would have total retirement income

replacement rates below 80 percent of wage-indexed average earnings. Individuals in the lowest and second lowest quintiles of shared wage-indexed average earnings are at greatest risk of absolute deprivation; among them, 16 percent and 12 percent, respectively, would have total income replacement rates under 80 percent.

While these figures are helpful, they overestimate the population failing to reach the NRRI's target replacement rates for three reasons. First, as noted above, the NRRI indicates that many individuals would be adequately prepared with a replacement rate as low as 67 percent, but we count anyone below 80 percent as at-risk. Second, the NRRI definition of retirement income includes the annuitized value of all financial assets, while the MINT calculations annuitize only 80 percent. And third, the NRRI definition of retirement income includes the imputed rent on housing equity, but MINT calculations do not.

Still, the percentage of retirees who are at risk may rise in the future, owing to changes in the Social Security benefit formula, the coverage and generosity of private pensions, and increases in health care costs.

Replacement Rates at Older Ages

After retirement, replacement rates change as an individual ages. Table 6 replicates the replacement rate calculations shown in Table 4 but uses MINT model projections of retirement income for the same birth cohorts at ages 79–81. For purposes of comparison, the population is restricted to those collecting Social Security benefits as of ages 64–66 in 2005; in addition, individuals are grouped into the same lifetime earnings quintile they occupied in Table 4, even if a declining population due to mortality would have shifted them to other quintiles.

Perhaps unexpectedly, total income replacement rates at ages 79–81 are somewhat higher than at

Table 6.
Median shared income replacement rates, by shared total earnings quintile for retired beneficiaries aged 79–81 in 2020 under alternative definitions of preretirement earnings (in percent)

Definition	Lowest	2nd	3rd	4th	Highest
Final earnings	481	205	199	176	153
PV payment	150	105	103	109	124
Wage-indexed average earnings	171	117	110	113	123
CPI average	201	136	129	133	142

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: Includes earnings above the Social Security taxable maximum wage cap; for clarity, individuals are grouped into the same lifetime earnings quintile they occupied in 2005, even if declining population due to mortality would have shifted them to other quintiles.

PV = present value; CPI = consumer price index.

ages 64–66. For instance, median replacement rates relative to wage-indexed average earnings rise from 106 percent to 110 percent. Replacement rates fall for lower earners and rise for higher earners, but these changes are slight. To provide context, projected real median monthly income changes little over time ($2,423 in 2005 and $2,477 in 2020), but smaller household sizes cause poverty rates to decline slightly from roughly 2.5 percent to 2.2 percent.[29]

A number of factors could affect replacement rates over the course of retirement. Some factors could reduce replacement rates, including lower earnings from employment, declining assets, and the lack of inflation protection in annuities or DB pension payments.

However, other factors could increase replacement rates. For instance, Social Security payments could rise for individuals switching from retirement benefits based on their own earnings to widow or widower's benefits derived from a higher-earning spouse.[30] Likewise, asset income could rise, as some retirees are net savers and others could inherit sums from a deceased spouse. Moreover, if women have higher replacement rates and lower mortality than men, they could make up a greater proportion of a given birth cohort as it ages through retirement. In this case, individual replacement rates may not rise, but average replacement rates could increase as men with lower replacement rates leave the sample.

These results differ from those presented in Butrica (2007), where replacement rates decline through retirement. Using the MINT model to analyze the 1926–1939 birth cohorts, Butrica shows a median replacement rate of 105 percent of wage-indexed earnings at age 67, falling to 90 percent by age 80.[31] By contrast, the median replacement rate relative to wage-indexed average earnings for the middle quintile of lifetime earners in our analysis is 106 percent among beneficiaries aged 64–66 in 2005, rising to 110 percent by 2020 when these individuals would be aged 79–81. This disparity of 20 percent in typical replacement rates at age 80 again highlights the importance of clearly defining how replacement rates are calculated.

In Butrica, the replacement rate is calculated as the ratio of income at a given age to shared lifetime earnings, defined as the wage-indexed average of shared earnings from ages 22 through 62, indexed to the age of analysis.[32] Although values for the younger retiree are similar between the two analyses, the difference in the denominator used in the two studies could cause small changes in individual outcomes. The denomi-

nator in this analysis most similar to Butrica's is wage-indexed average earnings. However, our wage-indexed average earnings measure is indexed to age 60; Butrica's denominator is indexed to the year of analysis, in this case, age 67. An additional 7 years of wage indexing would increase the denominator by over 7 percent, assuming 1 percent real wage growth; this would reduce replacement rates by roughly 3 percentage points. Overall, these factors may offset, but it is worth bringing them to attention. Other factors that could generate different replacement rates include variations in sample size, how the replacement rates are computed or shown for those with no lifetime earnings, and how the lifetime earnings quintiles are distributed, to name just a few.

More important are the measurement differences that produce the decline in replacement rates through age 80 in Butrica's analysis. In our analysis, the replacement rate denominator is calculated once and its inflation-adjusted value does not change between ages 64–66 and 79–81. Thus, changes in replacement rates are driven entirely by changes in incomes. In Butrica's analysis, the average of earnings between ages 22 and 62 is, in effect, wage indexed to the age of analysis.[33] Thus, between ages 67 and 80 the denominator increases by $(1+g)^{13}$, where g represents average real wage growth in the intervening years. The geometric mean annual increase in real wage growth for the 13 years between 67 and 80 for the 1926–1939 birth cohorts averaged 1.31 percent, based on data from the Social Security Trustees Report. The effect of wage indexing on the replacement rate denominator alone would be sufficient to reduce a 106 percent replacement rate to approximately 90 percent, but other factors surely also affected replacement rates between 67 percent and 80 percent. In other words, even if retirement income were constant in real terms throughout retirement, the denominator used in Butrica would imply declining replacement rates.

The replacement rate used in Butrica at age 80 is less a measure of retirement income relative to pre-retirement earnings than it is a comparison of retiree income to the earnings of contemporaneous workers. While comparisons of pension benefits to average economy-wide wages are sometimes used to analyze the relative well-being of retirees and workers, they seem less useful in evaluating the income adequacy of individual retirees. These results indicate again that although replacement rates are helpful tools for measurement and planning, careful attention must be given to how replacement rates are defined and applied.

Table 7.
Median shared benefit replacement rates, by lifetime earnings quintile for retired beneficiaries aged 64–66 in 2040 under alternative definitions of preretirement earnings (in percent)

Definition	Lowest	2nd	3rd	4th	Highest
Final earnings	91	61	55	52	38
PV payment	73	50	44	39	33
Wage-indexed average earnings	65	45	39	34	29
CPI average	79	54	48	42	35

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: PV = present value; CPI = consumer price index.

Table 8.
Median shared total retirement income replacement rates, by total shared lifetime earnings quintile for retired beneficiaries aged 64–66 in 2040 under alternative definitions of preretirement earnings (in percent)

Definition	Lowest	2nd	3rd	4th	Highest
Final earnings	209	144	131	121	176
PV payment	137	104	96	98	119
Wage-indexed average earnings	121	91	84	88	102
CPI average	146	110	100	106	124

SOURCE: Authors' calculations based on Modeling Income in the Near Term (MINT) model.

NOTES: PV = present value; CPI = consumer price index.

Replacement Rates for Future Retirees

For reference, we project replacement rates for future retirees using MINT model projections of future earnings, marital patterns, savings and wealth accumulation, and other factors. Tables 7 and 8 provide projected shared Social Security and total retirement income replacement rates for individuals aged 64–66 in the year 2040. These are calculated in the same manner as the figures for 2005.

These projected replacement rates allow for two comparisons. First, on the methodological end, it is interesting to note that while the PV payment measure produces lower median Social Security replacement rates than the wage-indexed average earnings measure in 2005 (42 percent versus 45 percent), in 2040 the opposite is true: the projected median replacement rate using PV payment as the denominator is 44 percent, versus 39 percent for the wage-indexed average.

Second, the 2040 figures provide information on the projected retirement preparedness of the 1974–1976 birth cohorts. Shared Social Security replacement rates for the median earner are somewhat lower using all measures except for PV payment, reflecting declines in benefits owing to scheduled increases in the full

retirement age from 65 to 67. For instance, the median replacement rate of benefits relative to the CPI average declined from 53 percent in 2005 to 48 percent in 2040. These declines appear to be relatively uniform across the earnings spectrum. One exception is a large decline in replacement rates relative to final earnings for the bottom earnings quintile, from 137 percent to 91 percent. However, final earnings are more volatile than the other measures, and this decline presumably reflects increased labor force participation later in life among lower earners.

Table 8 shows shared total retirement income replacement rates for individuals aged 64–66 in the year 2040, calculated using the same methods as in Table 4. In contrast with Social Security replacement rates shown in Table 7, which would be only slightly lower than in 2005, total retirement income replacement rates in 2040 are projected to be significantly below those in 2005. This reduction reflects a variety of factors. In addition to declining Social Security replacement rates, which are a component of the total replacement rate, lower participation in relatively generous DB private pensions and longer life spans over which accumulated wealth must be spread contribute to lower overall replacement rates in 2040. In addition,

MINT projects retiree earnings to be lower relative to preretirement earnings in 2040 than in 2005.

It is unclear whether these reductions denote inadequate retirement incomes, given there is no definitive standard of replacement rate adequacy. Median replacement rates relative to the wage-indexed average in all earnings quintiles are above 80 percent, a standard that is often mentioned, and in all earnings quintiles, median retirement income exceeds 100 percent of the CPI average of earnings during working years. That being said, 39 percent of beneficiaries aged 64–66 in 2040 would have total income replacement rates below 80 percent of wage-indexed average earnings. About 28 percent of those in the lowest lifetime earnings quintile would have replacement rates below 80 percent. Regardless of whether 80 percent is an appropriate target replacement rate and wage-indexed earnings are an appropriate denominator in the replacement rate calculation, these figures show a projected decline in retirement adequacy from 2005 through 2040. Additional research is necessary to better judge the adequacy of projected future retirement resources.

Discussion and Conclusions

Replacement rates are a common and useful tool used by individuals and policy analysts to plan for retirement and assess the sufficiency of Social Security benefits and overall retirement income. Different measures of preretirement earnings are used in calculating replacement rates, and comparisons of replacement rates using different denominators can be misleading. This article presents various ways of measuring replacement rates and applies these measures to a sample population of retirees generated though the Social Security Administration's (SSA's) MINT model.

Financial advisors generally measure replacement rates relative to final earnings, while SSA measures replacement rates relative to average indexed lifetime earnings. This difference can lead to inappropriate conclusions about the adequacy of typical Social Security benefit payments. According to the financial advisors' maxim that individuals require a total retirement income equal to 70 percent to 90 percent of earnings immediately preceding retirement, most current Social Security beneficiaries appear to have an adequate income. However, final earnings are a more erratic measure than lifetime earnings, so no strong conclusions should be drawn from this finding. Unfortunately, no current rule of thumb allows for easy

calculations of retirement income adequacy relative to lifetime earnings.

This article outlines four alternative measures of preretirement earnings: final earnings, which is the measure used by most financial advisors; the wage-indexed average of lifetime earnings, which is the measure generally used by SSA; the inflation-indexed average of lifetime earnings, also known as the CPI average; and PV payment, the steady income payable from the present value of lifetime earnings. Replacement rates calculated using these four earnings measures are applied to Social Security beneficiaries aged 64–66 in SSA's MINT model in 2005. The replacement rate provided by a given level of retirement income can differ significantly based on the measure of preretirement earnings to which it is compared.

Several conclusions can be drawn from these results. First, measuring replacement rates is far from straightforward, and different replacement rate measures can result in widely different indicators of retirement income adequacy. Measured replacement rates will differ based on whether preretirement earnings are measured immediately preceding retirement or on a lifetime basis; whether earnings are discounted for inflation, wage growth, or market interest; whether earnings are capped at the Social Security payroll tax ceiling; whether they are combined with the earnings of a spouse; and other factors. Different calculations may be relevant to different circumstances and so the concept of a single "replacement rate" may be simplistic. In any case, it is most important that replacement rates be defined explicitly to avoid confusion between different replacement rate measures.

Second, Social Security pays higher average replacement rates to those with lower lifetime earnings, although there is significant dispersion of replacement rates within groups with similar lifetime earnings. The distribution of replacement rates by lifetime earnings level is narrowed significantly when viewed on the basis of shared rather than individual income, signifying that a significant portion of Social Security's redistribution flows within married couples rather than between married couples of different lifetime earnings levels.[34]

Third, total retirement income replacement rates for beneficiaries aged 64–66 in 2005 compare favorably with the benchmarks established by the World Bank and are projected to remain so as these individuals age. Although there are reasons for concern about future retirees, whose replacement rates are projected to decline owing to Social Security policy changes,

changes in the use and terms of private pensions, and other factors, the replacement rates for current retirees are surprisingly strong.

While replacement rates are not the most sophisticated means of measuring retirement income adequacy, because of their simplicity it appears inevitable that replacement rates will remain common measurements both for individuals conducting their own retirement planning and for policymakers judging the adequacy of Social Security benefit payments. For this reason it is important to examine current and potential replacement rate measures critically. Continued research into replacement rates may improve their utility in these important roles.

Notes

[1] An additional question is whether the earnings denominator should include earnings above the Social Security taxable maximum amount or earnings from non-Social Security–covered employment. This article uses earnings in excess of the taxable maximum from Social Security–covered employment in calculating total retirement income replacement rates, but uses only earnings from covered employment up to the cap for calculating Social Security benefit replacement rates.

[2] See Appendix 1, available at http://www.ssa.gov/history/reports/gspan16.html.

[3] For instance, workers in a larger organization promising long-term employment may easily be able to predict future wages, while individuals changing employers or fields may have more difficulty.

[4] This "work or retirement" choice is relevant particularly for workers with defined benefit pensions, where it is generally difficult to continue work in the same job while receiving retirement benefits.

[5] This smooth consumption path is based on the assumption that the marginal utility of consumption is declining, meaning that the last unit of consumption in a period produces less utility than the first. If so, then shifting an additional unit of consumption from a period of higher to lower consumption tends to maximize the marginal utility of consumption in each period, and thus maximize the summed utilities of periodic consumption over the individual's lifetime. More precisely, the life cycle model predicts that individuals will seek to smooth the *marginal utility* of consumption rather than simply the *level* of consumption. Thus, for instance, retirees may choose to consume more when relatively young, as their better health status would better enable them to enjoy consumption activities such as travel and recreation. However, consumption smoothing is often used as a simplifying device and should not affect the basic results shown here.

[6] The real interest rate is used to produce a real payment amount; the nominal payment is assumed to increase annually at the rate of inflation.

[7] The medium wage earnings pattern is derived from Clingman and Nichols (2007).

[8] Earnings past age 60 are not indexed.

[9] Historical values for the average wage index are available at http://www.ssa.gov/OACT/COLA/awiseries.html.

[10] Technically, the replacement rates in the Trustees Reports do not use an AIME-based denominator because earnings are wage-indexed to the year prior to retirement instead of age 60. Thus, small differences exist between these rates and those that would be found using an AIME-based denominator. Also note that the stylized medium earner is in the 57th percentile of the lifetime earnings distribution and thus has slightly higher earnings than the median worker in the population. (The low- and the high-scaled workers are at the 27th and 82nd percentiles of the earnings distribution.) See Clingman and Nichols (2007).

[11] Through the 2000 Social Security Trustees Report, replacement rates were measured relative to final earnings, defined as earnings in the 12 months prior to claiming benefits. Illustrative replacement rates were calculated for low-, medium-, and high-earning individuals earning a steady 45 percent, 100 percent, and 160 percent of the average wage, respectively, along with an individual earning the maximum taxable wage annually. In 2001, the Report began illustrating benefits and replacement rates using stylized "scaled earners," whose age-earnings profile better fits the inverted-U shape commonly found in practice. See Clingman and Nichols (2007). As the low-, medium-, and high-scaled earners were designed to have the same AIMEs as the steady-wage illustrative workers, the replacement rates for scaled workers relative to average indexed wages would be very similar to those for similar constant wage workers relative to final earnings.

[12] See Carroll (1996), especially Figure V.

[13] It should be noted, however, that a CPI-indexed measure of lifetime earnings relates only to measures of benefit adequacy and is not related to current policy debates over the desired rate of growth of initial benefits between succeeding cohorts (often referred to as a debate between "wage indexing" and "price indexing"). Lifetime earnings, whether measured as a wage- or price-indexed average, will grow over time at the rate of wage growth and thus retirement benefits replacing a given percentage of lifetime earnings would grow at the same rate. The policy debate over wage and price indexing asks whether initial retirement benefits should continue to rise with wage growth from cohort to cohort.

[14] The Social Security benefit formula is gender-neutral and spousal benefits can be paid to either a husband or a wife. In the great majority of cases, however, the recipient of spousal benefits is the wife.

[15] In the MINT model, slightly less than 60 percent of nondisabled female beneficiaries in 2005 receive some form of spousal or widow benefit either as a supplement to their own worker benefit or as their only benefit. When looking at only those age 65 in the 2005 population, this percentage drops to about 44 percent. The proportion of women expected to claim benefits only from their own record is projected to increase in future years as benefit entitlement more closely reflects the increase of women in the workforce. Changes in marital composition, such as increasing numbers of never-married individuals and divorced individuals married for less than the 10-year requirement for spousal benefits, would also reduce the role of auxiliary benefits in future years.

[16] The full retirement age was 65 through most of Social Security's history. In 2000 it began to be adjusted upward, generally in 2-month increments, eventually to age 67. A full retirement age above 65 lowers replacement rates relative to a full retirement age of 65, regardless of actual retirement age. For the individuals used in the MINT analysis, the full retirement age is 65 and 2 months.

[17] Myers also calculates "net replacement rates" under current law for workers of various earnings levels retiring at 65 in 1990, taking into account federal and state taxes and working expenses. He finds that for the lowest earners, Social Security will "take care of the full economic needs of very low earners reasonably well," while for middle-wage earners, Social Security benefits provide substantial but not total retirement income (Myers 1993, 211).

[18] McGill and others (2005) use a stylized earnings pattern wherein real wages rise until age 55 then remain constant in real terms thereafter.

[19] In the context of replacement rates, the World Bank uses the term "household" to include individuals in addition to the retired worker and spouse. Because the MINT data used in this article do not include children, we avoid the use of the term "household" except when generally applicable or when it may appear in source materials. For the purposes of comparison, we define a household as comprising a married couple or a single retired beneficiary.

[20] Additional information on the MINT model can be found in Toder and others (2002).

[21] Analysis is limited to the nondisabled, as calculating replacement rates based on the truncated lifetime earnings of disabled individuals could skew the results.

[22] As Social Security benefits are calculated under current law, an individual does not technically have an AIME unless he or she has qualified for benefits by attaining 40 quarters of covered employment. The AIME figure here is calculated for all individuals in the MINT population, not merely for those who become fully insured based on their own earnings.

[23] Additionally, sorting by lifetime earnings rather than current income avoids distortions in total retirement income replacement rates. In those cases, individuals who increase their current income through employment would both raise their replacement rates as well as their placement in the overall income distribution.

[24] Thus, the shared resource measure differs from a household or married-couple measure in that the shared measure effectively tracks individuals and couples over the course of their lives while a typical household measure examines them at one point.

[25] The method of calculating replacement rates relative to the final 5 years of earnings merits attention. Individuals with no earnings in the 5 years immediately prior to claiming benefits would have an infinite replacement rate. To avoid infinite values while retaining such individuals in the population, these individuals are assigned replacement rates equal to the highest replacement rate of any individual in their lifetime earnings quintile. This method should not affect stated median values except in the case where the median value is infinite.

[26] To the degree that individuals consume assets at different rates, realized replacement rates at ages 64–66 would differ; those who consumed their assets more quickly would have higher replacement rates early in retirement but lower rates in later years, while those who consumed their assets more slowly would have lower replacement rates at ages 64–66 and higher replacement rates later. In general, individuals appear to reduce their consumption somewhat as they enter retirement; see Hurd and Rohwedder (2003).

[27] Slight differences may exist between the modeling of the retirement earnings test in MINT and its application in real life. In practice there are sometimes delays in the reporting of earnings and discrepancies between projected and realized earnings.

[28] Note that the population used throughout this article excludes individuals with earnings from employment not covered by Social Security, such as certain state and local government employees.

[29] Poverty rates as measured in the MINT model tend to be somewhat lower than official poverty statistics, as the SIPP data used in building the MINT model include more asset income than do official poverty measures.

[30] In these cases, replacement rates could rise even if household income declined because the household size was reduced. Whether the surviving spouse's economic well-being rises or falls depends on the change in total income relative to the change in the cost of living and for an individual relative to a couple.

[31] Strictly speaking, Butrica measures the median replacement rates as the mean value of the 40th to 60th percentiles of replacement rates.

[32] Earnings in this context include earnings above the Social Security payroll tax ceiling, consistent with our analysis of total retirement income.

[33] To see this, note, for example, that Butrica's replacement rate for age 80 (R80) can be written as follows: R80 = I80 / (KSAIME * E80), where I80 is the respondent's nominal shared income at age 80, E80 equals the average earnings in the economy in the year the respondent turns age 80, and KSAIME is the average *ratio* of the respondent's shared earnings to economy-wide average earnings from age 22 through age 62. In the denominator, the average ratio of the respondent's shared earnings is multiplied by economy-wide earnings in the year the respondent turns age 80.

[34] On this point, see Gustman and Steinmeier (2001).

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Social Security Beneficiaries Affected by the Windfall Elimination Provision in 2006

by Barbara A. Lingg

The author is with the Office of Research, Evaluation, and Statistics, Office of Retirement and Disability Policy, Social Security Administration.

Summary

The Windfall Elimination Provision (WEP) is an alternative method of computing benefits for some workers who receive a pension based on work not covered by Social Security. The WEP computation results in a lower benefit than the worker would receive under the regular computation method. This article provides a brief legislative history, describes the WEP computation and applicability, and presents statistical data about beneficiaries affected by the WEP.

The statistical data show that, as of the end of December 2006:

- About 970,000 beneficiaries, mainly retired workers, were affected by the WEP, and the WEP affected the benefits of almost 3 percent of all retired workers.

- Almost half of the retired workers affected by the WEP received a federal pension, and another 36 percent received either a state or local pension.

- Sixty-five percent of both retired and disabled workers affected by the WEP were men.

History of the Windfall Elimination Provision (WEP)

The regular Social Security benefit computation formula is weighted to provide a higher replacement of earnings for workers with low earnings. Most employment and self-employment in the United States is covered by Social Security. Workers and their employers pay taxes up to an annual maximum amount, and the earnings are creditable for Social Security purposes.

Before the WEP was enacted, individuals who had worked mainly in employment not covered by Social Security had their benefits computed as if they were long term low-wage earners. The WEP prevents this unintended windfall for workers who receive a pension from a job where they did not pay Social Security taxes, but who benefited from provisions aimed at low lifetime earners. Examples of pensions from noncovered employment are Civil Service Retirement pensions payable to federal employees hired before 1984, state and local government pensions based on noncovered earnings, and certain pensions from earnings in foreign countries.

The Windfall Elimination Provision was one of the many legislative changes included in the Social Security Amendments of 1983 (Public Law 98–21). Major provisions of this legislation included gradually raising the retirement age and making a portion of Social Security benefits received by higher income beneficiaries subject to income taxes. The amendments

also provided for mandatory Social Security coverage of newly hired federal employees and current and future employees of nonprofit organizations (Svahn and Ross 1983, 24–27).

Prior to Congressional action, the issue of windfall benefits payable to persons with noncovered employment was considered in two bipartisan national Social Security study commissions. The National Commission on Social Security issued its report on March 12, 1981. One of its recommendations was that "the windfall portion of benefits arising from periods of noncovered government employment in the future (due to the weighted benefit formula) should be eliminated" (National Commission on Social Security 1981, 26).

The WEP was also on the agenda of the later National Commission on Social Security Reform (NCSSR). The commission's report, released in January 1983, recommended "that the method of computing benefits should be revised for persons who first become eligible for pensions from non-covered employment, after 1983, so as to eliminate 'windfall' benefits." The report included two methods of modifying the windfall. One method would make the percentage related to the second bendpoint of the primary insurance amount (PIA) formula applicable to the first bendpoint (32 percent instead of 90 percent) for workers with noncovered pensions. The reduction in benefits would not be larger than the pension from noncovered employment. The second method would apply the current benefit formula to a record that combines both covered and noncovered earnings to determine a replacement rate, which would then be applied to the average earnings based solely on covered employment (NCSSR 1983, 2-9–2-10).

In February 1983, the Social Security Subcommittee of the House Ways and Means Committee completed markup sessions on a draft bill. The subcommittee agreed with the first NCSSR approach to modify the benefit formula on advice that the second method would pose significant administrative problems, and that generally similar results could be achieved by reducing the percentage in the first bendpoint (Svahn and Ross 1983, 10).

After further action in both the House of Representatives and Senate, the conference committee agreement substituted 40 percent for 32 percent as the percentage applicable to the first bendpoint, provided for the 5 year phase-in period, and exempted newly

covered employees and those with 30 years of covered work (Committee on Ways and Means 1983, 121). These WEP provisions were included in the legislation signed by President Ronald Reagan on April 21, 1983.

The WEP Computation

Social Security benefits are based on the PIA, which is the monthly benefit payable to the worker upon retirement at full retirement age or upon entitlement to disability benefits. The PIA is derived from the worker's average indexed monthly earnings (AIME). The AIME is based on annual covered earnings that have been indexed to reflect changes in wage levels since the year the earnings were paid. The indexed earnings are then averaged over most of the worker's adult years to determine the AIME.

After the AIME has been determined, the PIA is computed by applying a formula to the AIME. The formula applies three percentages to three brackets of the AIME. The formula is weighted to provide a higher PIA to the AIME ratio for workers with relatively low earnings by applying declining percentage rates to the three AIME brackets. The dollar amounts defining the AIME brackets are referred to as bendpoints and are updated each year in proportion to increases in the national average wage level. For workers who first became eligible for benefits—those who reach age 62 or become disabled—in 2006, the PIA is equal to the sum of:

> 90 percent of the first $656 of AIME, plus
>
> 32 percent of the next $3,299 of AIME, plus
>
> 15 percent of the AIME over $3,955.

The PIA is the monthly amount payable at full retirement age (FRA)—age 66—for workers who attained age 62 in 2006. Retirement benefits are reduced for each month of benefit receipt before the FRA. Disabled workers may receive 100 percent of the PIA, unless they receive a reduced retirement benefit for months before disability entitlement (SSA 2007a, 14–17).

The WEP computation for the PIA generally applies 40 percent to the first bendpoint instead of the 90 percent used to compute the regular PIA. The maximum amount of PIA reduction is half of the amount of the first bendpoint applicable to the year of first eligibility. The following example shows the maximum PIA reduction due to the WEP for a worker who attains age 62 or becomes disabled in 2006:

Regular PIA, based on AIME of $800

> $656 x .90 = $590.40
>
> $144 x .32 = $46.08
>
> Regular PIA = $636.40

Windfall Elimination Provision PIA, based on AIME of $800

> $656 x .40 = $262.40
>
> $144 x .32 = $46.08
>
> WEP PIA = $308.40

After the calculation, the PIA is rounded down to the nearest $0.10. The maximum PIA reduction due to the WEP is $328, one-half of the first bendpoint of $656.

WEP Applicability

The WEP computation reduces the PIA for some retired and disabled workers and their spouses and children. It is the PIA of record. However, the WEP computation does not apply to survivor benefits. If a worker dies, benefits for widow(er)s and children are based on the regular PIA.

The WEP may apply to workers who attained age 62 or became eligible for disability benefits after 1985 and became eligible after 1985 for a pension based in whole or in part on earnings in employment not covered by Social Security. Workers who have 30 or more years of substantial earnings covered under Social Security are exempt from the WEP. The annual amount of substantial earnings is based on a formula and is updated each year based on the increase in the national average wage level. The formula for substantial earnings is 25 percent of the old law's contribution and benefit base, the amount that would have determined maximum taxable earnings for benefit computation purposes had the 1977 Social Security Amendments (which included ad hoc increases in the maximum taxable earnings) not been enacted. Amounts of substantial covered earnings were $11,625 for 1996 and $17,475 for 2006 (SSA 2007c, 2). These amounts are 25 percent of the old law's base amounts of $46,500 and $69,900, respectively.

Benefits for workers with 21–29 years of substantial covered earnings are not fully impacted by the WEP. The 40 percent applicable to the first bendpoint percentage is increased by 5 percentage points for each year of substantial covered earnings beginning with the 21st year and through the 30th year, at which point the WEP no longer applies. The first bendpoint percentage ranges from 45 percent for workers with 21 years of substantial covered earnings to 85 percent for workers with 29 years (SSA 2007a, 16).

There is a guarantee provision for workers with relatively low pensions based on noncovered employment. The reduction in the Social Security benefit due to the WEP cannot exceed one-half of the amount of the pension based on noncovered earnings after 1956 (SSA 2007c, 2).

The WEP was phased in for workers first eligible for retirement or disability insurance in 1986 through 1989. For those first eligible in 1986 and subject to the WEP, the applicable first bendpoint percentage was 80 percent. The percentage decreased by 10 percentage points each year for those first eligible in 1987–1989 and reached 40 percent for those first eligible in 1990 or later (SSA 2007a, Table 2.A11.1).

The WEP does not apply to two groups of employees whose Social Security coverage was mandated in 1984—federal employees who were first hired after December 31, 1983, and certain employees of nonprofit organizations who started employment on December 31, 1983. Other WEP exceptions include pensions based on railroad employment, pensions based solely on noncovered employment before 1957, and certain pensions paid as a result of totalization agreements between the United States and foreign countries (SSA 2007c, 2).

Beneficiaries Affected by the WEP

The following sections present statistical data on beneficiaries affected by the WEP who were in current-payment status as of December 2006. The beneficiary statistical data were derived from the Social Security Administration's Master Beneficiary Record (MBR). The MBR is the principal file used in the administration of the Social Security benefit program. The data show demographic and program characteristics of those affected, information on pensions and years of coverage, and effects of the WEP on the PIA and monthly benefits.

Demographic and Program Characteristics

At the end of 2006, 971,310 beneficiaries were affected by the WEP. Ninety percent were retired workers. Another 2 percent were disabled workers, and the remaining 8 percent were spouses and children of affected workers (Table 1). From 1999 to 2006 the number of affected beneficiaries more than doubled. Although small numbers of disabled workers

are affected by the WEP, the percentage increase was slightly higher for these workers (137 percent) than for retired workers (110 percent) during this period.

About 65 percent of both retired and disabled workers affected by the WEP were men. The WEP affected the benefits of 3.6 percent of all men receiving retired-worker benefits, compared with 2.0 percent of all women (Table 2).

The WEP affected the benefits of about 4 percent of retired workers under age 75, but only 2.3 percent of those aged 75–79 and 0.3 percent of those aged 80 or older. The WEP did not apply to persons first eligible for benefits prior to 1986.

Also, those first eligible after 1985 were affected only if they were entitled to a noncovered pension that began after 1985. Thus, fewer older beneficiaries were affected by the WEP.

Tables 3 and 4 present state-by-state breakdowns of beneficiaries affected by the WEP. In some states, the percentage of retired workers affected by the WEP was substantially higher than the national figure of 2.8 percent. More than one-tenth of the retired workers in Alaska and the District of Columbia were affected as well as about 5 percent of those in Colorado, Maine, Maryland, Nevada, and Ohio. The percentages are higher in these states because they had either many federal employees or low percentages of state and local employees who were covered by Social Security. In both 1991 and 2001, less than 50 percent of state and local workers in Alaska, California, Colorado, Maine, Louisiana, Massachusetts, Nevada, and Ohio were covered by Social Security. (Committee on Ways and Means 1996, 10–11 and 2004, 1-43–1-44).

Because of the small number of disabled workers affected by the WEP, percentages affected in each state are not presented.

Pensions and Years of Coverage

Table 5 shows the sources of pensions for retired and disabled workers affected by the WEP. Almost half of the retired workers and over two-fifths of the disabled workers received federal pensions. The percentages of retired and disabled workers receiving state and local pensions were similar, 36 percent and 38 percent, respectively.

Almost three-fourths of workers affected by the WEP had fewer than 21 years of substantial covered earnings (Table 6). Thus, almost three-quarters of the workers were subject to the maximum PIA reduction—50 percent of the first bendpoint, unless they

were covered by the WEP guarantee. Another 10 percent had 21–24 years, and about 8 percent had 25–29 years. Retired and disabled workers had similar distributions of years of covered earnings, but women tended to have fewer years than men.

Table 7 shows distributions of the monthly non-covered pension amount for workers affected by the WEP who became entitled to Social Security benefits in 2004–2006. These years were selected to provide fairly current data on pensions. For beneficiaries entitled in these years, higher percentages of disabled workers and women received lower pensions. About two-thirds of disabled workers received monthly noncovered pensions of less than $2,000, compared with 45 percent of retired workers. About two-thirds of women, compared with one-third of men received less than $2,000 per month.

Table 8 relates the amount of the monthly non-covered pension to the primary insurance amount for recently entitled retired workers who were affected by the WEP. Since persons affected by the WEP had many years in noncovered employment, PIAs tended to be low. The years of zero Social Security earnings were included in the computation of the AIME, resulting in a lower PIA, which is further reduced by the WEP.

Overall, about 33 percent of the men and 44 percent of the women in this group had PIAs of less than $300 per month. However, only 11 percent of the men and 32 percent of the women with noncovered pensions of less than $1,000 had PIAs under $300. Some workers with the lowest noncovered pension had fewer years of noncovered employment and more years of covered employment and thus were able to earn higher PIAs.

Effect of the WEP on the PIA

For about 87 percent of the affected workers, there was enough information to estimate the PIA before application of the WEP. The application of the WEP substantially reduced the PIAs of both retired and disabled workers. For retired workers, the reduction in the PIA averaged $246 or 35 percent of the PIA before application of the WEP (Table 9). Among disabled workers, the PIA reduction averaged $262 or 30 percent of the PIA before the WEP (Table 10).

The maximum reduction in the PIA due to the WEP depends on the year of first eligibility for benefits and was $328 for workers first eligible in 2006. Among retired workers aged 62–64, the estimated reduction in the PIA was $273. As noted in Table 6, almost three-quarters of retired workers affected by the WEP had

fewer than 21 years of substantial covered earnings and could be subject to the maximum PIA reduction. However, the PIA reduction averaged only $119 or 18 percent for retired workers aged 80 or older (Table 9). These individuals were first eligible for benefits prior to 1989 and, thus, were affected by the gradual phase in of the WEP reduction (as discussed above).

Among retired and disabled workers affected by the WEP, average PIAs before the WEP reduction were lower than average PIAs for all workers in these groups. For affected retired workers, the average PIA before application of the WEP was $706, compared with $1,072 for all retired workers receiving benefits at the end of 2006 (Table 9) (SSA 2008, Table 5.B7). Comparable figures for disabled workers were $882 and $979, respectively (Table 10) (SSA 2008, Table 5.E1).

Benefit Amounts for Retired Workers

Retired workers receive the full PIA if they begin receiving benefits at the FRA. Monthly benefits are permanently reduced for each month of entitlement before the FRA. The maximum reduction for workers who attained age 62 before 2000 was 20 percent and is gradually increasing along with the FRA (SSA 2007a, Table 2.A17.1). The maximum reduction for workers who attained age 62 in 2006 is 25 percent, based on a FRA of 66.

The monthly benefit for retired workers is increased if the worker is dually entitled to a higher benefit as a spouse or widow(er). This worker receives the amount of the worker benefit plus the difference between that amount and the benefit he or she would receive as a spouse or widow(er). A beneficiary cannot receive both the full worker benefit and the full spouse or widow(er) benefit.

Table 11 shows average PIAs and monthly benefits for all retired workers affected by the WEP. The PIA is the amount after application of the WEP. The average benefit for those affected by the WEP—$431 (Table 11)—was much lower than average benefits for all retired workers receiving benefits—$1,044 (SSA 2008, Table 5A.1.1).

For men affected by the WEP, monthly benefits averaged $443 and PIAs averaged $500. Average benefits were lower than average PIAs for all age groups, reflecting a number of early retirements. Since the benefits for all men aged 62–64 were reduced for early retirement, the average benefit of $364 was only 77 percent of the average PIA of $473.

The average benefit for all women affected by the WEP ($408) was higher than the average PIA ($391). For women aged 75 or older, the average benefit was about 26 percent higher than the average PIA. About 51,000 women, one-sixth of those affected by the WEP, were dually entitled to a spouse or widow benefit. In contrast, only 2,400 men were dually entitled (Table 12). Benefits averaged $664 for dually entitled women and $616 for dually entitled men affected by the WEP.

For some of the dually entitled beneficiaries affected by the WEP, the amount of the spouse or widow(er) portion of the benefit may have been reduced due to the Government Pension Offset (GPO) provision. The GPO provision also affects the benefits of persons who work in noncovered employment. The WEP affects the worker benefit, and the GPO affects the spouse and widow(er) benefits of persons who receive a pension based on their own work in noncovered government employment. Thus, persons who work in noncovered employment can have their worker benefit reduced due to the WEP and their spousal or widow(er) benefit offset by the GPO. Unless certain exceptions apply, the spousal or widow(er) benefit is generally reduced by two-thirds of the noncovered pension (SSA 2007b). The GPO could completely offset the spousal or widow(er) portion of the benefit, and, thus, the retired worker would not be counted as dually entitled in Table 12.

Conclusion

The WEP was enacted to prevent a windfall for workers who receive a pension from a job where they did not pay Social Security taxes, but would benefit from provisions aimed at low earners. The impact of the WEP is as intended: it helps to ensure that workers with pensions from noncovered employment do not receive the advantage of the weighted benefit formula that is intended for career-long low earners.

The number of beneficiaries affected by the WEP has been increasing and should continue to increase as the baby-boom generation retires. Certain advocacy groups and individuals affected by the WEP have raised concerns about the WEP, arguing that it unfairly targets public employees who are low earners or have careers split between covered and noncovered employment. In response, during the past several Congressional sessions, bills were introduced to eliminate or modify the WEP:

- The Social Security Fairness Act of 2007 (H. R. 82 and S. 206) would repeal the Windfall Elimination Provision and also the Government Pension Offset Provision for monthly benefits payable after December 2007.

- The Windfall Elimination Provision Relief Act of 2007 (H. R. 726) would combine amounts of the monthly noncovered pension and the worker's monthly PIA and apply less stringent WEP provisions for smaller combined income amounts.[1]

- The Public Servant Retirement Protection Act of 2007 (H. R. 2772 and S. 1647) would repeal the current WEP provisions and substitute a new PIA formula based on the proportion of earnings in Social Security covered employment to the total earnings in both covered and noncovered employment. [2]

Notes

[1] The WEP would be eliminated for individuals with a combined amount of $2,500, would be phased in gradually for those with monthly amounts between $2,500 and $3,334, and would apply fully for the combined amount of $3,335 or more. The dollar threshold amounts would be indexed to annual increases in the average wage.

[2] This new method would apply to those who first perform noncovered employment one year after enactment or to persons who performed covered employment before that time and would benefit by the provision.

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Table 1.
Number of beneficiaries with benefits affected by the WEP in current-payment status, by sex and type of benefit, December 1999–2006

Year	Total	Retired workers		Disabled workers		Spouses and children
		Men	Women	Men	Women	
1999	469,602	279,550	138,034	4,002	1,941	46,075
2000	553,059	330,277	162,568	4,549	2,209	53,456
2001	621,247	370,647	183,957	5,134	2,624	58,885
2002	689,980	410,456	206,542	5,820	2,989	64,173
2003	757,930	449,207	230,523	6,647	3,416	68,137
2004	829,735	489,550	256,282	7,523	3,918	72,462
2005	902,794	531,113	282,372	8,495	4,422	76,392
2006	971,310	570,000	308,099	9,202	4,856	79,153

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

Table 2.
Number of retired-worker and disabled-worker beneficiaries with benefits affected by the WEP and percent of total affected, by sex, age, and type of beneficiary, in current-payment status, December 2006

Type of beneficiary	Number affected by the WEP (in thousands)	Total number receiving benefits (in thousands)	Percentage of total affected by the WEP
All workers	892,157	37,783,061	2.4
Retired workers, total	878,099	30,976,143	2.8
Sex			
Men	570,000	15,869,182	3.6
Women	308,099	15,106,961	2.0
Age			
62–64	119,806	2,840,334	4.2
65–69	327,743	8,098,996	4.0
70–74	276,263	6,833,648	4.0
75–79	128,245	5,581,592	2.3
80 or older	26,042	7,621,573	0.3
Disabled workers, total	14,058	6,806,918	0.2
Sex			
Men	9,202	3,643,121	0.3
Women	4,856	3,163,797	0.2
Age			
Under 50	798	2,318,440	a
50–54	1,323	1,176,128	0.1
55–59	4,099	1,516,025	0.3
60–65	7,838	1,796,325	0.4

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

a. Less than 0.05 percent

Table 3.
Number of beneficiaries in current-payment status with benefits affected by the WEP, by state and type of benefit, December 2006

State	Total	Retired workers	Disabled workers	Spouses and children
All areas	971,310	878,099	14,058	79,153
Alabama	13,477	11,912	261	1,304
Alaska	4,600	4,270	80	250
Arizona	17,579	15,978	296	1,305
Arkansas	7,788	7,010	200	578
California	120,458	109,715	1,588	9,155
Colorado	27,957	25,669	316	1,972
Connecticut	8,742	8,199	134	409
Delaware	2,191	1,994	52	145
District of Columbia	5,995	5,629	108	258
Florida	56,471	51,346	712	4,413
Georgia	27,497	25,361	380	1,756
Hawaii	6,214	5,580	86	548
Idaho	4,147	3,750	60	337
Illinois	49,565	46,288	506	2,771
Indiana	9,805	8,847	216	742
Iowa	5,712	5,254	64	394
Kansas	6,100	5,564	98	438
Kentucky	12,283	11,109	268	906
Louisiana	18,299	16,090	443	1,766
Maine	8,644	7,908	143	593
Maryland	30,674	28,247	428	1,999
Massachusetts	32,140	30,165	471	1,504
Michigan	12,139	10,930	221	988
Minnesota	12,114	11,206	133	775
Mississippi	6,624	5,906	146	572
Missouri	20,342	18,832	330	1,180
Montana	3,545	3,188	62	295
Nebraska	3,664	3,376	41	247
Nevada	12,230	11,401	181	648
New Hampshire	4,326	3,959	91	276
New Jersey	14,984	13,621	289	1,074
New Mexico	8,428	7,362	162	904
New York	21,889	19,854	363	1,672
North Carolina	17,855	16,321	300	1,234
North Dakota	1,810	1,641	14	155
Ohio	70,599	64,752	876	4,971
Oklahoma	12,397	11,068	259	1,070
Oregon	9,643	8,788	137	718
Pennsylvania	23,640	21,284	482	1,874
Rhode Island	3,017	2,757	71	189

(Continued)

Table 3.
Continued

State	Total	Retired worker	Disabled worker	Spouses and children
South Carolina	11,114	10,075	169	870
South Dakota	2,645	2,437	33	175
Tennessee	12,642	11,371	176	1,095
Texas	80,990	73,749	1,054	6,187
Utah	8,556	7,607	124	825
Vermont	1,715	1,559	22	134
Virginia	32,442	29,325	412	2,705
Washington	18,575	16,486	289	1,800
West Virginia	4,305	3,762	105	438
Wisconsin	8,028	7,418	99	511
Wyoming	1,620	1,483	23	114
Outlying areas and foreign countries	53,094	40,696	484	11,914

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

Table 4.
Number of retired workers in current-payment status with benefits affected by the WEP, by state, December 2006

State or area	Total number of retired workers receiving benefits [a]	Number of retired workers affected by WEP	Percentage of total affected by WEP
All Areas	30,976,145	878,099	2.8
Alabama	502,502	11,912	2.4
Alaska	40,237	4,270	10.6
Arizona	617,724	15,978	2.6
Arkansas	327,697	7,010	2.1
California	2,912,853	109,715	3.8
Colorado	392,178	25,669	6.5
Connecticut	408,611	8,199	2.0
Delaware	100,779	1,994	2.0
District of Columbia	45,919	5,629	12.3
Florida	2,349,812	51,346	2.2
Georgia	764,680	25,361	3.3
Hawaii	146,599	5,580	3.8
Idaho	150,186	3,750	2.5
Illinois	1,238,100	46,288	3.7
Indiana	683,997	8,847	1.3
Iowa	369,639	5,254	1.4
Kansas	299,083	5,564	1.9
Kentucky	424,678	11,109	2.6
Louisiana	371,872	16,090	4.3
Maine	167,240	7,908	4.7
Maryland	515,455	28,247	5.5
Massachusetts	695,199	30,165	4.3
Michigan	1,103,565	10,930	1.0
Minnesota	537,792	11,206	2.1
Mississippi	296,755	5,906	2.0
Missouri	663,590	18,832	2.8
Montana	111,990	3,188	2.8
Nebraska	194,403	3,376	1.7
Nevada	240,460	11,401	4.7
New Hampshire	148,322	3,959	2.7
New Jersey	948,401	13,621	1.4
New Mexico	192,565	7,362	3.8
New York	2,001,974	19,854	1.0
North Carolina	970,774	16,321	1.7
North Dakota	73,133	1,641	2.2
Ohio	1,220,222	64,752	5.3
Oklahoma	394,760	11,068	2.8
Oregon	424,170	8,788	2.1
Pennsylvania	1,571,817	21,284	1.4
Rhode Island	128,410	2,757	2.1

(Continued)

Table 4.
Continued

State or area	Total number of retired workers receiving benefits [a]	Number of retired workers affected by WEP	Percentage of total affected by WEP
South Carolina	489,743	10,075	2.1
South Dakota	94,207	2,437	2.6
Tennessee	659,946	11,371	1.7
Texas	1,807,535	73,749	4.1
Utah	182,948	7,607	4.2
Vermont	73,887	1,559	2.1
Virginia	725,945	29,325	4.0
Washington	631,195	16,486	2.6
West Virginia	212,985	3,762	1.8
Wisconsin	649,341	7,418	1.1
Wyoming	55,007	1,483	2.7
Outlying areas and foreign countries	645,263	40,696	6.3

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

a. Includes two special age-72 beneficiaries. Special age-72 beneficiaries are persons who attained age 72 before 1972 and do not qualify for retired-worker benefits.

Table 5.
Number and percentage distribution of retired and disabled workers in current-payment status with benefits affected by the WEP, by source of noncovered pension, December 2006

Source of noncovered pension	Total		Retired workers		Disabled workers	
	Number	Percent	Number	Percent	Number	Percent
Total	892,157	100.0	878,099	100.0	14,058	100.0
Federal government	434,525	48.7	428,690	48.8	5,835	41.5
State and local government	323,645	36.3	318,346	36.3	5,299	37.7
Other	117,951	13.2	115,770	13.2	2,181	15.5
Not available	16,036	1.8	15,293	1.7	743	5.3

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

Table 6.

Number and percentage distribution of retired and disabled workers affected by the WEP, by sex and years of substantial covered earnings, in current-payment status, at end of December 2006

Years of substantial covered earnings	Total	Retired workers	Disabled workers	Men	Women
		Number of beneficiaries			
Total	892,157	878,099	14,058	579,202	312,955
Less than 21	654,428	644,553	9,875	413,665	242,427
21 or more	164,848	162,331	2,517	130,151	34,697
21	25,586	25,210	376	19,885	5,701
22	23,966	23,617	349	19,034	4,932
23	21,981	21,637	344	17,433	4,548
24	19,822	19,516	306	15,711	4,111
25	17,518	17,236	282	13,834	3,684
26	16,043	15,787	256	12,624	3,419
27	14,269	14,049	220	11,313	2,956
28	12,900	12,700	200	10,179	2,721
29	12,763	12,579	184	10,138	2,625
Not available	72,881	71,215	1,666	35,386	35,831
		Percentage distribution			
Total	100.0	100.0	100.0	100.0	100.0
Less than 21	73.4	73.4	70.2	71.4	77.5
21 or more	18.5	18.5	17.9	22.5	11.1
21	2.9	2.9	2.7	3.4	1.8
22	2.7	2.7	2.5	3.3	1.6
23	2.5	2.5	2.4	3.0	1.5
24	2.2	2.2	2.2	2.7	1.3
25	2.0	2.0	2.0	2.4	1.2
26	1.8	1.8	1.8	2.2	1.1
27	1.6	1.6	1.6	2.0	0.9
28	1.4	1.4	1.4	1.8	0.9
29	1.4	1.4	1.3	1.8	0.8
Not available	8.2	8.1	11.9	6.1	11.4

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

Table 7.

Number of retired and disabled workers affected by the WEP who became entitled to benefits in 2004–2006, by type of benefit, sex, and monthly noncovered pension amount, in current-payment status, at end of December 2006

Monthly noncovered pension amount (dollars)	Total	Retired workers	Disabled workers	Men	Women
Number of beneficiaries					
Total	123,374	119,593	3,781	80,558	42,816
Less than 1,000.00	20,584	19,673	911	6,680	13,904
1,000.00–1,999.90	35,988	34,383	1,605	21,243	14,745
2,000.00–2,999.90	31,291	30,467	824	23,154	8,137
3,000.00–3,999.90	17,787	17,560	227	14,309	3,478
4,000.00–4,999.90	9,325	9,223	102	8,005	1,320
5,000.00–5,999.90	4,367	4,340	27	3,838	529
6,000.00 or more	3,028	3,011	17	2,737	291
Not available	1,004	936	68	592	412
Percentage distribution					
Total	100.0	100.0	100.0	100.0	100.0
Less than 1,000.00	16.7	16.4	24.1	8.3	32.5
1,000.00–1,999.90	29.2	28.8	42.4	26.4	34.4
2,000.00–2,999.90	25.4	25.5	21.8	28.7	19.0
3,000.00–3,999.90	14.4	14.7	6.0	17.8	8.1
4,000.00–4,999.90	7.6	7.7	2.7	9.9	3.1
5,000.00–5,999.90	3.5	3.6	0.7	4.8	1.2
6,000.00 or more	2.5	2.5	0.4	3.4	0.7
Not available	0.8	0.8	1.8	0.7	1.0

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTE: WEP = Windfall Elimination Provision.

Table 8.
Number and percentage distribution of retired workers affected by the WEP who became entitled to benefits in 2004–2006 with noncovered pension amount available, by sex, monthly noncovered pension amount, and PIA, in current-payment status, at end of December 2006

Monthly noncovered pension amount (dollars)	Total	PIA after application of WEP (dollars)		
		Less than 300.00	300.00–599.90	600.00 or more
Number of beneficiaries				
Total, pension amount available	118,657	43,493	47,012	28,152
Less than 1,000.00	19,673	5,022	6,840	7,811
1,000.00–1,999.90	34,383	12,008	13,610	8,765
2,000.00–2,999.00	30,467	12,130	12,718	5,619
3,000.00–3,999.90	17,560	7,319	7,218	3,023
4,000.00–4,999.00	9,223	4,020	3,711	1,492
5,000.00–5,999.00	4,340	1,792	1,757	791
6,000.00 or more	3,011	1,202	1,158	651
Men, pension amount available	77,422	25,430	32,960	19,032
Less than 1,000.00	6,282	712	1,913	3,657
1,000.00–1,999.90	20,092	4,873	8,953	6,266
2,000.00–2,999.00	22,476	8,187	10,078	4,211
3,000.00–3,999.90	14,122	5,640	6,050	2,432
4,000.00–4,999.00	7,912	3,351	3,309	1,252
5,000.00–5,999.00	3,815	1,574	1,576	665
6,000.00 or more	2,723	1,093	1,081	549
Women, pension amount available	41,235	18,063	14,052	9,120
Less than 1,000.00	13,391	4,310	4,927	4,154
1,000.00–1,999.90	14,291	7,135	4,657	2,499
2,000.00–2,999.00	7,991	3,943	2,640	1,408
3,000.00–3,999.90	3,438	1,679	1,168	591
4,000.00–4,999.00	1,311	669	402	240
5,000.00–5,999.00	525	218	181	126
6,000.00 or more	288	109	77	102

(Continued)

Table 8.
Continued

Monthly noncovered pension amount (dollars)	Total	PIA after application of WEP (dollars)		
		Less than 300.00	300.00–599.90	600.00 or more
Percentage distribution				
Total, pension amount available	100.0	36.7	39.6	23.7
Less than 1,000.00	100.0	25.5	34.8	39.7
1,000.00–1,999.90	100.0	34.9	39.6	25.5
2,000.00–2,999.00	100.0	39.8	41.7	18.4
3,000.00–3,999.90	100.0	41.7	41.1	17.2
4,000.00–4,999.00	100.0	43.6	40.2	16.2
5,000.00–5,999.00	100.0	41.3	40.5	18.2
6,000.00 or more	100.0	39.9	38.5	21.6
Men, pension amount available	100.0	32.8	42.6	24.6
Less than 1,000.00	100.0	11.3	30.5	58.2
1,000.00–1,999.90	100.0	24.3	44.6	31.2
2,000.00–2,999.00	100.0	36.4	44.8	18.7
3,000.00–3,999.90	100.0	39.9	42.8	17.2
4,000.00–4,999.00	100.0	42.4	41.8	15.8
5,000.00–5,999.00	100.0	41.3	41.3	17.4
6,000.00 or more	100.0	40.1	39.7	20.2
Women, pension amount available	100.0	43.8	34.1	22.1
Less than 1,000.00	100.0	32.2	36.8	31.0
1,000.00–1,999.90	100.0	49.9	32.6	17.5
2,000.00–2,999.00	100.0	49.3	33.0	17.6
3,000.00–3,999.90	100.0	48.8	34.0	17.2
4,000.00–4,999.00	100.0	51.0	30.7	18.3
5,000.00–5,999.00	100.0	41.5	34.5	24.0
6,000.00 or more	100.0	37.8	26.7	35.4

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTES: WEP = Windfall Elimination Provision; PIA = primary insurance amount.

Table 9.
Number of retired-worker beneficiaries affected by the WEP and average PIA before and after application of the WEP, by sex and age, in current-payment status, December 2006

Sex and age	Number of beneficiaries	Estimated average PIA before application of WEP (dollars)	Average PIA after application of WEP (dollars)	Estimated Average reduction due to WEP (dollars)
Retired workers, total	769,144	706.20	460.30	245.90
62–64	101,832	730.90	457.70	273.20
65–69	302,827	742.50	479.60	262.90
70–74	246,845	676.90	442.10	234.80
75–79	100,949	652.90	436.90	216.00
80 or older	16,691	655.30	536.40	118.90
Men, total	513,885	747.70	493.00	254.70
62–64	67,047	760.20	472.60	287.60
65–69	201,866	784.20	511.60	272.60
70–74	169,751	715.20	475.20	240.00
75–79	66,057	706.20	484.40	221.80
80 or older	9,164	750.70	621.70	129.00
Women, total	255,259	622.90	394.50	228.40
62–64	34,785	674.50	428.80	245.70
65–69	100,961	659.00	415.40	243.60
70–74	77,094	592.60	369.30	223.30
75–79	34,892	552.10	346.90	205.20
80 or older	7,527	539.10	432.50	106.60

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTES: These figures exclude cases where pension amount is not available, or if benefit amount includes earnings prior to 1951 and differ somewhat from figures shown in Table 11.

WEP = Windfall Elimination Provision; PIA = primary insurance amount.

Table 10.
Number of disabled-worker beneficiaries affected by the WEP and average PIA before and after application of the WEP, by sex and age, in current-payment status, December 2006

Sex and age	Number of beneficiaries	Estimated average PIA before application of WEP (dollars)	Average PIA after application of WEP (dollars)	Estimated average reduction due to WEP (dollars)
Disabled workers, total	11,636	882.40	620.40	262.00
Under 50	599	988.50	717.30	271.20
50–54	965	945.60	680.70	264.90
55–59	3,251	913.50	645.10	268.40
60 or older	6,821	849.30	591.60	257.70
Men, total	7,763	903.40	627.90	275.50
Under 50	347	1,016.70	728.40	288.30
50–54	573	987.50	715.30	272.20
55–59	2,220	928.80	649.20	279.60
60 or older	4,623	872.20	599.30	272.90
Women, total	3,873	840.30	605.30	235.00
Under 50	252	949.80	701.90	247.90
50–54	392	884.30	630.10	254.20
55–59	1,031	880.40	636.30	244.10
60 or older	2,198	801.10	575.30	225.80

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTES: These figures exclude cases where pension amount is not available, or if benefit amount includes earnings prior to 1951.
WEP = Windfall Elimination Provision; PIA = primary insurance amount.

Table 11.

Number of retired-worker beneficiaries affected by the WEP, average PIA, and average monthly benefit, by sex and age, in current-payment status, December 2006

Sex and age	Number of beneficiaries	Average primary insurance amount after application of WEP (dollars)	Average monthly benefit (dollars)
Retired workers, total	878,099	461.50	430.60
62–64	119,806	458.20	361.00
65–69	327,743	484.10	440.30
70–74	276,263	443.20	428.10
75–79	128,245	432.80	448.50
80 or older	26,042	527.70	567.10
Men, total	570,000	499.80	443.00
62–64	78,185	473.40	364.30
65–69	215,002	519.60	457.30
70–74	184,468	481.80	440.30
75–79	79,306	491.40	461.60
80 or older	13,039	636.00	606.80
Women, total	308,099	390.80	407.50
62–64	41,621	429.60	354.90
65–69	112,741	416.40	407.90
70–74	91,795	365.80	403.50
75–79	48,939	337.90	427.40
80 or older	13,003	419.20	527.20

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTES: These figures are for all retired workers affected by the WEP, and differ somewhat from those shown in table 9.

WEP = Windfall Elimination Provision; PIA = primary insurance amount.

Table 12.
Number of dually entitled retired-worker beneficiaries affected by the WEP, average PIA, average monthly benefit, and average PIA for the secondary benefit, by sex, in current-payment status, December 2006

Type of secondary benefit for dually entitled	Number of beneficiaries	Average PIA for retired-worker benefit after application of WEP (dollars)	Average monthly benefit (dollars)	Average PIA for secondary benefit (dollars)
Retired workers, total	53,520	359.90	662.10	1,406.80
Spouses	29,906	351.00	532.10	1,517.60
Widow(er)s	23,614	371.10	626.60	1,266.60
Men, Total	2,431	420.90	616.20	1,129.50
Spouses	1,366	347.20	504.40	1,188.40
Widow(er)s	1,065	515.50	759.50	1,054.10
Women, total	51,089	357.00	664.20	1,420.00
Spouses	28,540	351.20	533.50	1,533.40
Widow(er)s	22,549	364.30	829.80	1,276.60

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTES: WEP = Windfall Elimination Provision; PIA = primary insurance amount.

An Overview of the Railroad Retirement Program

by Kevin Whitman

The author is with the Office of Retirement and Disability Policy, Social Security Administration.

Summary

In the 1930s, amidst concern about the ability of existing pension programs to provide former railroad workers with adequate assistance in old age, Congress established a national Railroad Retirement system. This system is primarily administered by the Railroad Retirement Board (RRB), which is an independent federal agency charged with providing benefits to eligible employees of the railroad industry and their families. Today, the Railroad Retirement program is closely tied to the far better-known Social Security program, and although the Railroad Retirement program and Social Security share a number of common elements, key differences also exist between the two in areas such as funding and benefit structure. This article aims to increase awareness and understanding of the Railroad Retirement program and its relationship with Social Security by examining the parallel development of these two retirement programs while illuminating areas where the two diverge. The history of the Railroad Retirement program, the benefits provided by the program, and RRB's financial operations are reviewed, using elements of the Social Security system as points of reference.

Historical Synopsis of the Railroad Retirement Program

The initiative for establishing a separate federal retirement program for railroad workers arose during the late 1920s as a response to the myriad problems facing the railroad industry's private pension plans. During this period, more than 80 percent of railroad workers were employed by companies with existing pension plans, but the benefits provided by these plans were generally inadequate, liable to capricious termination, and of little assistance to disabled employees. When the Great Depression drove the already unstable railroad pension system into a state of crisis, the railroad industry was beset by retirees who needed immediate assistance. However, the planned Social Security system would not cover work performed before 1937 and was not scheduled to begin paying benefits for several years (RRB 2006d).

Federal Railroad Retirement legislation was first enacted in 1934, with the passage of the Railroad Retirement Act. However, the legislation was declared unconstitutional by the Supreme Court based on concerns about violations of due process and the widespread power the act would implicitly provide to Congress to regulate interstate commerce (Roberts 1935). In 1935, Congress again attempted to introduce a national Railroad Retirement system through the Railroad Retirement and Carriers' Taxing Acts. The legislation passed, but again faced legal challenges, as a federal district court declared that neither railroad employees nor employers could be compelled to pay industry-specific retirement taxes. Nevertheless, as the court's decision did not preclude the payment of benefits, in July of 1936 RRB began pay-

ing annuities with the expectation that future legislation would resolve the remaining legal issues (RRB 2006d).

The revised Railroad Retirement and Carriers' Taxing Acts were formulated and passed in 1937, establishing a national Railroad Retirement program. Almost 50,000 private railroad pensions were transferred into the system, which covered employees for retirement and disability. Initially, disability regulations were extremely stringent, and minimal benefits were provided for spouses or dependents of deceased workers. The program was financed with a tax of 2.75 percent, paid by both the employer and the employee on the first $300 of monthly income (RRB 2006d).

In 1938, the program introduced unemployment benefits because existing state-based unemployment insurance programs did not effectively assist railroad workers who frequently crossed state lines while working. Amendments to the program in 1946 further expanded the scope of the Railroad Retirement system to include survivor benefits, sickness benefits, and occupational disability benefits. Spousal benefits were added in 1951 (RRB 2006d). The Railroad Retirement program's transition from a pension system for workers to a more comprehensive family social insurance program was akin to that which occurred in Social Security during the same period (Martin and Weaver 2005).

A financial interchange between the Railroad Retirement and Social Security programs was established by a provision of the 1951 amendments to the Railroad Retirement Act. The interchange was designed to allow the Social Security Trust Funds to operate as if railroad employees were covered under Social Security rather than their own system. The interchange provided Social Security with the tax revenues that would otherwise be collected directly from railroad workers, while Social Security provided to RRB the funds that would otherwise be paid directly to railroad beneficiaries (RRB 2006d).

The interchange was made retroactive to 1937 and resulted in the railroad system initially owing Social Security $488.2 million to account for previous tax payments to RRB that would have to be added to Social Security's Trust Funds (RRB 2006d). However, no legal mechanism existed for this amount to be transferred from RRB to Social Security, and only interest was paid on this amount, less any offsets in favor of RRB (Board of Trustees 1959). Since 1959,

the transfers between the two programs have favored the railroad program.[1] The two primary factors in shifting the direction of the transfers from Social Security to RRB have been the growth of Social Security benefits and the decline in the railroad workforce, which has lowered tax receipts (RRB 2006d). The flows into and out of the Social Security Trust Funds as a result of the interchange are tabulated below for selected fiscal years:

Fiscal Year	Inflow/Outflow (dollars)
1954	11,595,000
1955	9,551,000
1956	7,439,000
1957	5,220,000
1958	1,588,000
1959	-124,441,000
1960	-600,437,000
1970	-589,257,000
1980	-1,429,879,000
1990	-3,049,144,000
2000	-3,697,579,000
2006	-3,846,311,000

SOURCES: Social Security Administration Office of the Chief Actuary and Annual Reports of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds. See http://www.ssa.gov/history/reports/trust/trustreports.html.

In 1965, the relationship between Social Security and Railroad Retirement was further strengthened by a provision to coordinate the tax rates used for both programs, allowing Medicare to easily expand to cover those in the railroad program (RRB 2006d).

In the following years, substantial benefit increases in Social Security and the railroad program, largely caused by inflation, raised the specter of insolvency. In response, Congress appointed a Commission on Railroad Retirement to formulate possible solutions (RRB 2006d). The Commission released its report in 1972, and following the general recommendations put forth, Congress enacted the Railroad Retirement Act of 1974. This legislation introduced a number of considerable changes to the program, such as splitting benefits into two tiers. The new Tier I benefit was designed to be equivalent to the annuity that would be offered by Social Security, while Tier II was structured to provide additional benefits comparable to private, multiemployer pension plans. In addition, the Tier I benefit was constructed in such a way that the annuity was reduced by any Social Security payments a beneficiary received, to prevent payment of dual benefits

to railroad workers who also accrued sufficient time in jobs covered by Social Security. This dual-beneficiary arrangement was considered both unfair and financially untenable, with RRB incurring an interchange cost of roughly $450 million annually while it was in effect (RRB 2006d). The new provision was phased in gradually for those in or close to retirement, and the additional amount provided for this group of retirees was known as the vested dual benefit. The number of dually vested beneficiaries has decreased with time; as of September 30, 2007, RRB listed only 39,998 people in current payment status for this benefit (RRB 2008e).

Further reforms were made in 1981, after inflation and poor economic conditions negatively affected the railroad retirement system's financial position. These changes included increasing the Tier II tax rate and giving RRB the authority to borrow from the general fund of the U.S. Treasury to ensure an adequate cash flow during the time lag in the financial interchange.[2] The legislation also instituted nonrevenue-directed provisions, such as extending benefits to divorced spouses under the same conditions as those that apply under Social Security. However, as railroad employment fell precipitously in the face of a recession, these reforms ultimately proved insufficient to solve the financial problems confronting the program (RRB 2006d).

The Railroad Retirement Solvency Act of 1983 was enacted to deal with the crisis and was in many ways similar to contemporary legislation for Social Security, which faced its own severe financial difficulties (RRB 2006d). The act included provisions making Tier II benefits subject to the same federal income tax rules that applied to private pensions, reducing Tier I benefits for certain workers if retirement occurred between ages 60 and 62 (this was later repealed by 2001 legislation), establishing a 5-month waiting period for disability benefits, and limiting the retroactivity of retirement benefits to 6 months (RRB 2006d). Additionally, as a result of the Social Security legislation passed at the same time, Tier I benefits became subject to federal income tax under the same rules that applied to Social Security benefits.

Although minor changes were made to the program throughout the latter half of the 1980s and 1990s, the next significant modification of the system came with the passage of the Railroad Retirement and Survivors' Improvement Act of 2001. The act eliminated the benefit reduction for fully vested workers who retired between ages 60 and 62 (though not retroactively); removed the maximum cap on combined employee

and spouse benefits; and lowered the basic service requirement so that, effective January 1, 2002, workers become vested in the Railroad Retirement program with at least 5 years of service in the railroad industry, all accruing after December 31, 1995. The law also provided an initial temporary supplemental annuity for widows or widowers equal to 50 percent of the deceased spouse's Tier II benefit,[3] reduced the Tier II tax rate on employers and unions serving as employers, and allowed the investment of funds from the Railroad Retirement Accounts into nongovernmental assets (RRB 2006d).[4] The investment element of the program is discussed in more detail later in this article.

Today, RRB remains an independent federal agency, headquartered in Chicago, Illinois. Much like the Social Security Administration (SSA), the agency interacts with recipients through field offices throughout the United States. There are currently over 50 offices providing services (although not every state is represented), and locations in northern border states also serve Canadian citizens who work on U.S. railroads. The agency also maintains a legislative affairs office in Washington, DC (RRB 2006d).[5]

The following sections provide a summary of RRB's current benefit structure, financing, and beneficiary population.

Railroad Retirement Benefits

Both RRB and Social Security offer retirement, disability, spousal, and survivor benefits that are generally calculated in the same manner. However, the benefits provided by each program are not identical. For example, RRB offers unique unemployment and sickness benefits, as well as Tier II benefits that resemble private pensions.[6] RRB's benefits are discussed below but this analysis is not meant to be a comprehensive description of every aspect of Railroad Retirement program benefit structure and calculation methodology. Instead, this section provides a useful overview. For readers interested in greater detail about RRB benefits or programs, the agency offers numerous publications in print and on its Web site.

Tier I Benefits

The Tier I benefits that RRB provides for its beneficiaries are designed to take the place of Social Security. Consequently, benefits under the two programs exhibit considerable similarities. It is worth emphasizing that some workers who have paid Railroad Retirement taxes will not receive benefits through the Railroad Retirement program. Workers with fewer than 10 years

of service in positions subject to railroad specific taxes, or fewer than 5 years after 1995, are not vested under the Railroad Retirement program and have their accounts transferred into Social Security. All survivor claims with railroad involvement require a determination of jurisdiction (jurisdiction in this sense refers to the agency that is responsible for administering the benefit). RRB has jurisdiction if the deceased worker met the aforementioned vesting requirements for time in railroad service and was employed in a railroad industry job covered by RRB until retirement or death. If these conditions are not met, RRB awards jurisdiction to SSA (RRB 2007c).[7]

Retirement Benefits. By design, Tier I retirement benefits are generally calculated to mimic comparable Social Security benefits, and employ the same benefit formula, based on the highest 35 years of indexed earnings.[8] To be eligible for aged retirement benefits through RRB, a worker must have worked at least 10 years in covered service for the railroad industry, or at least 5 years after 1995.[9] Credit for a month's service is recorded if any time during the month was spent in railroad employment, even as little as one day (RRB 2006c). As with Social Security, Railroad Retirement benefits are generally first payable at age 62, with the full retirement age ranging from 65 to 67, depending on a recipient's year of birth. Benefit reductions for early retirement between age 62 and the full retirement age for those with less than 30 years of service are the same as those for Social Security (RRB 2007b). A retirement earnings test also applies to Railroad Retirement benefits prior to the full retirement age, and is calculated using the same thresholds and reductions as the Social Security test.[10]

However, retirement benefits under RRB differ from Social Security in two critical ways. First, early retirement reductions do not apply if the worker has at least 30 years of service in RRB-covered employment. In these cases, an individual can begin receiving benefits as early as age 60 with no age-based reduction. Second, a supplemental annuity is payable if an employee had at least 25 years of service which began before October 1, 1981, and has a current connection to the railroad. Eligibility for this annuity begins at age 60 if the employee has at least 30 years of creditable service, and at age 65 if the employee has 25 to 29 years of service. The fixed maximum amount of a supplemental annuity is $43 a month (RRB 2007b).

Disability Benefits. RRB and Social Security both use the same definition of total disability, and the same formula to calculate the disability annuity. The annuity

for total and permanent disability is payable under the full retirement age for any employee with at least 10 years of railroad service, or with 5 years of service after 1995—as long as the individual's combined credits for work under Social Security and the Railroad Retirement program meet the eligibility requirements for Social Security disability benefits. In addition, the substantial gainful activity (SGA) amount that may disqualify a person from receiving a total disability annuity is the same as the one used in Social Security and is wage-indexed annually.[11]

In addition to the total disability benefit, RRB offers an occupational disability benefit that does not exist under Social Security. Whereas total disability refers to a limitation that prevents regular employment in any job, the occupational disability benefit covers disabilities preventing work in an individual's regular railroad position (that is, the occupational disability annuity is payable to disabled workers who cannot perform his or her regular duties, even if he or she could perform another job). This annuity is payable at any age to workers with at least 20 years of service and a current connection to the railroad industry and to workers between age 60 and the full retirement age with at least 10 years of service and a current connection to the railroad industry (RRB 2007b). The occupational disability annuity is calculated in the same manner as the total disability annuity.

Spousal Benefits. Tier I benefits are also provided to spouses of employees qualifying for Railroad Retirement benefits. These spousal annuities are initially computed to equal half of the worker's unreduced Tier I benefit, but can be reduced based on applicable factors such as early receipt. To be eligible based on a current marriage, the marriage generally must be at least 1 year old or the couple must have conceived a child and the spouse must cease any employment covered by RRB (RRB 2006c). Spousal payments are subject to the same age and service rules as retirement benefits; however, for spouses of employees with less than 30 years of service, reductions are generally slightly larger than those applied to workers' retirement benefits (RRB 2006c).[12] Consistent with Social Security, a spouse can also receive benefits at any age if he or she is caring for a child under age 16 or a child who became disabled prior to age 22. Divorced spouses are eligible for Tier I spousal benefits under the same conditions as those that apply to Social Security.

Survivor Benefits. Tier I survivor benefits are generally computed to match the Social Security

benefit that would be received under similar circumstances. For survivors to be eligible for benefits from RRB, the deceased employee must have at least 10 years of covered service, or 5 years of covered service after 1995, and had a current connection to the railroad at the time of retirement or death. If these conditions are not met, the credits for work earned in RRB-covered employment used in computing survivor benefits are transferred to Social Security (RRB 2007c).

As with Social Security, RRB survivor benefits can be paid to widows, widowers, divorced spouses, dependent parents, and children who are under age 18, 18–19 years old and a full-time student (12th grade or below), or disabled prior to age 22. Dependent grandchildren are also eligible for benefits if both parents are disabled or deceased (RRB 2007c). The percentage of the deceased worker's Tier I benefit that survivors can receive varies depending on the type of survivor. The maximum survivor benefit per family under Social Security also applies to RRB survivor benefits (RRB 2006b).

Surviving divorced spouses are eligible to receive benefits if the marriage lasted at least 10 years, up to the Tier I amount (RRB 2006c). Surviving divorced spouses can also receive a payment for dependent children under age 16, or for a child in their care who became disabled prior to age 22 (in such cases, the length-of-marriage rule does not apply). To be eligible for widow or widower benefits, the recipient must not have remarried, unless the remarriage occurred after age 60, or after age 50 if disabled before the remarriage (RRB 2007c).

An important distinction between Social Security and RRB benefits is that, as noted above, children can only receive railroad benefits if the parent is deceased. Under Social Security, children of retired or disabled annuitants can also receive benefits. However, the families of workers covered by the Railroad Retirement program do not receive less in benefits than if they were under Social Security, because RRB includes a special minimum guaranty provision. The provision increases the employee's benefit to account for any differences between the total benefits a Railroad Retirement worker's family is receiving and those a family with the same circumstances would receive through Social Security (RRB 2006c).

Unemployment and Sickness Benefits. RRB also provides recipients with benefits in cases of unemployment or sickness. Analogous benefits do not exist under Social Security, and railroad employers pay an additional tax dedicated to this purpose (RRB 2006d). For 2008, an employee must have earned at least $3,075 in 2007—with no more than $1,230 counted in a single month—to receive unemployment or sickness benefits. Additionally, for new employees to be eligible for these benefits, they must also have at least 5 months of creditable service.[13] The maximum benefit amount for the benefit year beginning July 2008 is $61 a day, and is payable for up to 130 days in this period (a benefit year runs from July 1st to June 30th). The amount received in sickness benefits varies depending on the physical location where the sickness or injury occurred. Sickness benefits arising from an injury that occurred on the job are not reduced from the $61 daily maximum, but sickness benefits that fall outside this category are subject to the Tier I tax of 7.65 percent for the first 6 months following the last date of employment.[14] With unemployment and sickness benefits, exhausting eligibility for one type does not affect eligibility for the other, so each benefit is generally payable for up to 26 weeks a year; however, benefits can be paid beyond 26 weeks in certain situations for employees with over 10 years of covered employment. Unemployment benefits are subject to an earnings test that suspends payment if a certain income threshold is met or exceeded during any 2-week benefit period. For benefit year 2008, this earnings test amount is $1,230 (RRB 2007d).

Tier II Benefits

The most obvious difference between the benefits that the Railroad Retirement program and Social Security provide is the additional Tier II benefit available for railroad workers. As noted previously, the Tier II benefit is designed to resemble a comparable private defined benefit pension.

Tier II benefits are calculated by computing average monthly earnings (up to the annual Tier II taxable maximum—$75,900 in 2008) for an employee's 60 months of highest earnings. That figure is then multiplied by seven-tenths of 1 percent, and then again by the number of years spent in railroad employment. Tier II benefits generally have the same age restrictions as those for Tier I. The Tier II benefit is also reduced by 25 percent for dually vested beneficiaries (RRB 2008b).[15] As with Tier I benefits, Tier II benefits have cost of living adjustments. Tier II benefits increase annually by 32.5 percent of any increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers, known as the CPI-W (RRB 2006c).

In addition to workers, Tier II benefits are provided to current spouses and survivors, while divorced spouses can only receive these benefits as part of a property settlement. Tier II spousal benefits are equal to 45 percent of the employee's Tier II benefits, while Tier II survivor benefits vary depending on the type of survivor (RRB 2007b).

Stylized Worker Comparison

The example of a hypothetical worker is useful to illustrate how Tier I and Tier II components compare with Social Security using a scaled medium earner. A scaled earner, as constructed by Social Security's Office of the Chief Actuary, is a stylized worker designed to reflect the changes in earnings that occur over a person's lifetime. For example, an individual's earnings generally begin at age 21, at a point lower than the average earnings seen in the overall economy. Earnings, relative to the economy-wide average, then rise steadily before reaching a plateau in middle age and ultimately declining in the final years prior to retirement. The scaled medium earnings profile is more realistic than a steady medium earner assumed to earn the average wage in each year he or she is employed (SSA 2005).

A scaled medium earner born in 1943 and retiring at the full retirement age of 66 in 2009 would receive an annual Social Security benefit of $17,208, or $1,434 per month. Were the same hypothetical worker employed in positions covered under the Railroad Retirement program from age 21–65, his or her total annual benefit would be $26,736 (or $2,228 per month), the combination of an annual Tier I benefit of $17,208 and a Tier II benefit of $9,528. This example assumes the worker did not claim benefits until age 66, even though under RRB rules, an individual with 30 years or more of covered employment can, in certain situations, retire as early as age 60 without any age-based reduction in benefits.

Were the hypothetical worker to spend part of his or her career in employment covered under Social Security and part covered under the Railroad Retirement program, the benefits received could be affected, based on which years were spent working under each program. If the second part of this worker's career (age 44–65) was spent under Railroad Retirement, the annual Tier I benefit would still be $17,208 and the Tier II benefit would be $4,656. This worker's Tier II amount is lower because of the shorter period spent in railroad employment. If the first part of the worker's career (age 22–43) was spent in RRB-covered employment, the annual Tier I benefit would remain at $17,208 but the Tier II benefit would fall to $2,484.[16] This lower Tier II benefit results from the combined effect of the lower value of the highest 5 years of earnings in employment covered by the Railroad Retirement program and the shorter time working in the industry.[17]

A real worker's earning history and benefit amounts could vary substantially from this example, but the scaled medium earner profile provides an indication of how overall benefits can change based on individual circumstances (although Tier I benefits remain the same in the cases discussed here). This example also demonstrates how Social Security and Railroad Retirement benefits can differ, despite the programs' similarity. When analyzing the difference that the Tier II pension can make in the amount of monthly benefits received, it should be noted that many workers covered under Social Security would have their own private defined benefit or defined contributions pensions, which are not included in this example.

System Financing

The various benefits paid by RRB, as well as its modest administrative expenditures, are financed primarily by taxes. The 2008 employee tax rates for Tier I and Tier II benefits are 6.20 percent and 3.90 percent, respectively (RRB 2007b). The maximum taxable wage base in 2008 for Tier I benefits is $102,000, the same as for Social Security, and $75,900 for Tier II benefits. Employees also pay 1.45 percent of all earnings for Medicare; and, as with Social Security, there is no cap for the taxes paid to cover Medicare among Railroad Retirement program participants. A worker earning $102,000 in 2008 would pay $10,763.10 in combined taxes for Tier I, Tier II, and Medicare (RRB 2008d).

Taxes are also levied on employers. Covered employers are those railroad companies that are engaged in interstate commerce, their related subsidiaries, railroad associations, and railroad labor organizations (RRB 2006c). The 2008 tax rate for employers is 6.20 percent for Tier I benefits, 1.45 percent for Medicare, and 12.10 percent for Tier II benefits (RRB 2008d). The Tier I employer tax rate is tied to Social Security, but the Tier II tax rate can fluctuate significantly based on RRB asset levels (RRB 2005b). In 2008, an employer would pay $16,986.90 for an employee making $102,000, the maximum amount subject to the payroll tax (RRB 2008d).[18]

The National Railroad Retirement Investment Trust

One unique aspect of the Railroad Retirement system is the private investment of some of its funds through the National Railroad Retirement Investment Trust (NRRIT). The trust is an independent organization, separate from the federal government. It is run by a board of trustees composed of three members selected by rail labor, three members selected by rail management, and an independent member selected by the other trustees (RRB 2007a). In fiscal year 2007, the NRRIT transferred $1.39 billion to the Treasury for payment of benefit obligations (NRRIT 2007).

The program's investments are diversified among a variety of asset classes. The NRRIT's investment guidelines are frequently reexamined and adjusted, but the targeted investment allocations for the NRRIT in fiscal year 2007 are:

U.S. Equity………………….	40 percent
Non-U.S. Equity………….....	28 percent
U.S. Fixed Income…………	21 percent
Non-U.S. Fixed Income……..	7 percent
Convertibles………………….	2 percent
Cash…..…………………….	2 percent

In fiscal year 2007, the net rate of return on assets managed by the NRRIT was 16.38 percent, compared with the 5.3 percent return experienced by the Social Security Trust Fund—which is limited to investments in federal securities—during calendar year 2007 (Board of Trustees 2008).

Although this type of return is not guaranteed, the NRRIT has developed safeguards to help ensure solvency when market returns are lower than expected for an extended time. This is done by maintaining reserve funds sufficient to pay 4 to 6 years' worth of benefits. Additionally, as discussed previously, the Tier II tax rate for employers is variable, increasing whenever the reserve funds fall below the 4 to 6 year threshold (RRB 2005a).

The Future Funding Outlook

According to RRB reports to Congress, the financial outlook for RRB remains stable for the next 25 years. However, the decline in railroad employment is a potential concern. The number of individuals in RRB-covered employment fell from 640,000 in 1970 to 236,000 in 2007, a shift that presents a sizable demographic obstacle for a pay-as-you-go system. The current beneficiary-to-worker ratio for those covered

under the Railroad Retirement Act is about 2.4 to 1. However, between 2000 and 2007, railroad employment has held fairly constant in the low- to mid-two hundred thousands (RRB 2008c).

Current projections make it reasonable to expect that RRB will remain solvent, at least in the near term. Nevertheless, RRB notes "[u]nder the current financing structure, actual levels of railroad employment and investment returns over the coming years will largely determine whether corrective action is necessary" (RRB 2008c).

Current Beneficiary Statistics

The majority of the funds RRB receives in a year are used to fund benefit payments for railroad workers. In fiscal year 2007, RRB paid $9.8 billion for retirement and survivor benefits to roughly 616,000 beneficiaries. Another $27.8 million, net, went to 10,100 beneficiaries receiving unemployment benefits and $46.2 million, net, was paid to 19,500 sickness beneficiaries (RRB 2008a). RRB's most recent breakdown of beneficiaries and average payments by benefit type is provided in Table 1.[19]

Conclusion

Because of their often parallel development, the Railroad Retirement program and Social Security share a number of programmatic similarities, the most substantive of which is the coordination of RRB's Tier I benefits with Social Security benefits. At the same time, the two programs possess some noteworthy differences in terms of both benefit structure and funding. For example, RRB provides a unique Tier II benefit designed to replicate a private pension, and the agency has introduced innovative features to increase program income, such as investing a portion of its funds in equities.

As a result of the coordination between the two programs, the future of Social Security has a direct impact on RRB, and any alterations to Social Security tax rates or benefit levels will have an effect on annuitants receiving funds through RRB. Understanding the historical experience of RRB, its policy features, and its financial relationship with Social Security can help guide policymakers seeking to ensure long-term solvency for both systems.

Table 1.
Summary of Railroad Retirement Program benefits and beneficiaries

Type of benefit	Number or amount
Retirement and survivor benefits, fiscal year 2007	
Employee age annuities	
New awards	9,600
Beneficiaries at end of period	193,300
Average payment at end of period (dollars)	1,890
Employee disability annuities	
New total disability benefit awards	1,100
New occupational disability benefit awards	2,500
Total disability beneficiaries at end of period	20,300
Occupational disability beneficiaries at end of period	64,000
Average total disability payment at end of period (dollars)	1,346
Average occupational disability payment at end of period (dollars)	2,213
Supplemental employee annuities	
New awards	7,300
Beneficiaries at end of period	121,200
Average payment at end of period (dollars) [a]	42
Spouse and divorced spouse annuities	
New awards, total	10,100
Divorced spouse beneficiaries at end of period	3,500
Beneficiaries at end of period, total	137,400
Average payment to divorced spouses at end of period (dollars)	443
Average payment at end of period, all beneficiaries (dollars)	709
Survivor annuities	
New awards to aged widow(er)s	6,500
New awards, total	8,100
Aged widow(er) beneficiaries at end of period	129,400
Beneficiaries at end of period, total	160,300
Average payments as of end of period (dollars)	
Aged widow(er)s	1,173
Disabled widow(er)s	989
Widowed mothers (fathers)	1,471
Remarried widow(er)s	781
Divorced widow(er)s	773
Children	853
Lump-sum survivor benefits awarded	
Number of lump-sum death benefits	4,200
Average lump-sum death benefit (dollars)	905
Number of residual payments	< 50
Average residual payment (dollars)	2,674

(Continued)

Table 1.
Continued

Type of benefit	Number or amount
Unemployment and sickness benefits, benefit year 2006-2007	
Unemployment benefits	
Net amount paid (dollars in millions)	29.6
Beneficiaries	9,500
Number of payments	56,600
Number of normal benefit accounts exhausted	1,800
Average payment per 2-week registration period (dollars)	499
Sickness benefits	
Net amount paid (dollars in millions)	43.5
Beneficiaries	19,000
Number of payments	128,300
Number of normal benefit accounts exhausted	3,500
Average payment per 2-week registration period (dollars)	503

SOURCE: Railroad Retirement Board, 2008a.

a. Includes 300 supplemental annuities averaging $66 awarded under the 1937 Act.

Notes

[1] Prior to 1963, railroad employees were assigned a Social Security number starting with three digits ranging from 700 to 728. This was in contrast to the normal assignment of Social Security numbers based on geographic location. On July 1, 1963, the 700 series for railroad workers was discontinued and these individuals received Social Security numbers consistent with those assigned to the rest of the populace (SSA 2008).

[2] The time lag occurs because financial interchange payments are made at the end of the fiscal year in a lump sum.

[3] The new widow or widower supplemental annuity is reduced each year by the same dollar amount as the total Tier I and Tier II benefit increases resulting from cost-of-living adjustments, until the supplemental benefit reaches zero. At that point, total benefits begin to increase. A comprehensive overview of this provision of the Railroad Retirement and Survivors' Improvement Act of 2001 can be found in *Railroad Retirement Board Annuities for Widows and Widowers* (Romig 2007).

[4] The Railroad Retirement Accounts cover Tier I and Tier II benefits that exceed Social Security.

[5] Three laws constitute the railroad retirement system: the Railroad Retirement Act, the Railroad Unemployment Insurance Act, and the Railroad Retirement Tax Act. RRB administers the Railroad Retirement Act and the Railroad Unemployment Insurance Act, while the Internal Revenue Services (IRS) administers the Railroad Retirement Tax Act (RRB 2006d). The RRB is under split jurisdiction in Congress through which the Transportation and Infrastructure Committee has responsibility for railroad retirement policy, while the Committee on Ways and Means has responsibility for the revenue aspects of the program (Committee on Ways and Means 1996).

[6] Another unique characteristic of RRB's benefit structure is that to receive benefits under the Railroad Retirement Act an individual must cease all employment in RRB-covered positions.

[7] Some workers are eligible for both Social Security and RRB benefits. When this occurs, the RRB retains jurisdiction, but SSA authorizes the RRB to make payment on its behalf. In most cases, SSA certifies Social Security benefits to the RRB whenever the recipient is also eligible for an RRB annuity (SSA 2002). If a RRB recipient is eligible for, and requests, Social Security benefits, the RRB reduces the Tier I annuity to account for the Social Security benefit and in most cases, there is no change in total monthly benefit payments. The RRB cannot alter the calculated Social Security benefit amount, as these computations remain the authority of SSA, regardless of certification (SSA 2002).

[8] For an example of how Social Security benefits are calculated, see http://www.socialsecurity.gov/OACT/ProgData/retirebenefit1.html.

[9] 1995 is the cutoff for the new vesting requirements included in the Railroad Retirement and Survivors' Improvement Act of 2001.

[10] Again, any earnings from railroad employment preclude an individual from receiving retirement benefits, but benefit reductions apply to all early retirees who have non-RRB-covered earnings over a certain limit. Prior to the year when the full retirement age is attained, benefits are reduced

$1 for every $2 earned over the annual exempt amount, which in 2008 is $13,560. In the year full retirement age is attained, the reduction is $1 for every $3 earned over the annual exempt amount, which in 2008 is $36,120 (RRB 2008d). These benefit reductions are the same as those that apply under the earnings test used by Social Security. Previously, benefits could be reduced by the retirement earnings test between the full retirement age and age 70, but this provision was removed by the Senior Citizens' Freedom to Work Act of 2000.

[11] The 2008 SGA amount is $1,570 for blind individuals and $940 for nonblind individuals. However, as noted previously, in order to receive a disability annuity there can be no earnings from RRB-covered positions.

[12] A full list of the varying spousal reductions under different circumstances is available at http://www.rrb.gov/forms/PandS/rb30/rb30early.asp.

[13] There are further, distinct claiming requirements for unemployment and sickness benefits; for example, to receive unemployment benefits the employee must be able, available, and looking for work (RRB 2007d).

[14] This comprehensive Tier I tax rate of 7.65 percent includes the 1.45 percent tax rate for Medicare.

[15] For those employees who accept benefits before the full retirement age without at least 30 years of service, Tier II benefits are reduced 1/180 for every month up to 36 months that the beneficiary is under the full retirement age and then 1/240 for every month past this point (RRB 2006a). If any RRB-covered work was performed prior to August 12, 1983, Tier II benefit reductions cannot be larger than 20 percent. After 2001, once a recipient reaches age 60 or older and has 30 years of covered service, benefits are not reduced (RRB 2007b).

[16] The stylized worker is assumed to work from age 21 through 65, so the years of work cannot be divided evenly into a whole number. Thus for purposes of comparison, the examples in which the worker works either the first or second part of his or her career in RRB-covered employment assume 22 years of work (ages 22–43 or 44–65), with employment at age 21 assumed to be in a non-RRB-covered position.

[17] Under the full career in RRB-covered employment and the first half of career in RRB employment examples, the worker would have a full retirement age of 65 for Tier II benefits because of RRB-covered employment prior to August 12, 1983. However, for purposes of simplification, it is assumed that the stylized worker took both Tier I and Tier II benefits at age 66 in all of the examples.

[18] An additional amount would be charged for unemployment insurance.

[19] The unemployment benefit and sickness benefit figures reported in Table 1 are for benefit year 2006–2007. However, the unemployment benefit and sickness benefit figures cited in this paragraph are for fiscal year 2007.

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The Canadian Safety Net for the Elderly

by Michael Wiseman and Martynas Yčas

This article was written when the authors were with the Social Security Administration's (SSA's) former Office of Disability and Income Assistance Policy, currently a division in SSA's Office of Program Development and Research. Michael Wiseman is Professor of Public Policy, Public Administration, and Economics at The George Washington University, and Martynas Yčas is retired.

Summary

Recently various analysts have called attention to the apparent success of the Canadian social assistance system in reducing poverty among the elderly and have suggested that there may be lessons to be drawn from the Canadian experience that are relevant to the evolution of the U.S. Supplemental Security Income (SSI) program. This article profiles the Canadian system, compares the system to the U.S. SSI program, reviews the consequences for elderly poverty rates, assesses system costs, and then comments on pertinence of the Canadian experience to SSI policy. The Canadian minimum income guarantee for the elderly is substantially more generous than what is provided by the United States, but it is misleading to claim that the Canadian system costs only "slightly more" than the U.S. program. Such a judgment overlooks a key and costly part of the Canadian system, the Old Age Security demogrant. We estimate the total costs to Canada of providing income support for elderly persons receiving a Guaranteed Income Supplement (GIS) in 2004 to be approximately C$13.3 billion (roughly US$11.1 billion), slightly more than 1 percent of gross domestic product (GDP) and almost *fourteen times* the U.S. allocation for SSI and food stamps for elderly SSI recipients. The significance of this com-

mitment is underscored when it is recognized that in 2004 Canadian GDP per capita was just 80 percent of the U.S. level. The Canadian example suggests U.S. policymakers consider better integration of SSI with basic Social Security benefits, experimenting with alternatives to restricting SSI eligibility to individuals with very few assets, and reducing barriers to program access.

Introduction

The future of the U.S. Social Security program continues to be the focus of a public debate compelled by the system's projected insolvency. Although the outcome of the political struggle is difficult to forecast, it is likely that changes made to the Social Security system to address financing will affect the nation's "safety net," or minimum income guarantee, for elderly and disabled people—the Supplemental Security Income (SSI) program. The 2001 report of the President's Commission to Strengthen Social Security acknowledged this connection and recommended that "Social Security reform plans should also encompass reforms in SSI policy, to improve retirement incomes for those persons who might not otherwise attain poverty-level income in old age" (President's Commission 2001, 136). Since the Commission issued its report, several Social

Security reform proposals have included provisions aimed at providing a minimum guaranteed benefit for workers with low career earnings. Little has been done, however, to address the connection between a reformed Social Security system and the SSI program in providing income security for the most vulnerable of the elderly.

Recently, various analysts have called attention to the apparent success of the Canadian social assistance system in reducing poverty among the elderly and suggested that there may be lessons to be drawn from the Canadian experience that are relevant to SSI strategy. Timothy Smeeding and Susanna Sandstrom (2004) report, "Canada has managed to achieve much greater poverty reduction among seniors [than has the United States] while spending much less on social retirement programs than other rich countries (and slightly more than the United States)" (p. 11). They recommend considering the integrated Canadian social insurance/ social assistance system "as a model for future United States OASI [Old-Age and Survivors Insurance]-SSI interactions" (p. 12).

This recommendation is based on cross-national comparisons using data collected in connection with the Luxembourg Income Study (LIS).[1] An example of these data is reproduced in Table 1. Poverty for this analysis is defined as having disposable income adjusted for family size that is less than 50 percent of the national median. When applying this standard, poverty among the elderly in the United States is the worst among the seven countries listed, and Canada typically ranks first or second.[2] In particular, Smeeding and his colleagues note the apparently superior performance of the Canadian system in reducing poverty rates among elderly women living alone, a growing share of all elderly persons (Smeeding with Williamson 2001, 24; Smeeding 2006a).

This article profiles the Canadian system, compares the system to the U.S. SSI program, reviews the consequences for elderly poverty rates, assesses system costs, and then comments on pertinence of the Canadian experience to SSI policy. Our core argument is that Smeeding and his colleagues are right in judging the Canadian minimum income guarantee to be substantially more generous than what is provided by the United States, but that it is misleading to claim that the Canadian system costs only "slightly more" than the U.S. program. Such a judgment overlooks a key and costly part of the Canadian system, the Old Age Security demogrant.

Table 1.
Poverty rates among the elderly: Percentage of population aged 65 or older with income less than 50 percent of adjusted national median disposable income for all persons

Country	Year	Poverty rate
Elderly		
United States	2000	24.7
United Kingdom	1999	20.9
Germany	2000	10.1
Canada	1998	7.8
Sweden	2000	7.7
Italy	2000	13.7
Finland	2000	8.5
Elderly women		
United States	2000	28.6
United Kingdom	1999	26.2
Germany	2000	13.0
Canada	1998	9.6
Sweden	2000	10.3
Italy	2000	16.2
Finland	2000	11.8
Elderly women living alone		
United States	2000	45.5
United Kingdom	1999	40.7
Germany	2000	19.6
Canada	1998	17.7
Sweden	2000	16.5
Italy	2000	28.7
Finland	2000	21.2

SOURCE: Adapted from Smeeding and Sandstrom (2004, Table 1).

NOTE: Household incomes are adjusted to individual equivalence by dividing household income by the square root of household size. See text and Förster (2005).

Canadian Social Security and Social Assistance

Canada uses "social security" as a generic term referring to a wide range of programs dealing with health, education, unemployment, and family and child assistance, as well as old age, disability, and survivors' benefits. Programs specifically providing income support for the aged, disabled, and survivors are collectively called Canada's Public Pensions System.

The Three Components

For the elderly (persons aged 65 or older), Canada's Public Pensions System has three major components. Together they provide benefits intended to "ensure a basic income to all eligible Canadians" (Human

Resources and Social Development Canada (HRSDC) 2005b).[3]

The first component is quite similar to what is termed Social Security (the Old-Age, Survivors, and Disability Insurance program) in the United States:

- *Canada Pension Plan (CPP)/Quebec Pension Plan (QPP)* is a compulsory, earnings-related social insurance program providing income for retired and disabled workers and their survivors. Its benefit formula also contains significant flat-rate components for the disabled and survivors under the age of 65.

The second component has no close parallel in the U.S. system:

- *Old Age Security (OAS)* is a nearly universal pension financed from general revenues and paid to almost all Canadians aged 65 or older. The principal exceptions are those who do not meet residency requirements or who have very high taxable incomes.

The third component is an income-tested SSI counterpart:

- *Guaranteed Income Supplement (GIS)* is a non-taxable benefit paid to low- and moderate-income seniors—about one-third of the elderly population. It is a form of guaranteed annual income (benefits are reduced according to other income received). Like the OAS, the GIS is financed from general revenues.

The tabulation shows outlays on all three types of benefits for Canadian fiscal year 2005–2006 (the Canadian fiscal year runs from April 1 through March 31). Unless otherwise noted, the figures that follow are in Canadian dollars (C$); reducing amounts expressed in Canadian dollars by 15 percent to 20 percent gives approximate contemporary U.S. dollar equivalents.[4] Outlays on public retirement benefits in Canada amount to about 4.5 percent of gross domestic product (GDP). Although direct general comparison with the United States is difficult, the combination of OASI and federal SSI payments to the elderly in the country amounts to about 3.6 percent of GDP. What is particularly striking about the Canadian public pensions system is that almost half of benefits—OAS and GIS—is financed from general revenues. In the United States less than 2 percent of costs of publicly provided pensions for the elderly is funded from general revenues.[5]

Benefit	Expenditures
Contributory pensions	
Canada Pension Plan	24,868
Quebec Pension Plan	7,968
Total	32,836
Other benefits	
Old Age Security	23,044
Guaranteed Income Supplement	6,221
Total	29,265
Total outlays	62,101
Gross domestic product (GDP), 2005	1,372,626
Outlays as percentage of GDP	4.52

SOURCE: Human Resources and Social Development Canada (2006b) and Statistics Canada (2008).

NOTE: In 2005–2006, C$1.23 ≈ US$1.

The Canada and Quebec Pension Plans. Established in 1966, the Canada Pension Plan and Quebec Pension Plan have paid benefits since late 1967. The CPP serves all parts of Canada outside of Quebec. Its parallel plan, the QPP, was in important ways a model for the CPP and has very similar contribution and benefit provisions. Covered earnings records in both systems are merged at retirement for dual contributors to calculate a single benefit. As a result, for most purposes the two programs can be considered a single system.

The Canada Pension Plan is a form of contributory, earnings-related social insurance.[6] It pays three kinds of benefits:

1. retirement pensions;

2. disability benefits (which include benefits for disabled contributors and benefits for their dependent children); and

3. survivor benefits (which include death benefits, survivors' pensions, and children's benefits).

Only retirement pensions will be discussed here. With very few exceptions, every person in Canada aged 18 or older and aged 69 or younger with earnings must pay into the CPP. Employees and their employers each pay 4.95 percent on annual earnings between the minimum and a set maximum level ("pensionable earnings"). The minimum level is frozen at C$3,500; the maximum for 2006 was C$42,100. The self-employed pay both portions, levied on net business income. All earnings below the maximum are taxed; persons whose annual earnings fall below C$3,500

receive a refund of contributions when filing an income tax return (HRSDC 2006a).

The pensionable earnings maximum level is adjusted each January, based on increases in the average wage. The contributory period begins when the worker reaches age 18 or in January 1966 (the start of the CPP), and it continues until the worker receives a retirement pension, reaches age 70, or dies. Some parts of the contributory period are dropped out of the benefit calculation, including periods with no or lower earnings while raising children younger than age 7; low-earning months after age 65; any month when eligible for a CPP disability pension; and the lowest 15 percent of earning years in the contributory period.

Eighty-six percent of the 6 million-plus CPP/QPP recipients collect retirement benefits, about 7 percent collect survivor benefits, and the remaining recipients are made up of disabled persons or children of the disabled. The normal retirement age is 65; retirement benefits can be taken at age 60 (with actuarial reduction) or delayed to age 70 (with actuarial increase). Maximum retirement benefits equal 25 percent of the contributor's average lifetime covered earnings (indexed by an economy-wide earnings measure). However, since virtually all Canadians aged 65 or older also receive OAS (and sometimes GIS) pensions (discussed below), the maximum retirement income from combined public sources replaces approximately 57 percent of average net earnings, about 10 percent more than the replacement rate for the U.S. Social Security system (OECD 2005, Table 4.2). Benefits are indexed to the Canadian consumer price index (CPI) and adjusted annually.[7]

Old Age Security. The OAS is the oldest component of the retirement income system. After the federal government was empowered by a constitutional amendment to operate a system of old age benefits, it set up the OAS program in 1952. OAS is paid entirely out of general revenues. All legal residents who have lived in Canada for at least 10 years after reaching age 18 are eligible for OAS at age 65. The payment amount is equivalent to about 14 percent of average wages and salaries. It is reduced based on the duration of Canadian residency. Full benefits go to residents of 40 years or more as well as to certain other persons with extended but less than continuous residence in the country.

Receipt of OAS is not conditional on retirement or income. However, the benefit is taxable, and recipients with total net income in excess of a certain amount have their benefit "clawed back" at a 15 percent rate, repaying part or all of their OAS benefit through personal income tax. The threshold where clawback begins is approximately C$62,000, and benefit loss is complete at about C$101,000. Only about 5 percent of elderly Canadians lose any of their OAS to taxes (Office of the Chief Actuary 2005, 66).

Guaranteed Income Supplement. Low-income OAS pensioners are eligible for the income-tested Guaranteed Income Supplement, which is legally a part of OAS. As such, its benefits are also paid entirely out of federal general revenues. For persons entitled to a full OAS payment, the maximum monthly GIS benefit is about C$594 for a single individual and C$779 for a couple (married or common law; amounts are for March 2006). For persons not entitled to a full OAS payment, the maximum GIS payment is increased to bring the combination of OAS and GIS payment to an amount equivalent to the same total benefit that would accrue to a person with full OAS entitlement. Combined OAS and GIS benefits for a low-income couple are about the same as the highest CPP/QPP benefit paid; for a single person they are somewhat higher. (Recall that virtually all CPP/QPP beneficiaries also receive OAS, so CPP/QPP recipients have total income greater than those reliant on OAS/GIS alone.) GIS is not subject to the Canadian income tax, but benefits are reduced by 50 percent of the amount of any non-OAS income.[8] No account is taken of assets, except for the income they generate. About one-third of Canadians older than age 65 receive both OAS and at least some GIS (Office of the Chief Actuary 2005, 93).

Both OAS and GIS benefits are price indexed, and payments are adjusted quarterly for inflation.

The Safety Net

For Canadians older than age 64, the combination of the OAS and the GIS is the income of last resort. The combined benefit paid in March 2004 is summarized for singles and couples in Table 2. (For the remainder of the article we use 2004 data to facilitate later comparison of benefits to various measures of poverty.) In addition to this level of assured income, Canadian elderly receive health care largely without charge through a system called, as in the United States, "Medicare." Government funding, mostly paid to private practitioners, covers 95 percent of hospital and doctor costs and about 70 percent of total aggregate health spending (World Health Organization (WHO) 2006, 58).

Table 2.
Canadian safety net for the elderly, March 2004 (Canadian dollars)

| Benefit | Recipient | Maximum benefit | | Maximum annual income for benefit receipt [a] |
		Monthly	Annual	
Old Age Security (OAS)	All recipients	462	5,550	59,790 [b]
Guaranteed Income Supplement (GIS)	Single	550	6,596	18,741
	Couple [c]	716	8,592	35,294
Combined OAS, GIS	Single	1,012	12,145	59,790 [b]
	Couple [c]	1,641	19,692	59,790 [b]

SOURCE: Human Resources and Social Development Canada (2004).

NOTE: C$1.23 ≈ US$1.

a. Maximum annual income figure includes OAS payment(s); only non-OAS income affects the GIS payment.

b. Benefit clawback through income tax system begins at C$59,790.

c. Assumes both receive OAS benefits.

The process of applying for and receiving OAS/GIS benefits in Canada is straightforward. Human Resources and Social Development Canada (HRSDC) administers the program; payments are handled by the Canada Revenue Agency (CRA). Residents normally receive an application for CPP/QPP and OAS benefits in the mail 6 months before their 65th birthday. The form includes a preliminary notification of possible GIS eligibility and asks the recipient if he or she is interested in applying for GIS. If the response is yes, the OAS office obtains detailed information on income for the client and mails this for verification. Once the information is returned and accepted, the combined benefit is provided monthly, in most cases by direct deposit. In years subsequent to the initial award, HRSDC obtains income information from the CRA for clients who have filed a tax return. It is not necessary to visit any office at any stage during this process.

Once eligible persons are in the system, benefits are paid monthly on the basis of past income, with over- or underpayments recouped on notification or at subsequent income tax filings. GIS benefits are offset by half of income from sources other than OAS (including the CPP/QPP). On average, a single GIS recipient in 2004 received a combined monthly sum of C$896, about 46 percent of it from GIS. The average married couple's combined payment is C$1,478, about 34 percent from GIS (HRSDC 2006b). The integration of GIS with the other systems and delivery through the income tax system leads to, from an American perspective, a very high take-up rate among eligibles.[9]

Comparison with Supplemental Security Income

The U.S. safety net for the elderly—Supplemental Security Income—is a "nationwide Federal assistance program . . . that guarantees a minimum level of income for needy aged, blind, or disabled individuals. It acts as a safety net for individuals who have little or no Social Security or other income" (Social Security Administration (SSA) 2006, i). SSI recipients living alone are categorically eligible for food stamps and Medicaid as well. As a result, when considering the safety net, it is appropriate to combine SSI and the Food Stamp Program (FSP) benefit. Because elderly recipients of means-tested benefits in both Canada and the United States receive significant medical benefits and health outcomes are similar (WHO 2006), we ignore this benefit in comparing the two safety nets.

The Federal Benefit Rate and State Supplements

In 2004 the federal SSI benefit rate (FBR) for individuals living independently was $564 per month; the rate for couples was $846. All but six states provided some type of supplement to this benefit for recipients in specific circumstances such as living in a nursing home (SSA 2005b, 5–6). Twenty-four states provided additional cash payments to single individuals and/or couples living independently. These cash supplements ranged from very little ($1.70 per month for individuals in Oregon) to quite substantial ($553 per month for couples in California). Fifty-five percent of all

SSI recipients lived in states with a state cash supplement, making it appropriate to include such payments when comparing benefits between countries. Because the FSP benefit is affected by total SSI received, it is necessary to incorporate this interaction.

Chart 1 shows the net supplement paid in January 2004 to individuals and couples living alone in each of the states that supplemented the cash benefit of all elderly SSI recipients living independently. The states are ordered by the additional individual benefit adjusted for food stamp effects. The first category ("All others") covers the 27 states (including the District of Columbia) with no general cash benefit supplement; these states accounted for 44.7 percent of all elderly SSI recipients in 2004. Continuing up the ladder, the median elderly recipient ranked on the basis of total minimum benefit (FBR plus state supple-

ment plus minimum food stamps) lived in Pennsylvania. Slightly more than one-quarter of all elderly SSI recipients lived in California; only Alaska (which is granted exceptional treatment in the FSP) had a higher net supplement. Because of an exception originally granted in 1974 and continued by subsequent legislation, California SSI recipients are ineligible for food stamps because the FSP benefit is "cashed out" in the state supplement (Arnold and Marinacci 2003). This nuance is incorporated in Chart 1 and subsequent calculations.

The Safety Nets Compared

To compare the SSI/FSP benefit with the Canadian OAS/GIS benefit, we convert the Canadian figures to U.S. dollars using the 2004 OECD Purchasing Power Parity (PPP) of C\$1.23(US\$1). We use the PPP recog-

Chart 1.
Monthly state Supplemental Security Income supplements for elderly individuals and couples, 2004
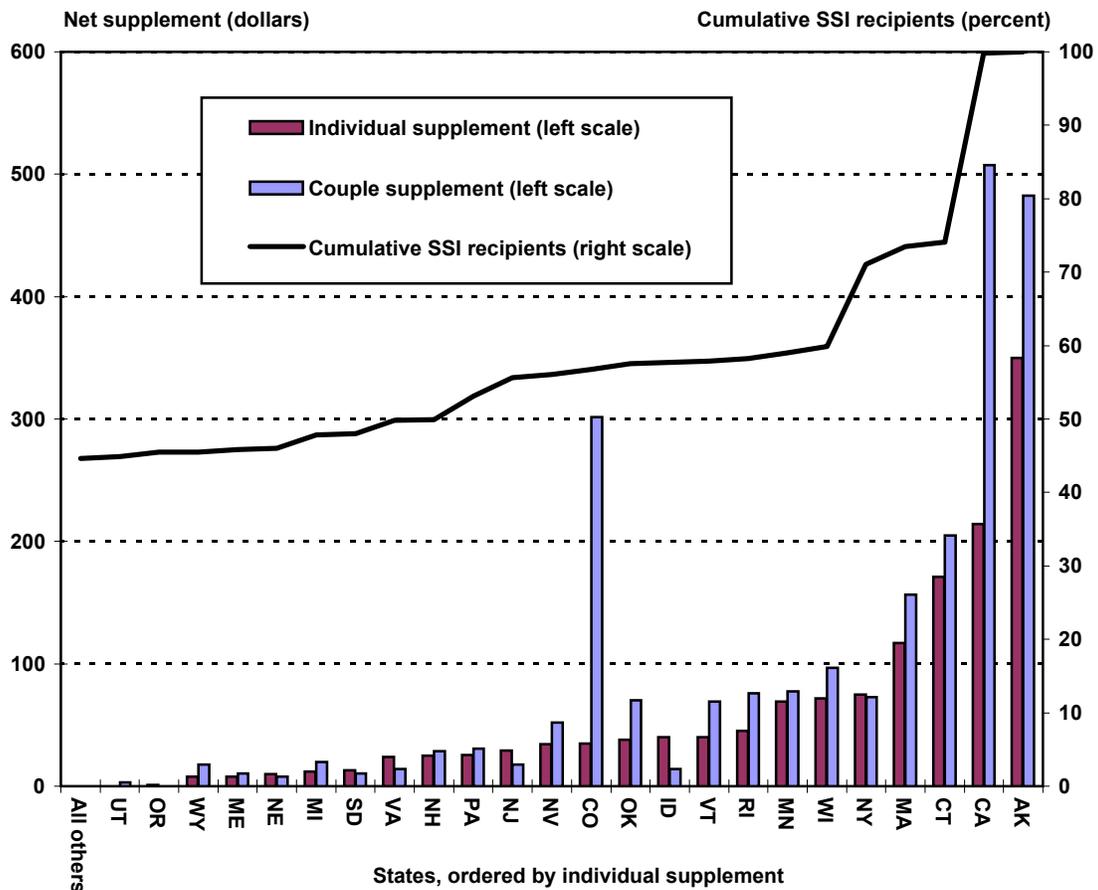
SOURCE: Social Security Administration (2005b).

nizing that there are many problems with international comparison of real purchasing power at low income levels. Indeed, one of the advantages of relative poverty measures is that comparing the proportion of persons with incomes less than half the median—for example, across countries—allows one to avoid identifying just what half the median buys.

Table 3 presents the combined SSI and FSP benefit for the United States and the corresponding OAS/GIS benefit for 2004 converted to U.S. dollars. For consistency with our definition of the safety net—the minimum income guarantee—we cite for each state grouping the minimum food stamp entitlement for singles and individuals living alone and dependent wholly on the FBR plus, where available, the state supplement. However, because of housing and medical cost deductions, most elderly SSI recipients receive more than the minimum food stamp amount. To gain a more complete picture of the combined level of support, we

have also included an estimate of the mean FSP benefit received by elderly SSI recipients dependent on SSI.[10] The U.S. benefit for states without a state supplement is shown along with comparable calculations for Pennsylvania (the state with the median recipient; see Chart 1) and California. For singles, the Canadian benefit is from 32 percent (with average FSP benefit) to 43 percent (at minimum FSP benefit) greater than the SSI/FSP benefit in states without a supplement; for couples, from 37 percent to 53 percent. Only in California and Alaska do benefits approach Canadian levels.

Compared with payments to couples, the Canadian system treats single adults less generously than do all but the most generous of U.S. states—in general, the benefit for individuals in the United States is a larger fraction of the couples benefit than is true in the Canadian system. As shown in Table 1, the comparatively lower Canadian poverty rates for singles discussed by Timothy Smeeding and Susanna Sandstrom (2004)

Table 3.
Comparison of safety nets for the elderly: Maximum monthly benefit, by marital status, Spring 2004 (U.S. dollars)

Marital status and benefit	United States SSI/FSP benefit			Canadian OAS/GIS benefit	
	Supplemental Security Income	Food stamps [a]	Total	Amount	Differential [b] (percent)
States without cash supplement (26)					
Single, average food stamps	564	60	624	823	32
Single, minimum food stamps	564	12	576	823	43
Couple, average food stamps	846	124	970	1,334	37
Couple, minimum food stamps	846	45	891	1,334	50
Pennsylvania (state with median recipient total benefit)					
Single, average food stamps	591	66	657	823	25
Single, minimum food stamps	591	10	601	823	37
Couple, average food stamps	890	109	998	1,334	34
Couple, minimum food stamps	890	32	922	1,334	45
California (highest large-state benefit)					
Single	790	0	790	823	4
Couple	1,399	0	1,399	1,334	-5

SOURCE: Calculations by authors.

NOTES: US$1 ≈ C$1.23; OAS = Old Age Security; GIS = Guaranteed Income Supplement; OASDI = Old-Age, Survivors, and Disability Insurance.

a. Minimum food stamp benefit is entitlement given federal benefit rate and state supplement, if available. Average food stamp benefit is calculated as average increment for elderly singles and couples living alone with no income other than SSI/OASDI (see text for source). SSI recipients in California are not eligible for food stamps.

b. Percent by which Canadian benefit exceeds (falls short of, if negative) corresponding amount for United States.

arise because the level of benefits for both singles and couples in Canada is much greater than in the United States, whether considered in absolute amounts gauged by purchasing power (as in Table 3) or relative to the national median income (as in Table 1).

Both the Canadian and U.S. systems provide for situations in which an eligible individual lives in the same household with a spouse (or, in Canada, a common-law partner) who is ineligible. Here, too, the Canadian system is more generous. In Canada a person aged 60–64 who is partner of a senior OAS/GIS recipient is eligible for an allowance that brings the couple's total income to a level equivalent to what they would receive if both were OAS/GIS recipients. The allowance for a pensioner's survivor younger than age 65 is about 10 percent less than the maximum OAS/GIS benefit for single persons; once reaching age 65 the survivor becomes eligible for full OAS/GIS benefits in her or his own right (Office of the Chief Actuary 2005, 43). In the United States there is no benefit for the survivors of SSI recipients and no complementary benefit for ineligible spouses. Rather, income of ineligible spouses in excess of exclusions that are allowed regular beneficiaries plus a set-aside for a "living allowance" is considered available to the SSI recipient and reduces the SSI benefit (SSA 2006, 13).

Benefits and Poverty

Perception of the consequences of the Canadian system for poverty depends on the standard employed for poverty assessment. Canadians use two methods for assessing poverty—a "low-income cutoff" (LICO) and a "low-income measure" (LIM) (Statistics Canada 2006). Poverty in the United States continues to be officially assessed using a measure originally developed in the early 1960s (Ruggles 1990). A more comprehensive measure proposed in the mid-1990s by a panel convened at the behest of Congress by the National Research Council—an arm of the National Academy of Science—has not been officially adopted (Citro and Michael 1995).

The Low-Income Cutoff and the Low-Income Measure

The low-income cutoff is constructed by determining the income level at which families on average spend 20 percentage points more of their total outlays on necessities—food, clothing, and shelter—than do the average Canadian families with the same number of persons living in the same region and urban/rural circumstance.[11] In focusing on relative outlays

for necessities, construction of the LICO is consistent with the recommendations made for the United States by the National Research Council panel. The standard varies by community size; it is lowest in rural areas and highest in urban areas of 500,000 or more. The cutoffs are reported both before and after income taxes, but both measures include transfers. In 2004 the before-tax LICO for a single adult living in an urban area with a population from 100,000 to 499,999 was C$17,515; for two persons the cutoff was C$21,804. Thus the combined OAS/GIS benefit (see Table 2) fell about 31 percent short of the single-person cutoff and 10 percent below the two-person cutoff. [12]

The low-income measure is based on income alone; this standard is set at 50 percent of median adjusted individual income. Using an equivalence scale, the adjustment—made before calculation of the median—converts each Canadian's family income into the "equivalent" income for a person living alone. The equivalence scale used by Statistics Canada for this purpose assigns a weight of 1.0 to the oldest person in the family, a weight of .4 to the second oldest regardless of age and to all other adults (persons aged 16 or older), and a weight of .3 to any other family members. Thus to find the "individual equivalent" scale for a family of two adults, one would divide whatever family income measure is used by $1 + .4 = 1.4$. Once half the median is determined for individuals using this "equilivised" measure as a base, the cutoff is adjusted for larger families by multiplying by the appropriate equivalence weight. The LIM in 2004 was C$16,253 before taxes for a single adult and C$22,255 for a couple. The March 2004 OAS/GIS minimum was therefore 75 percent of the LIM for single adults and 87 percent for couples.

Development of the LIM was prompted in part by interest in international comparisons. The LIM standard approximates the measure used by the Organisation for Economic Co-operation and Development (OECD) in some recent comparative poverty studies (Förster and Mira d'Ercole 2005) and in the work of Timothy Smeeding and colleagues, previously cited. The difference between the Canadian measure and that of the OECD is that the OECD equivalence scale is simpler, giving a weight of the square root of family size to each family member. Smeeding uses the square root equivalence scale but focuses on income after taxes, as does the LICO measure that Statistics Canada (2006, 9) "prefers." In practice the choice between the Canadian and square root equivalence scales is of little consequence for most outcomes: Note that both

the Canadian and square root scales assume that two-adult households require 1.4 times as much income to achieve the same living standard as a single adult living alone. For purposes of this article, we refer to the square root equivalence scale as the OECD scale, recognizing that some OECD work involves more elaborate adjustments (Förster 2005).

No distinction is drawn among adults on the basis of age in calculating poverty thresholds for the LICO, the LIM, or the OECD scale.

Direct Benefits Comparison with the United States

Table 4 considers the difference between Canada and the United States from the perspective of the poverty measures. We report U.S. figures for Pennsylvania, given that state's "median" status (see Chart 1), and we assume that the SSI recipient receives the average food stamp benefit (see Table 3). The first line of data in Table 4 shows that the Canadian basic income guarantee for the elderly substantially exceeds that provided in the United States. In the second line we report for the United States the OECD poverty standard of

50 percent of median adjusted income, expressed in terms of gross income before taxes but including cash transfers.[13] Using the Canadian equivalence scale, the couple value is 1.4 times the single adult value. The Canadian LIM is taken from official sources and converted to U.S. dollars using the same purchasing power adjustment as that applied in Table 3. Real income is lower in Canada, and half the median—the OECD relative poverty measure—is about 3 percent lower. We also include, in line three, the official U.S. poverty measure, based on the cost in current prices of a yardstick outlay established in 1963. Having established these points of reference, data lines four and five report the maximum benefit in both countries as a percentage of (1) the 50-percent-of-median standard and (2) the U.S. poverty standard, that is, the numbers appearing in lines two and three.

Clearly, by both Canadian and U.S. standards,[14] the Canadian system is significantly more generous than its American counterpart. This generosity extends beyond the minimum guarantee. Every dollar in income from social insurance above $20 reduces the SSI payment by a dollar, but in Canada GIS benefits

Table 4.
Safety nets and poverty standards for the elderly in the United States and Canada, by marital status, 2004 (U.S. dollars)

	United States		Canada	
	Single	Couple	Single	Couple
Maximum benefit (annual equivalent) [a]	7,885	11,979	9,874	16,009
OECD/LIM poverty standard [b]	13,620	19,068	13,214	18,499
U.S. official poverty standard [c]	9,060	11,418	9,060	11,418
	Percent			
Maximum benefit as a percentage of OECD/LIM standard	58	63	75	87
Maximum benefit as a percentage of U.S. poverty standard	87	105	109	140

SOURCE: Calculations by authors.

NOTES: Elderly family unit consists of all adults older than age 64.
US$1 ≈ C$1.23; SSI = Supplemental Security Income; FSP = Food Stamp Program; OAS = Old Age Security; GIS = Guaranteed Income Supplement; OECD = Organisation for Economic Co-operation and Development; LIM = low income measure.

a. For the United States, SSI plus FSP in Pennsylvania; for Canada, OAS plus maximum GIS.

b. For the United States, data calculated by the authors using the 2005 Current Population Survey March Supplement; for Canada, data calculated from Statistics Canada (2006, 29).

c. From DeNavas-Walt and others (2005, 45).

are "taxed" at only a 50 percent rate. The 50 percent disregard leads to a high proportion of Canadian GIS recipients who also have some income from the Canadian Pension Plan or its Quebec equivalent—83 percent in 2003 (unpublished data provided by the Canada Department of Human Resources and Social Development). It is the combination of a high basic benefit with substantial disregard of other pension income that lifts so many elderly Canadians above the poverty thresholds. The fixed and small SSI disregard produces substantially less mixing: Fifty-seven percent of elderly U.S. SSI recipients had some income from Social Security in December 2004 (calculated from data in SSA (2005a, Table 8)). Social assistance generosity is more than a matter of cash or disregards: Apart from the differences in benefits and treatment of other income, differences in prevalence of poverty in Canada and in the United States may also result from differences in ease of access to the respective safety net systems. It appears to be mechanically much easier to establish OAS/GIS eligibility than it is to initiate and sustain SSI/FSP payments, and GIS has no assets test.

We conclude that the reason why poverty rates are so low in Canada is that the Canadian system is very generous to those with few other resources, and this reduces poverty. Solvency for the self-funding part of the program is less of a problem because almost half of total pension costs comes from general revenues. If a country redistributes more and concentrates this redistribution on the elderly, the relative incomes of elderly people rise, and poverty falls. It is not "rocket science." It is arithmetic.

Looking South

If the redistribution of general revenues is concentrated more on the elderly, the arithmetic is expensive—Smeeding and Sandstrom's assertion that Canada spends "slightly more" than the United States is far from the mark. What would it in fact cost to move SSI for the elderly to something like the Canadian safety net? A first estimate is evident from the last column in Table 3: Increase SSI benefits by 25 percent for singles, 34 percent for couples, and some comparable amount for persons living with others, and disregard more Social Security income in benefit calculation. But this estimate ignores the consequent reduction in FSP benefits, and real emulation of Canada would require elimination of the SSI assets test as well. Both an increase in benefits and elimination of the assets test would raise SSI take-up. Thus for a first estimate,

suppose the United States attempts to somehow simply "fill the gap" between current incomes of the elderly and the amount needed to achieve an income equal to the same percentage of median income as that achieved by Canada's current maximum benefit—that is, 75 percent for singles and 87 percent for couples (see Table 4). Depending on certain assumptions about income underreporting in the U.S. Census Bureau's Current Population Survey (CPS), filling the gap would require increasing SSI payments to the elderly by at least 110 percent and possibly as much as 150 percent.[15] Refinement of this "back of the envelope" calculation requires making assumptions about state supplements, the consequences of expansion of eligibility for take-up and private saving, and the implications for related programs like Medicaid. The "possibly as much as" concept seems likely. Costs would multiply further if the same adjustments were extended to nonelderly SSI recipients.

An alternative perspective is to consider the cost of the U.S. and Canadian systems in relation to gross domestic product. Suppose the United States was to devote the same fiscal effort to establishing a minimum income for the elderly as does Canada. What would be the cost? The tabulation on the next page provides a rough cut at comparing the fiscal commitment involved in the Canadian system compared with the cost of SSI.[16]

Combined federal and state SSI costs for elderly recipients amounted to about $8.3 billion in calendar year 2004 (SSA 2006, Table IV.C1 and IV.C4; state supplements for blind or disabled elderly estimated by authors). Food stamp outlays for this group are not published by the U.S. Department of Agriculture. We estimate benefits accruing to elderly SSI recipients using data from the Food Stamp Program Quality Control Database for 2004 (Poikolainen and Ewell 2005) under the assumption that FSP benefits are shared equally among all members of a recipient household. A reasonable estimate is that SSI and FSP costs for the elderly amounted to roughly one-thirteenth of 1 percent of GDP.

At first glance, Canadian outlays for their safety net look comparable to those of the United States but, of course, smaller: C$5.7 billion. However, such a comparison ignores the fact that GIS comes on top of the near-universal and substantial OAS payment. Assuming that every GIS recipient receives average OAS,[17] we estimate the total costs of providing income support for elderly persons receiving GIS in 2004 to be approximately C$13.3 billion, slightly more than

1 percent of GDP and almost *fourteen times* the U.S. allocation for the SSI and Food Stamp programs. The significance of this commitment is underscored when it is recognized that in 2004, Canadian GDP per capita (US$32,000) was just 80 percent of the U.S. level.[18] In a sense even the C$13.3 billion figure is an understatement; in the absence of OAS far more Canadians would presumably be eligible for GIS. A full accounting of the commitment to providing a minimum income guarantee would include an estimate of the general reduction in GIS obligation that the presence of the OAS demogrant affords.

The tabulation below, which compares fiscal commitment for 2004, shows a problem with international comparisons of benefit systems—failure to consider context. At first glance the benefit cost of the Canadian GIS is similar to U.S. outlays for SSI. But virtually every poor elderly Canadian citizen gets OAS, for which there is no U.S. equivalent. It is true that OAS is not means-tested (aside from the high-end clawback). But GIS is clearly calibrated within the context of OAS (indeed, it is delivered by the same agency), and it would be misleading not to include both when describing the Canadian minimum income guarantee. To report, as Smeeding and Williamson (2001) have, "a country like Canada has a very efficient income-related lower tier benefit which produces a low poverty rate for a modest level of social expenditure" is to miss the OAS point and surely to mislead readers about the

success of targeting in the Canadian system and the costs of its emulation.

Review of the Canadian system does suggest some changes in the SSI and the Food Stamp programs that would marginally facilitate access and ensure that the lowest-income elderly receive at least the minimum benefit. Ideally, the FSP benefit would be evaluated by local SSA offices in conjunction with SSI benefit review, unifying the application process and reducing FSP administrative costs for states. While at present, SSI applicants can obtain FSP applications at the SSA office and can file initial applications there, establishing and sustaining benefits requires visits to the agency administering FSP benefits, even for households made up entirely of SSI recipients and therefore categorically eligible. Considerable experimentation with joint processing of SSI and FSP applications has occurred. The results suggest that simplification of FSP benefit calculation and integration with SSI would raise take-up and reduce administrative costs for states (Food and Nutrition Service 2000; Food Research and Action Center 2004).

It is clear that establishing eligibility for the GIS in Canada is simplified by the absence of asset tests; this permits integration with the internal revenue system and the other benefits programs that are conditioned only on income. Although inclusion of the value of some assets in needs assessment is viewed as important in the United States, it might be possible to shift asset assessment from the present all-or-nothing eligibility determination to a sort of quasi-annuitization in which a fraction of the value of counted assets is treated as income in determining the SSI benefit (see Davies, Rupp, and Strand 2004). Such a procedure could have favorable consequences for savings behavior of the near elderly and the elderly themselves, especially if a portion of assets was disregarded altogether in benefits computation. The potential costs of such a change are, of course, difficult to evaluate; Rupp, Strand, and Davies (2001) estimate that completely eliminating the SSI assets test would have increased annual costs by 7.7 percent in 1991.

Both the Canadian OAS/GIS and the U.S. SSI/FSP systems guarantee minimum incomes that are below the OECD poverty standards, yet poverty rates are much higher in the United States. In part this is because the gap between the maximum system payment and the poverty standard is much greater in the United States (see Table 4). However, the effect of the Canadian system is also enhanced by the substantial disregard of Canadian/Quebec Pension Plan income

	United States (billions, US$)
Gross domestic product (GDP)	11,734.3
Supplemental Security Income	8.3
Food Stamp Program	0.7
Total	9.0
Total as a percentage of GDP	0.077
	Canada (billions, C$)
Gross domestic product	1,290.8
Old Age Security	7.6
Guaranteed Income Supplement	5.7
Total	13.3
Total as a percentage of GDP	1.030

SOURCES: Social Security Administration (2006); Human Resources and Social Development Canada (2005a). See text.

in calculation of the GIS benefit. This allows the GIS benefit to fill the gap between the poverty line and the combination of pension and OAS benefits for persons with modest pension entitlement. The GIS 50 percent disregard is proportional and is therefore not affected by inflation. In contrast, for SSI only the first $20 of any monthly Social Security payments is disregarded; beyond this level every dollar of income from Social Security counts against the SSI benefit. The $20 disregard has not changed since the inception of the SSI program in 1974. Had the $20 disregard been held constant in real terms, the current value would be approximately four times greater. Regardless of the poverty standard employed, emulation of the Canadian disregard policy would reduce poverty among the elderly in the United States. Nevertheless, such changes would be costly, because every $1 increase in income disregarded in benefit calculation raises costs by at least $1—and more if such changes raise program take-up (Davies and others 2001/2002).

In this discussion we have ignored differences in health care available to the elderly in Canada and the United States, arguing that access and outcomes are roughly comparable. Although outcomes may be similar, costs are not. Various recent analyses have demonstrated that while overall spending by the United States on social welfare is comparable to that of other countries, the United States is unique in the share of such outlays devoted to health (Adema and Ladaique 2005). Thus if means could be found to increase the efficiency of health care delivery in the United States to match that of other countries without sacrificing quality, resources might be freed to target the remaining income poverty among older citizens and to address the concerns voiced by the President's Commission to Strengthen Social Security (Garfinkle, Rainwater, and Smeeding 2006).

Notes

[1] The LIS is a remarkable international collaborative effort initiated by Timothy Smeeding to develop and make available to researchers comparable household-level data on individual and family economic circumstance. For detail and multiple examples of LIS-based research, see the project Web site, http://www.lisproject.org/. Other examples of LIS application to poverty analysis appear in Smeeding (2006b).

[2] Others reach the same conclusion. Among the 24 Organisation for Economic Co-operation and Development (OECD) countries in 2000, only Portugal and Mexico had higher rates of elderly poverty than did the United States. See Förster and Mira d'Ercole (2005, Figure 24) for more detail.

[3] When Paul Martin took office as Canadian prime minister in December 2003, the federal government department known as Human Resources Development Canada (HRDC) was split into two new departments: Social Development Canada (SDC) and Human Resources and Skills Development Canada (HRSDC). In February 2006, this change was reversed by the new conservative government of Steven Harper, and SDC and HRSDC were reunited as Human Resources and Social Development Canada (HRSDC). In this article, the source for all recently accessed agency data is cited as HRSDC.

[4] "Equivalent" here means determining what would be required to purchase an amount of consumer goods in the United States equivalent to what the Canadian benefit can buy in Canada. The Purchasing Power Parity measure published by the Organisation for Economic Co-operation and Development (OECD) for 2005 equates 1.21 Canadian dollars (C$) with 1.00 U.S. dollar (US$).

[5] In addition to $5.2 billion for SSI, this calculation counts as public-provided benefit payments to retirees and their dependent spouses and surviving widow(er)s under Old-Age, Survivors, and Disability Insurance (OASDI)— $265 billion, and for railroad retirement—$9 billion.

[6] For an overview of the Canada Pension Plan and the consequences of important reforms introduced in 1997, see Bouchard (2007)

[7] CPP and QPP contributions not immediately required to pay benefits are managed professionally in a portfolio of foreign and domestic assets including private securities (Sarney and Preneta 2001/2002). Less than a third of CPP assets are government bonds. The 5-year average real rate of return on CPP assets was 5.9 percent in 2006 (see Canada Pension Plan Investment Board (2006) and Bouchard (2007); real return calculated on the basis of the Canadian CPI).

[8] Income accruing to either partner in couples is treated as shared equally, so the benefit reduction rate for individual partners is 25 percent. Office of the Actuary (2005, 40–42) provides details on GIS operation.

9 Poon (2005) estimates take-up rate for GIS at 86 percent of eligible persons in 2000. Currie (2006, Table 3.1) cites evidence that participation in SSI is below 75 percent.

10 The increment in income—a result of the FSP benefit—is calculated using data from the fiscal year 2004 Food Stamp Program Quality Control Database (Trenkamp and Wiseman 2008). To provide adequate sample size, the increment for Pennsylvania is calculated using data for New Hampshire, Pennsylvania, and New Jersey; the New Hampshire and New Jersey state supplements are similar in magnitude to Pennsylvania's (see Chart 1). The higher average FSP benefit for singles in Pennsylvania compared with states without a cash supplement is the result of higher average housing costs in Pennsylvania that lead to greater excess shelter cost deductions.

11 "Family" means "all persons living in the same dwelling and related by blood, marriage, common-law relationship or adoption" (Statistics Canada 2006, 8).

12 The official position of Statistics Canada is that the LICOs should not be treated as poverty measures, but the nuances of the agency's position are regularly overlooked by both public media and other Canadian government agencies. The Statistics Canada Web site includes the following statement from the current chief statistician: "In the absence of politically-sanctioned social consensus on who should be regarded as 'poor,' some people and groups have been using the Statistics Canada low-income lines as a de facto definition of poverty. As long as that represents their own considered opinion of how poverty should be defined in Canada, we have no quarrel with them: all of us are free to have our own views. But they certainly do not represent Statistics Canada's views about how poverty should be defined"(Felligi 1997).

13 We use gross income rather than net income here because it is difficult to compute federal income tax liability using Current Population Survey (CPS) data, and the official U.S. poverty measure, used in line three of Table 4, is also based on gross (that is, pretax, post-cash-transfer) income. The benefits figures listed for the United States include food stamps, yet food stamps are not included in the incomes data used to calculate the OECD/LIM poverty standard nor are food stamps included in income when assessing poverty using the U.S. standard. Inclusion of food stamps would not alter the estimated median for the income distribution because food stamp receipt is concentrated among persons below the median. Most authorities argue that food stamp benefits should be included in income when assessing poverty (Citro and Michael 1995, 67).

14 The poverty measure proposed by the National Research Council is for income net of taxes and certain other costs but including the value of certain in-kind transfers such as food stamps and rent subsidies. Applying the NRC methodology, for 2004 the standards for adults and couples living alone were $9,252 and $13,045 respectively, below the OECD/LIM cutoff but above the official poverty standard, especially for couples (unpublished estimates provided by the U.S. Census Bureau).

15 This estimate was constructed using data for 2002 and a version of the CPS, with individual incomes adjusted for missing information and underreporting using Social Security administrative data. The relative poverty standard used reflects the income distribution in 2002. The analysis assumes that state supplement amounts stay constant, and no adjustment is made in either estimate for the impact of SSI expansion on the Food Stamp Program, Medicaid, and other costs. The lower cost estimate is the result of using conservative income replacement and imputation procedures. The higher estimate is the consequence of more liberal adjustment. The adjustment method is discussed in Nicholas and Wiseman (2008).

16 The Canadian figures in the tabulation are subject to refinement. GIS costs for the year are inflated from published monthly data for March, July, October, and December. We assume that all GIS recipients receive the average OAS payment. We exclude a (relatively) small amount of GIS paid as "allowance" for survivors and certain other individuals, because these persons are not elderly.

17 The average OAS for 2004 was approximately C$447.

18 Note that the difference between the United States and Canada in GDP per capita is much greater than the difference in median incomes as reflected in the OECD/LIM half-the-median poverty standard reported in Table 4. GDP per capita is an average. Income in the United States is much more unequally distributed than is income in Canada; given that the distribution of income is skewed toward higher incomes, the result is that the ratio of average to median income in the United States is much greater than in Canada, and this affects GDP per capita comparisons.

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Chile's Next Generation Pension Reform

by Barbara E. Kritzer

The author is with the Division of Program Studies, Office of Research, Evaluation, and Statistics, Office of Retirement and Disability Policy, Social Security Administration.

Introduction

In 1981, Chile introduced a new system of privately managed individual accounts, also called capitalization, replacing its public pay-as-you-go pension system (PAYG). Since 1990, 10 other countries in the region have adopted some form of what has become known as the "Chilean model": Argentina (1994), Bolivia (1997), Colombia (1993), Costa Rica (1995), Dominican Republic (2003), El Salvador (1998), Mexico (1997), Panama (2008), Peru (1993), and Uruguay (1996).

Over the years, Chile made some major changes to its capitalization system, such as liberalizing investment rules and increasing the type and number of pension funds that a pension fund management company (AFP) must offer its account holders. However, despite these and other changes, a number of policy challenges remain unresolved including large groups of workers who are not covered and irregular worker participation rates, both of which could lead to inadequate retirement benefits. Also, according to international standards, the administrative fees the AFPs are charging account holders are high and could significantly decrease the size of a worker's pension.

Law 20.255 enacted in March 2008 overhauls the individual accounts system and incorporates previously uncovered groups. The law includes measures to provide adequate benefits to a larger portion of the population, ensure more gender equity, encourage greater competition in the pension fund industry, improve the AFP's management of financial risk to increase the return on the workers' contributions, change the rules for financing survivors and disability insurance,

establish more opportunities for voluntary savings, and improve financial literacy.

This paper presents a brief overview of Chile's individual account system and the major changes made to it prior to 2007. The paper then focuses on the major policy challenges that have led to additional reforms and summarizes the provisions of Law 20.255 that address many of the system's shortcomings.

System Overview

In 1981, Chile implemented its mandatory individual retirement account system allowing workers to choose between the public PAYG and the privately managed system, except those workers eligible to retire within 5 years. Since December 31, 1982, new entrants to the labor force must join the new capitalization system and set up individual accounts with the AFP of their choice. The public PAYG system is being phased out as the number of beneficiaries declines and is expected to close by 2050.

Workers must contribute 10 percent of their monthly earnings, up to a maximum of 60 Unidades de Fomento (UFs) (US$2,427) per month to their individual accounts.[1] Each month AFPs charge contributors an administrative fee and a premium for survivors and disability insurance: as of September 2008, an average of 0.99 percent of earnings and 1.71 percent of earnings, respectively (SUPEN 2007–2008).

Workers are free to choose any AFP and may change from one AFP to another at any time. Workers may also make voluntary contributions to their individual

accounts and to separate, voluntary retirement savings accounts. Employers are not required to contribute to their employees' accounts and participation is voluntary for the self-employed.

An AFP is a private company whose functions are limited to managing pension funds and providing and administering certain pension benefits. AFPs collect workers' contributions, credit them to the workers' accounts, and invest these monies according to regulations set by the government. AFPs also contract with an insurance company to provide survivors and disability insurance for their members. Until July 2008, the Superintendent of Pension Fund Management Companies (SAFP), an autonomous government agency that was associated with the minister of labor and social security, oversaw and licensed AFPs.

At the normal retirement age (65 for men and 60 for women), workers can use the balance in their individual accounts to do one of the following:[2]

• Purchase an immediate annuity to provide the retiree with lifetime benefits.

• Set up programmed withdrawals to provide income over the retiree's expected life span. If the retiree dies early, dependents may inherit the balance in the deceased's individual account.

• Purchase a deferred annuity, which means setting a future date for purchasing an annuity and until that date make programmed withdrawals from the individual account.

• Purchase an immediate annuity with a portion of the funds in the individual account and make programmed withdrawals with the rest of the funds.[3]

Annuities are purchased from an insurance company for an additional administrative fee and most AFPs charge a monthly fee for programmed withdrawals.

Early retirement is permitted for individual retirement account holders under certain conditions, and excess funds can be withdrawn from an individual account for any reason as long as the worker's account balance is sufficient to finance 150 percent of the minimum pension.

Government Guarantees

Account holders who switched from the public PAYG to the individual account system receive a recognition bond at retirement that represents the value of their accrued rights under the old public system. The value of the bond is adjusted annually to changes in the consumer price index and provides 4 percent interest per year beginning on the date the worker enrolled in the new system. The bond is redeemed and added to the mandatory individual account when the worker retires, becomes permanently disabled, or dies. The bond cannot be redeemed at any other time. To date, almost no one has retired with a benefit entirely from an individual account. In addition, the government guarantees retirees a pension up to 45 UFs per month (US$1,813) if their annuity provider goes bankrupt.

The two types of government-guaranteed benefits are gradually being replaced under the new law: the guaranteed minimum pension (MPG) under the capitalization system and means-tested (PASIS) benefits. The MPG has been paid to men aged 65 and women aged 60 with 20 years of contributions to an individual account and whose total income—pension from an individual account plus other sources of income—is below the minimum level set by the government.[4] The MPG is a top-up subsidy that, combined with the retiree's income, reaches the minimum level. For those who have exhausted their funds, the government has provided the entire amount. Retirees who chose the programmed withdrawals option and exhausted their funds by outliving their actuarial life expectancy could also be eligible for the MPG. Disabled workers must have had 10 years of contributions to qualify for the MPG.[5] PASIS benefits were paid to low-income individuals who were either disabled or over the age of 65 and did not qualify for any other type of pension. The recognition bond, MPG, and PASIS have been funded by general revenues.

Survivors and Disability Insurance

An AFP contracts with an insurance company for survivors and disability insurance. Those younger than the normal retirement age (65 for men and 60 for women) who become disabled from an illness or accident not related to work may be eligible for a disability benefit.[6] Certain unemployed workers who become disabled may also be eligible for a disability benefit. The medical commission first determines if the worker's disability is either total, with at least a 66 percent loss of earning capacity, or partial, with at least a 50 percent, but less than 66 percent loss of earning capacity. A temporary disability benefit (either total or partial) is payable for up to 3 years and is financed by the worker's AFP. A higher level of assessment determines if the worker is permanently disabled after 3 years.[7] The funds in a worker's individual account are used to finance the permanent disability benefit.

A monthly disability benefit is equal to 70 percent of the worker's base salary (average monthly wage in the previous 10 years) for total disability and 50 percent for partial disability. If the balance in the individual account is less than the required minimum to finance a total or partial disability benefit, the worker's disability insurance company makes up the difference (SAFP 2007; SSA 2008).

Survivors benefits are payable to a widow, a disabled widower, and children younger than age 18 (age 24 if a student and no age limit if disabled). In some cases, parents of the deceased may receive a survivor benefit. When a retiree dies, if the retiree was receiving an annuity, eligible survivors receive the corresponding survivor annuity. If the deceased retiree was receiving programmed withdrawals, the balance in the individual account is distributed among eligible survivors. If the balance in the deceased's individual account yields a benefit that is lower than the required amount to finance a survivor pension (70 percent of the worker's average salary in the last 10 years before death), the deceased's life insurance makes up the difference (SAFP 2007; SSA 2008).

If the worker dies before retirement, eligible survivors choose whether to receive an annuity or programmed withdrawals.[8] All the deceased's eligible survivors must receive the same type of benefit. If the balance in the deceased's individual account yields a benefit that is lower than the required minimum (70 percent of the worker's average salary in the last 10 years before death), the deceased's life insurance makes up the difference (SAFP 2007; SSA 2008; ISSA 2008).

History of Changes to Investment Rules

As the system has matured, Chile has gradually liberalized AFP investment rules. When individual accounts were first introduced, investments were restricted to government bonds, financial institution bonds, and a limited amount of corporate bonds; investment in foreign securities was prohibited. In 1981, AFPs were permitted to invest only in low-risk domestic instruments and they could have up to 100 percent of their assets in government bonds. By 1985, when the country's capital market began to develop, the limit on government-issued instruments was lowered to 50 percent, and AFPs could invest between 10 percent and 30 percent of assets in some stocks (Berstein and Chumacero 2003). A law implemented in 2002 allows the AFPs to invest more of their portfolios in equities (see Multifunds, below).

For the first 9 years of operation, AFPs were prohibited from investing in foreign assets. By 1996, restrictions were eased and AFPs could invest up to 6 percent of assets in foreign instruments. This limit gradually increased to 30 percent in 2004 and 45 percent in April 2008. The goal of these measures was to allow the AFPs to diversify their portfolios and gradually reduce the concentration in domestic instruments to lessen the impact on the domestic financial market. Increasing the foreign investment limit could also provide a higher rate of return (Berstein and Chumacero 2003; Kritzer 2001/2002; SSA 2006–2008).

Chart 1 shows the evolution of selected actual pension fund investments since 1981. The relative mix of investments in the combined AFP portfolios has changed dramatically since the program began. Until 2002, the percentage of assets invested in government bonds ranged from a low of 26 percent of investments in 1982 to a high of 47 percent in 1986. In 1992, international investments represented less than 1 percent of AFP assets, and by 2005, that amount had reached about 30 percent.

Multifunds

Pension fund choices have increased. Until 2002, AFPs could offer only one account to a member. The multi-fund law implemented in August 2002 requires each AFP to offer four different types of funds —called Funds B, C, D, and E—with varying degrees of risk. AFPs may also offer a Fund A with up to 80 percent of its assets in equities. The 2002 law permits account holders to allocate their contributions between two different funds within one AFP, in whatever proportion they choose. Table 1 shows that the limits on investment for each type of fund range from 40 percent to 80 percent of assets in equities for Fund A to mainly fixed instruments for Fund E.

Every fund (Funds A–E) managed by an AFP must maintain a minimum and a maximum rate of return calculated to reflect the average performance of that fund category among all the other AFPs over a 3-year period.[9] Each AFP fund must keep 1 percent of the value of its pension fund as a separate reserve fund whose investments are subject to the same rules as those for the pension funds. If any AFP's fund performance falls below the minimum, it must make up the difference from its reserve fund. If an AFP fund exhausts its reserve fund, the government makes up the difference, dissolves the AFP, and transfers the accounts to another AFP (Law 3500).[10]

Chart 1.
Evolution of selected pension fund investments, by type, 1981–2006

Percent of total investments
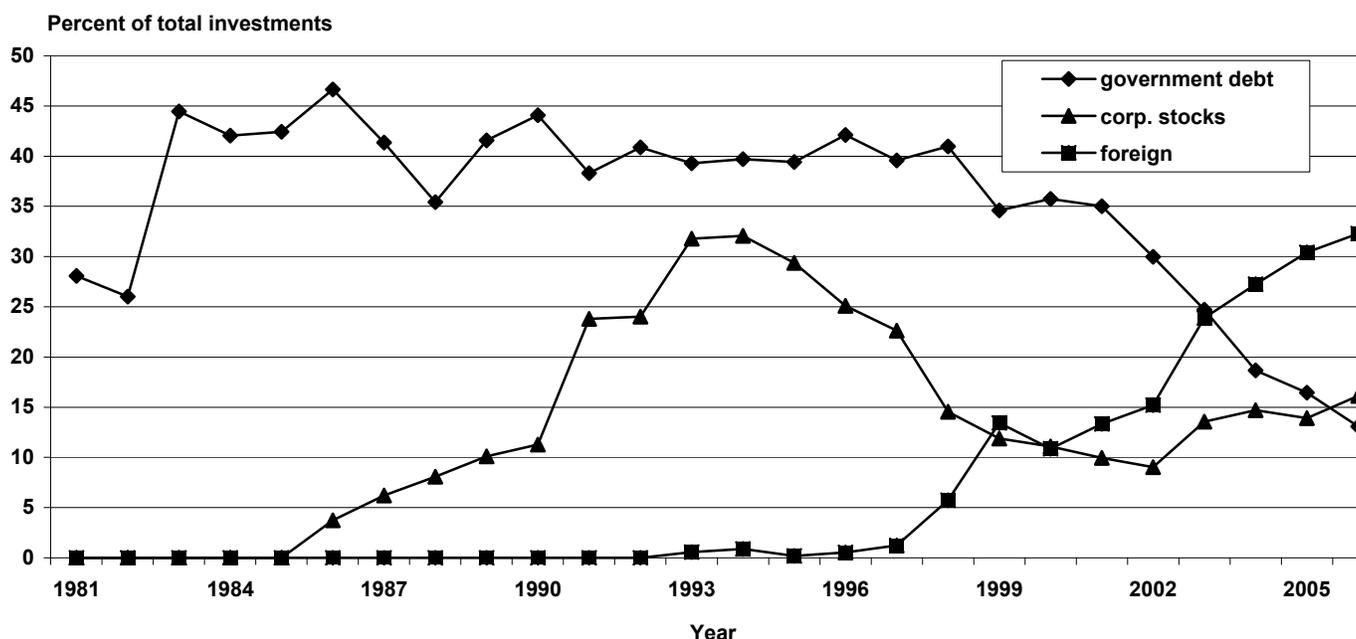
SOURCE: SAFP 2007.

AFP Performance

By the end of 2007, total AFP assets under management reached US$111 billion, about 64 percent of Chile's gross domestic product (AIOS 2007). The historical real rates of return for Fund C, which has been in existence since 1981, have been reported as approximately 10 percent per year. This rate of return includes the high yields within the first 10 years of the program.[11] A recent study found that a worker with average earnings who has contributed regularly since 1981 has earned an average 6.8 percent gross annual

Table 1.
Multifunds' limits on investment (percent)

Fund	Limits on investments in equities	
	Minimum	Maximum
Fund A	40	80
Fund B	25	60
Fund C [a]	15	40
Fund D	5	20
Fund E	b	b

SOURCE: SAFP 2007.

a. Formerly fund 1.

b. Mainly fixed instruments.

real rate of return over the last 10 years (Marcel Commission 2006).

Annuities Law

A law implemented in August 2004 changed the way annuities were sold. Until 2004, individual account holders could purchase an annuity at retirement either directly from an insurance company or through an intermediary. The cost of purchasing an annuity in this way was not regulated and retirees paid fees as high as 6 percent of the value of the annuity (Kritzer 2001/2002). The 2004 law required AFPs and life insurance companies to create an electronic bidding system for the purchase of annuities, called pensions consultation and offers system (*sistema de consultas y ofertas de montos de pensión* or SCOMP), so that workers nearing retirement can easily compare the products offered by each company. SCOMP is overseen by the Superintendent of AFPs and securities and insurance.[12]

The 2004 law set a limit on the fees that insurance companies can charge for annuities. Every 2 years, the ministers of labor and social security and finance review the fee caps. Initially, they set the cap at 2.5 percent of the value of the annuity. In 2006, they kept the cap at the same level for the next 2 years.

The annuities law also gradually raised the minimum requirement for an early retirement pension to encourage workers to save more for retirement. In

2004, about half of retirees under the system of individual accounts retired before the normal retirement age. The government was concerned that the earlier workers retire, the more likely it was that over time it would have to supplement a retiree's benefit with the MPG. Under the original rules for early retirement, an individual's pension had to be at least 50 percent of his earnings over the previous 10 years and 110 percent of the current minimum pension. By August 2010, these figures will rise to 70 percent and 150 percent, respectively (Asociación AFP 2004a).

Pension Reform: Policy Challenges and Reform Provisions

Law 20.255 is based largely on the July 2006 President's Pension Advisory Commission Report (Marcel Commission 2006).[13] According to the Commission, the capitalization system is geared toward workers with stable jobs who regularly contribute to an individual account for their entire working lives. The report contends that the system needs to adapt to the changing social conditions in Chile.

The nature of the labor force has been evolving over the past 25 years. Workers are relying less on indefinite labor contracts and more on fixed-term contracts and temporary and part-time jobs. Also, typically, workers in less stable jobs do not regularly contribute to individual accounts. Chile's population is aging and life expectancy is increasing. The population aged 60 or older currently represents 12 percent of the total population and is expected to increase to 17 percent by 2020 and 28 percent by 2050. Since 1980, life expectancy at birth has grown from 70.7 years to 78.5 years and life expectancy at age 60 increased from 16.8 years to 20.7 years for men and 20.2 years to 24 years for women. In addition, more workers are postponing their entrance into the labor force because higher education is available for more individuals aged 15 to 24. As a result, workers are spending fewer years in the accumulation phase for retirement.

The report identified several goals for reforming the 26-year old system of individual accounts including expanding pension coverage, providing an adequate pension, and encouraging competition among the AFPs to lower workers' costs, which would result in a higher net rate of return and a higher pension. This section describes each policy challenge or set of challenges followed by a summary of the reform measure that addresses those issues.[14]

Policy Challenge: Coverage of Workers and Contribution Patterns

A large portion of Chile's labor force has not been covered by any social security program. About 4 million workers, or 61 percent of the labor force, have been covered by either the public PAYG or the individual account system. This figure is about 10 percentage points higher than in 1980 but about the same level as in the mid-1970s, the period just prior to the implementation of the capitalization system (Marcel Commission 2006).

Workers covered by either system include those who do not regularly make contributions because they spend periods of time out of the formal labor force, either in the informal sector or unemployed. While they are in the informal sector or unemployed, they don't contribute to an individual account, which could result in an inadequate pension. Based on their contribution history to date, only a small portion of these workers with an individual account would have enough contributions to qualify for the guaranteed minimum benefit at retirement (Marcel Commission 2006).

Since 1981, the capitalization system has not improved the contribution patterns of workers in the labor force. In 1975, 71 percent of employed workers contributed to the PAYG system and by 1980 that figure had declined to 53 percent (Marcel Commission, 2006). Chart 2 shows that the percent of affiliates (workers with individual accounts) who contributed to their account regularly or sporadically declined from 76 percent in 1983 to 54 percent in 2007 (SAFP 2007; SUPEN 2007–2008). From one month to another, the workers who contribute sporadically are not necessarily the same workers (Arenas de Mesa and others 2006; Berstein, Larrain, and Pino 2006).

Coverage figures for the self-employed, about one-quarter of all workers, are even lower. Their participation has been voluntary and nearly 60 percent have been AFP affiliates. By 2007, close to 40 percent of self-employed affiliates actively contributed to an individual account (Bertranou and Vásquez 2007).[15]

The Social Protection Survey (*Encuesta de Previsión Social* or EPS) conducted by the University of Chile under the aegis of the undersecretary of social security provides a rich source of data for workers' contribution patterns in the capitalization system.[16] A study by several SAFP officials (Berstein, Larrain,

Chart 2.
Percentage of affiliates that contributed to their individual accounts, 1982–2007
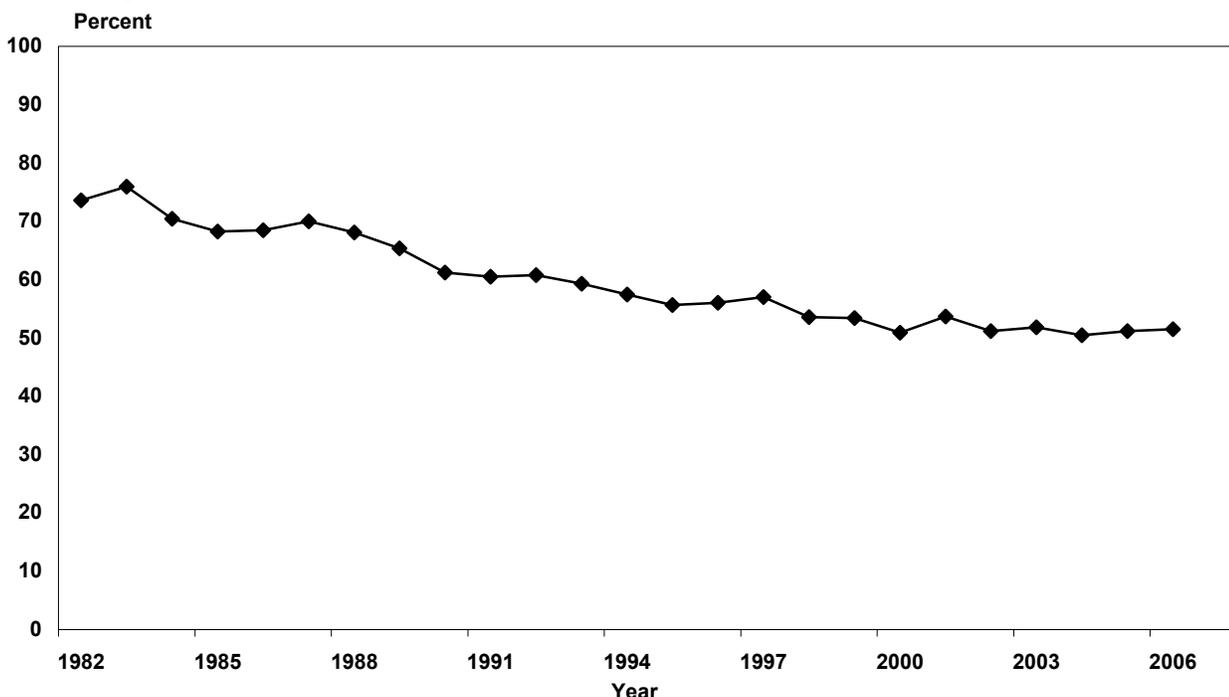
Percent

and Pino 2006) that links EPS data with administrative data of some 24,000 individuals found that:

- 20 percent of men and women contributed more than 90 percent of the time, and

- 10 percent of men and 20 percent of women contributed less than 10 percent of the time.

The study also shows the percentage of time workers typically spent in the formal and informal labor force. Women had shorter work histories than men, and men were more likely than women to be formal workers with a contract. Workers in the informal sector do not contribute to social security.[17] Since women, on average, spent more than 50 percent of their working lives outside the formal sector, they contributed to their individual accounts less than 50 percent of their potential working lives.

The 2006 EPS (which covers the period between 2004 and 2006) found that about half of those surveyed were affiliates. Of the affiliates, men contributed on average about 60 percent of the time and women about 40 percent. Workers contributed about three quarters of the time that they were employed. There was no significant difference between employed men and women. More than 50 percent of those surveyed had worked 100 percent of the time and nearly 25 percent had not worked at all. About 20 percent of the

men surveyed were unemployed compared with close to 50 percent of the women (Bravo and others 2008).

Other studies found that workers with higher levels of education and higher income generally contributed more often to social security programs than other groups. The Marcel Commission reported that in Chile about 30 percent of low-income workers contributed to social security, compared to about 70 percent of high-income workers.

Policy Challenge: Pension Adequacy

Even though the Chilean government has provided a guaranteed minimum pension (MPG) to account holders aged 65 or older (men) and aged 60 or older (women) with 20 years of contributions, a large percentage of current workers would not have been eligible for this guarantee.[18] A 2006 study done by several SAFP officials (Berstein, Larrain, and Pino 2006) estimated that, based on the proportion of AFP members who have contributed to an individual account, about 45 percent of them were expected to have a pension that is below MPG and most of this group would not have qualified for the MPG. In 2005, about two-thirds of these workers had fewer than 10 years of contributions. The study predicted that without any changes, by 2025 about 85 percent of these workers would not have enough years of contributions for the MPG.

Pensioners who have chosen the programmed with-drawal option may have been able to receive the MPG when they have exhausted their funds by outliving their actuarial life expectancy. Studies have found that those who choose programmed withdrawal generally have lower account balances than those who choose annuities.[19] As of 2003, about 15 percent of all old-age pensioners with programmed withdrawals were receiving the MPG, compared with 44 percent of disability beneficiaries and 19 percent of survivors (James and Iglesias 2007).

In 2005, an average monthly pension from the individual account system was 131,615 pesos per month (US$252) (SAFP 2007) compared with the minimum monthly wage of 127,500 pesos (US$244) (SAFP 2005–2008). However, it is important to note that to date, almost no one has retired with a benefit that is entirely from the individual account system. A portion of these pensions comes from the recognition bond funded from general revenues that represents the worker's accrued value under the public PAYG system.[20]

If no changes were made to the system, most workers with an individual account who retired between 2020 and 2025 would not receive a benefit equal to about 75 percent of their pre-retirement earnings, the goal of the architects of the system. The Superintendent of AFPs estimated an average replacement rate of 44 percent of earnings for this group of retirees. However, there is a wide variation in the rate when considering gender and educational level. Women with an elementary school education were projected to receive an 11 percent replacement rate and those with a university degree 30 percent compared with 47 percent and 110 percent, respectively, for men (Berstein, Larrain, and Pino 2006).

On the whole, workers who retire early receive a lower benefit than if they would have waited until the normal retirement age (65 for men and 60 for women). As of December 2006, almost half of old-age retirees took early retirement. Close to 70 percent of these early retirees were aged 50 to 59 and about 11 percent were under age 50 (SAFP 2005–2008). A 2004 study by the AFP Association (Asociación AFP 2004a) found that for every year a worker retired early, the worker's pension decreased on average between 7 percent and 10 percent. Between 2002 and 2004, on average, women retired 7 years early and men 9 years early. Some of these workers also withdrew the excess funds from their accounts, which further reduced their benefit. The study concluded that if the early retirees

had waited until the normal retirement age and had not withdrawn excess funds, the average pension would have doubled.

Pension Reform: Coverage, Contribution Patterns, and Adequate Pensions

Law 20.255 adds a new pillar, known as *Sistema de Pensiones Solidarias* (SPS), to the existing mandatory individual accounts system to expand coverage and provide a basic benefit to a larger percentage of the population. As of July 1, 2008, the means-tested (PASIS) pension was replaced with a noncontributory basic solidarity pension called Pensión Básica Solidaria (PBS). This benefit initially covers 40 percent of the poorest individuals in Chile and will be extended gradually to 60 percent of the poorest individuals by 2012. The government estimates that about 600,000 people will be covered in 2008 and by 2012 about 1.3 million people will receive the basic solidarity pension.

The SPS also provides a top-up benefit called Aporte Previsional Solidario (APS) for those individuals who have contributed to an individual account and whose self-financed monthly benefit is between 50,000 pesos (US$97) and 150,000 pesos (US$290) in 2008 gradually rising to 255,000 pesos (US$494) by 2012. Table 2 provides some details about the PBS and the APS (Ministerio del Trabajo y Previsión Social 2008). Pensioners who were receiving the guaranteed minimum pension when the new pillar was implemented on July 1, 2008, may switch to the SPS. Individuals aged 55 or older in March 2008 who will qualify for the guaranteed minimum pension at retirement may also choose between the two types of benefits. Both of these groups may only exercise this option once.

The reform gradually extends mandatory coverage in the individual account system to the self-employed. Their participation is currently voluntary. Beginning January 1, 2012, contributions by the self-employed will be based on 40 percent of taxable earnings, increasing to 100 percent by January 1, 2014. Beginning January 1, 2015, all self-employed will be required to contribute 10 percent of their taxable earnings to an individual account.

Another provision seeks to encourage youth employment and participation in the capitalization system. The measure requires the government to provide a monthly subsidy to low-income workers (those who earn less than one and a half times the minimum wage,

Table 2.
Solidarity pensions system, requirements, and benefits

Solidarity pensions system benefit	Eligibility requirements	Monthly benefit
Basic solidarity pension (PBS)	**Old-age pension:** not eligible for any other pension, age 65 or older, lived in Chile for at least 20 years including 4 of the 5 years immediately prior to applying for a benefit.	60,000 pesos (US$116) until 2010; 75,000 pesos (US$145) until 2012
	Disability pension: assessed as disabled by Medical Commission, not eligible for any other pension, age 65 or older, lived in Chile for at least 5 of the 6 years immediately prior to applying for a benefit.	
Social security solidarity contribution (APS)	**Old-age and disability pensions:** must have contributed to an individual account and have a self-financed pension between 50,000 pesos (US$97) and 70,000 pesos (US$135) a month in 2008, rising to 255,000 pesos (US$494) a month by 2012.	top-up benefit (e.g., up to about 17,000 pesos (US$33) a month in 2008)

238,500 pesos (US$462) per month in July 2008) between ages 18 and 35 and their employers for the first 24 months of employment after they first enter the labor force. Beginning October 1, 2008, the employer subsidy is equal to half of a contribution to an individual account based on the minimum wage (7,950 pesos (US$15) per month in July 2008) and will be provided each time the worker contributes to an individual account. The workers' contributions are not required to be continual. Beginning July 1, 2011, the subsidy for the low-income workers, the same amount as the employers' subsidy, will be deposited into a worker's individual account each time the worker contributes.

Policy Challenge: Toward Gender Equity

Since 1980, the role of women in the family has been affected by the change in structure of a typical household. With the average size of a household decreasing from 4.5 to 3.3 members between 1980 and 2006, the importance of the extended family as a support system has been reduced. Also, between 1992 and 2002, the percent of the population that was married fell from 52 percent to 46 percent. Since 1980, the proportion of one-person households has risen from 7 percent to 13 percent, of which 60 percent are headed by women, who generally have lower earnings, do not qualify for social security benefits, and may not have access to intrafamily transfers (Marcel Commission 2006; Mideplan 2007).

Generally, more men in Chile are in the labor force than women. Chilean women represent 38 percent

of the labor force, compared to 44.7 percent in all of Latin America (Umar 2007). Women have shorter work histories than men and men are more likely than women to be formal workers with a contract. Workers in the informal sector do not contribute to social security. Since women, on average, spend more than 50 percent of their working lives outside the formal sector, they contribute to their individual accounts less than 50 percent of their potential working lives (Berstein, Larrain, and Pino 2006).

A greater proportion of lower income women than men are unemployed, and women tend to work fewer hours in paid labor than men, in part to care for children, older family members, and the household. On the whole, women earn lower salaries than men. According to the latest household survey (CASEN), 29 percent of female workers earn the minimum wage compared with 9.2 percent of male workers. For those with the fewest years of education, men earn close to 25 percent more than women (Marcel Commission 2006; Mideplan 2007). As a result, women have contributed less than men to individual accounts and have had lower account balances, which provide lower retirement benefits.

Since women generally live longer than men, but retire at a younger age and have lower account balances, women's pensions have been between 30 percent to 40 percent less than men's. Also, because companies must use gender-specific mortality tables to calculate annuities, women with the same account balances as men at retirement receive smaller monthly

pensions. However, the total value of all future pension payments have been about the same for women and men with the same account balances, since women usually live longer (Marcel Commission 2006).

Under the old rules, married men are required to finance an annuity that provides a survivor benefit to widows; married women have to finance an annuity with survivor benefits only for their disabled husbands. Widows are permitted to receive both a survivor pension and a pension from their own individual account.

Pension Reform: Toward Gender Equity

A number of reform measures address gender equity.[21] Beginning July 1, 2009, to increase a woman's pension, the government will provide a woman aged 65 or older with a bond equal to 18 monthly contributions based on the minimum wage, for each child she had. The bond covers the period of time from the child's birth up to the woman's 65th birthday. The rate of return will be based on the average annual rate (nominal) for Fund C less administrative fees for that time period. Both biological and adoptive mothers may receive the bond. The bond may be redeemed after the woman's 65th birthday and is combined with her retirement pension at that time.

Women who are eligible for this bond include those who have contributed to an individual account at least once during their working lives, those who receive the basic solidarity pension, and those who receive a survivor pension from either the individual account system or the public pension system. Women who retired before July 1, 2009, are not eligible for the bond.

Another measure to increase a woman's pension is related to premiums for survivors and disability insurance. An insurance company must calculate these premiums based on gender. Since women generally have lower incidences of survivors and disability claims, their rates are expected to be lower in most cases. The company will continue to charge the same premium for men and women, but refund to each woman the difference between the rate that she would have received and the rate for a man. That refund will be deposited directly into a woman's individual account and she will have a higher pension as a result.

Other provisions of the new law provide more gender equity:

- Widowers can become eligible for a survivor pension. (Previously, only disabled widowers were eligible.)

- In case of divorce or marriage annulment, the assets in an individual retirement account can be divided evenly between the ex-spouses, beginning October 1, 2008. Each ex-spouse can only receive 50 percent of the amount that had been accumulated during the marriage.[22]

- A worker is allowed to contribute to another person's individual account. The contribution must be at least based on the minimum salary.

- Women and men must be covered for survivors and disability insurance up to age 65. (Previously, women were covered up to age 60 and men up to age 65.)

- Beginning January 1, 2011, wages for domestic workers must be no less than the minimum wage for a full week of work or a percentage of the minimum wage for part-time work.[23] This will increase domestic workers' earnings and could result in a higher pension for these workers.

Policy Challenges: AFP Fees, Competition, and Profits

AFPs are a major focus of the pension reform. Since there has been little competition among the AFPs, the administrative fees they charge account holders are high, resulting in profits that are much larger than other sectors of Chile's financial services industry. Account holders have had lower net rates of return (and smaller pensions) in part because AFPs have charged high administrative fees.

Administrative Fees

Administrative fees charged to account holders have been high according to international standards. AFPs have been allowed to charge two types of administrative fees each time a worker contributes to an individual account: a percentage of earnings and a fixed fee. Between 1981 and 1987, the AFPs were also permitted to charge fees on the account balance. According to Mesa Lago and Arenas de Mesa (2006), the average cost of the combined fees to account holders increased by 4.8 percent between 1982 and 2003. In September 2008, the five existing AFPs charged an average of 1.71 percent of earnings and two out of the five AFPs charged fixed monthly fees: 320 pesos (US$0.61) and 690 pesos (US$1.31) (SUPEN 2007–2008).

Account holders only pay an administrative fee when they contribute to their account. In effect, the contributors are subsidizing the noncontributors. According to the Association of AFPs (2008a), by the

end of 2007, some 3.5 million mandatory individual accounts (about 40 percent of all mandatory accounts) were subsidized. This means that about 40 percent of affiliates with mandatory accounts were noncontributors and were not paying any administrative fees.

Even though most AFPs had eliminated the fixed fee by the middle of 2008, they raised their percentage of earnings fees. In April 2006, when five of the six AFPs charged a fixed fee, they charged an average 1.60 percent of earnings fee. As of April 2008, when only two AFPs had fixed fees, the average percentage of earnings fees was 1.67 percent (SAFP 2005–2008).

Fixed fees are proportionately higher for low-wage earners than for high-wage earners. For example, between 1981 and 2004, a low-income affiliate with about US$315 in an individual account had an average real net rate of return of 6.2 percent per year compared with 8.2 percent per year for a higher income affiliate with a US$950 account balance (Mesa Lago and Arenas de Mesa 2006). The higher cost of the fixed fees on lower earners could have created a disincentive to participate in the individual account system (Gill, Packard, and Yermo 2005).

A 2005 SAFP study (Castro 2005a) calculated the effect of the fixed fee on a worker's final account balance just before retirement: a 1 percent reduction in the fixed fee would result in a 9 percent increase over the worker's lifetime for lower earners and a 3 percent increase for an average earner. The effect on higher earners is even lower. By completely eliminating the fixed fees, a minimum wage worker's account balance would increase by 4 percent each time he or she contributed and an average earner's balance would increase by 1.5 percent. The fixed fee represented about 9 percent of AFP earnings.

The 2005 study also concluded that eliminating the fixed fee would encourage competition among the AFPs while reducing AFP profits. The study predicted that AFPs would probably raise their percentage of earnings fees by 20 percentage points and would probably offer fewer products for the lower earner. If workers in general paid no fixed fee, their pensions could increase by between 15 percent and 20 percent. As a result, by 2024 the government would pay about 5.5 percent less for the guaranteed minimum benefit because workers' pensions would be higher.

The International Association of Pension Fund Management Companies Supervision Bodies (*Asociación Internacional de Organismos de Supervisión de Administradoras de Fondos de Pensiones* or AIOS)

compared administrative fees as a percentage of the contribution to an individual account (mandatory contribution plus administrative fees) in 10 Latin American countries as of June 2007. In some countries both the employer and the employee are required to make monthly contributions. Table 3 shows that the fees ranged from 4.8 percent of the contribution in Bolivia to 17.8 percent in Argentina and the fees in Chile represented 14.6 percent of the contribution (AIOS 2007).

Competition Among the AFPs

Since there has been little competition among the five existing AFPs, little incentive exists for them to lower their fees. According to the Marcel Commission, competition is weak because:

- Most workers do not compare administrative fees before choosing an AFP.

Table 3.

Fees and contributions in individual accounts in Latin American countries as of June 2007 (percent)

Country	Admin fee [a]	Mandatory contribution [a]	Fees as a percentage of contributions
Argentina	1.00	4.61	17.8
Bolivia [c]	0.50	10.00	4.8
Chile	1.71	10.00	14.6
Colombia [d]	1.58	11.00	12.6
Costa Rica	0.29	3.96	6.7
Dom Rep	0.60	7.40	7.5
El Salvador	1.40	10.00	12.3
México	1.02	7.48	12.0
Peru	1.81	10.00	15.3
Uruguay [e]	1.79	12.22	12.8

SOURCE: AIOS 2007.

NOTE: AIOS = Asociación Internacional de Organismos de Supervisión de Administradoras de Fondos de Pensiones.

a. As a percentage of the worker's salary.

b. The employee's contribution as a percentage of salary, except in Colombia, Dominican Republic, El Salvador and Mexico where the figure also includes the employer's contribution as a percentage of covered payroll.

c. A fee for administering the investment portfolio is also charged.

d. Fees are also charged for transferring, exiting, and making voluntary contributions.

e. A custody fee on the account balance is also charged.

- AFPs are required to charge all their members the same fees. Since the profit margins are higher for higher earners, AFPs have tended to target higher earners. AFPs did not have to lower their fees since they often used gifts and other incentives to lure new members.

- Regulatory barriers have made it hard for new companies to enter the pension market. Banks are specifically prohibited from setting up an AFP.

When the system of individual accounts was implemented in 1981, there were 12 AFPs and by 1994, there were 21. In 2008 there are five AFPs. The decline in the number of AFPs was due to mergers and closures. Also, between 1982 and 2007, the percentage of affiliates in the largest three AFPs grew from 64 percent to nearly 80 percent (Mesa Lago and Arenas de Mesa 2006; SAFP 2005–2008).

AFP Profits

Pension fund industry profits have been much higher than other related industries. Between 1991 and 2004, AFPs earned an average of 27 percent on assets compared with an average of 15.7 percent during the same period for the Chilean financial services industry. In 2005, administrative fees represented 91 percent of an AFP's income and the yield on investments from the reserve fund was about 8 percent. AFP expenses for the same year included the cost of survivors and disability insurance (51 percent), administrative expenses (30 percent) and sales force salaries (11 percent) (Marcel Commission 2006).

Pension Reform: AFP Fees, Competition, and Profits

To increase competition among AFPs and lower costs to account holders, Law 20.255:

- Eliminates the monthly fixed administrative fees that most AFPs charge their account holders.

- Assigns all new labor force entrants to an AFP with the lowest fees. The AFP would have to maintain that fee for 24 months and offer the same low-rate fee structure to all its account holders.

- Eliminates the rate-of-return fluctuation fund and distributes the monies to AFP members beginning October 1, 2008. Previously, if a particular AFP fund's (Funds A through E) performance exceeded the average by a given percentage, it had to place the excess in a rate-of-return fluctuation fund. If any AFP fund's performance fell below the average, it had to make up the difference from both its excess rate-of-return and reserve funds.

- Improves AFP efficiency by allowing them to contract out certain functions such as administering the individual accounts and receiving applications for pensions and submitting them to the appropriate AFPs.

- Allows insurance companies to set up AFPs as a subsidiary. Congress rejected the provision that allows banks to set up an AFP as a subsidiary.

A number of provisions of the new law aim to improve the system's rate of return. A 1 percent increase in the rate of return during a person's working life can increase a pension by about 20 percent. The law gradually increases the limit on foreign investments to 80 percent of assets (from the current 45 percent) and intends to make the structure of all investment limits more flexible. For advice on investment of assets, a technical investment council will be created. The council will have five members: one designated by the president, another by the Central Bank, one by the AFPs, and two nominated by the deans of economic departments in accredited Chilean universities. In addition, each AFP must set up a technical investment committee that establishes investment policies for each type of fund.

Policy Challenge: Premiums for Survivors and Disability Insurance

Premiums for survivors and disability insurance have increased recently, another cost for the worker. Each AFP contracts with an insurance company to provide survivors and disability insurance for its account holders. The amount of the premium has varied from one AFP to another and the average premium among all the AFPs has fluctuated over time. Between 1994 and 2003, the average premium rose from 0.86 percent to 1.14 percent of a worker's earnings (Castro 2005b). At the end of 2006, the average cost was 0.73 percent of a worker's earnings and by September 2008, that figure had risen to 0.99 percent (SUPEN 2007–2008).

Pension Reform: Survivors and Disability Insurance

Law 20.255 makes a number of changes to survivors and disability insurance:

- All AFPs must select an insurance company for survivors and disability insurance through a bidding process.

- Premiums will be the same for all account holders.

- Beginning July 1, 2009, employers must pay the cost of survivors and disability insurance for their employees. Until June 2011, employers with fewer than 100 employees will be exempt.

The disability determination process has also been changed. While the definitions of total and partial disability remain the same (according to the percentage loss of earning capacity), a worker will no longer have a 3-year waiting period to be assessed as permanently totally disabled. Only partial disability will require a final assessment after 3 years. In addition, a worker will be able to select his or her own doctor for a medical evaluation, paid for by the worker. Otherwise the Medical Commission will pay for an evaluation performed by the doctor that it selects (Asociación AFP 2008b).

Policy Challenge: Voluntary Retirement Savings

Workers have not saved enough for retirement through additional voluntary contributions. Since August 1987, they have been permitted to set up separate voluntary retirement savings accounts. A 2002 law provides tax incentives for voluntary retirement savings and encourages competition by allowing other types of institutions—including banks, brokerage houses, insurance companies, and mutual funds—to offer voluntary retirement savings accounts (Kritzer 2001/2002). However, the tax incentives have benefited mainly higher income workers (Berstein, Larrain, and Pino 2006). At the end of 2006, 20 percent of the close to 7.7 million AFP members had voluntary retirement savings accounts. Nonetheless, 46 percent of these accounts had a zero balance (SAFP 2005–2008).

Pension Reform: Voluntary Retirement Savings

The reform includes a provision to encourage more voluntary retirement savings. At present, few Chilean companies offer occupational pension plans. One reform measure creates employer-sponsored voluntary pension plans, known as *Ahorro Previsional Voluntario Colectivo* (APVC), which target the middle class. APVC supplements the existing voluntary retirement savings accounts beginning in October 2008. Both employers and employees can contribute to an APVC. Workers enrolled in an APVC plan who contribute up to 1.5 million pesos (US$2,913) a year to a voluntary account (and regularly contribute to a mandatory retirement account) will be eligible for an annual government subsidy of 15 percent of the amount that the worker has voluntarily saved for retirement.[24]

Policy Challenge: Financial Literacy

Workers on the whole do not understand the system of individual accounts, according to the results of the EPS. The Marcel Commission acknowledged that the system is difficult to comprehend.

According to the EPS for 2004, most of those surveyed did not know how their pensions were calculated, did not understand the relationship between contributions to an individual account and their pensions, and were not familiar with the basic facts about the guaranteed minimum pension and its requirements. EPS findings include:

- Fewer than 50 percent of those surveyed reported that they were aware of the required monthly contribution; only about 30 percent of respondents provided accurate answers. About 2 percent were familiar with either the fixed or percentage administrative fee; none were familiar with both types of fees.

- Of the 50 percent who reported that they were aware of how much they had in their individual account, the amount that two-thirds of them reported was more than 20 percent different from the actual amount.

- Only about 8 percent of those surveyed knew how pensions are calculated.

- Even though half of them stated that they knew about the multifunds, only 20 percent knew how many fund options exist.

- Those with less education and less money are less likely to have knowledge about the system.

- The majority of those surveyed knew the correct normal retirement age.

- About two-thirds of the pensioners surveyed were aware of what kind of benefit they receive, but the amount they reported receiving ranged from 20 percent less to 20 percent more than the actual benefit amount (Bravo 2006; Arenas de Mesa and others 2006).

Pension Reform: Financial Education

To improve financial literacy in Chile, the new law establishes a social security education fund, financed

by contributions from the state and private donations to develop a financial education program through a competitive process. The fund was set up in July 2008 and is supervised by the ministry of labor and under-secretary of social security. Also, the government will establish an accreditation system for pension advisors to create a network of professional advisors that provide professional and independent financial advice to account holders. These professional advisors will be permitted to charge a fee of 2 percent of the worker's individual account balance, up to a maximum of 60 UF (US$ 2,427) (Asociación AFP 2008a).

Pension Reform: New Government Agencies

The reform creates a new organizational structure. On July 4, 2008, the Superintendent of Pensions (SUPEN) replaced the Superintendent of Pension Fund Management Companies (SAFP) (SUPEN 2008). SUPEN supervises both the mandatory and voluntary individual account systems and oversees the Social Security Institute (IPS), another new agency responsible for the new solidarity pillar as well as the public PAYG pension system. The IPS will set up local offices around the country to provide more access and better service to the insured.

Every 5 years SUPEN and the ministry of finance's budget director will be responsible for an actuarial study that evaluates the effect of demographic and financial changes on the replacement rates for the individual account system.

Projected Cost of the Reform

The Marcel Commission estimated the annual cost of the new solidarity pillar at 2.5 percent of GDP and its recommended changes to the contributory pillar at about 2.9 percent of GDP. By 2025, these combined annual costs could equal about 1.3 percent of GDP more than the cost of operating the current system including means-tested benefits and the obligations of the PAYG public system (benefits to current pensioners plus the recognition bonds). To provide greater financial stability for future social program spending, the government set up a pension reserve fund in 2006, financed in part from the budget surplus and the revenues from the sale of copper[25] (SSA 2006–2008).

Conclusion

In 1981, Chile was the first country to switch from a public PAYG pension system to individual accounts.

Over the years, the system has undergone some major changes, including broadening the allowable investments and introducing a choice of several types of pension funds with varying degrees of risk levels. Twenty-six years later, the country's new pension reform law provides the most comprehensive overhaul of the individual account system since its inception. The International Monetary Fund supports these changes because they strive to retain the basic features of the individual account system and, at the same time, address its major shortcomings. The reform expands coverage and creates a basic benefit for many Chileans who would not otherwise qualify for a pension. Other measures will improve gender equity, encourage competition in the pension fund industry, and lower costs to help raise the net rate of return for account holders; thus, providing higher pensions.

Since the 1990s, 10 other Latin American countries have adopted some form of an individual account system either to replace or supplement their PAYG systems. As other capitalization systems in the region have matured, they too have begun expanding allowable AFP investments and a few have increased the number of fund choices. Just as Chile has passed a major overhaul of its individual account system, other countries are beginning to examine the shortcomings of their systems. Peru has set up a pension commission and Uruguay has created a "social security dialogue." Mexico introduced multifunds in March 2008 and Colombia will follow suit. Both Argentina and Peru have passed laws that allow workers to switch back to the public system.

Chile's next generation pension reform could influence changes in a number of these Latin American countries. Law 20.255 addresses many of the same issues that other systems are confronting and can serve as a frame of reference for these other countries. The individual account systems in each of these countries are a work in progress.

Notes

[1] Unidad de Fomento (UF) is a monetary unit adjusted daily to reflect changes in the consumer price index. In Chile, most financial contracts, including pensions, are denominated in UFs. On September 4, 2008, one UF equaled 20,820.35 pesos (US$40) (http://www.uf.cl).

[2] For a more extensive comparison of the different options at retirement, see Asociación AFP 2008d.

[3] This fourth option was created by the 2004 Annuities Law.

[4] As of April 2008, the monthly MPG for retirees under age 70 was 96,390.73 pesos (US$187), between ages 70 and 75 was 105,395.85 pesos (US$204) and 75 or older, 112,453.82 pesos (US$218). At the same time, the minimum monthly wage was 144,000 pesos (US$330) (SAFP 2005–2008).

[5] To qualify for the MPG, a disabled worker must have at least 2 years of contributions in the 5 years before the onset of the disability or be making contributions at the onset of the disability (SSA 2008).

[6] Workers compensation is a separate program.

[7] When the provisions of the new law relating to disability are implemented, the disability determination process will be modified (see section "Pension Reform: Survivors and Disability Insurance.")

[8] An immediate annuity, a deferred annuity, and an immediate annuity with programmed withdrawals.

[9] The minimum and maximum rate of return has been a requirement since the inception of the program. The multi-fund law expanded the requirement so that each type of fund has its own minimum and maximum rates of return.

[10] The Association of AFPs publishes a series entitled, "Multifonds, Resultados y Tendencias" every 3 months that monitors the performance of the multifunds. The most recent issue is March 2008 (Asociación AFP 2008c).

[11] In the 1980s a major portion of AFPs assets under management were in government bonds. At that time, the government paid high interest rates to the AFPs for these bonds, especially during the first few years after the individual account system was implemented. Several analysts also consider these high interest rates a result of the government fiscal crisis in 1982 that raised the bonds' risk level (Williamson 2005).

[12] For more information on SCOMP, see Asociación AFP 2004b.

[13] The President's Pension Advisory Commission was appointed by President Bachelet in March 2006 to evaluate the individual accounts system. The Commission, also known as the Marcel Commission (Mario Marcel, the former budget director, led the Commission), presented their report to the President in July 2006. It contained a comprehensive evaluation of the system as well as 70 reform proposals (Marcel Commission 2006; SSA 2006–2008).

[14] The sources for the details of law 20.255 are Ministerio del Trabajo y Prevision Social 2008 and DL 20.255, unless otherwise noted.

[15] For a detailed study on social security coverage of the self-employed, see Bertranou and Vásquez 2007.

[16] The 2002 survey was called the History of Labor and Social Security Survey. After the 2004 EPS was conducted, to simply the terminology, researchers began to refer to the 2002 survey as an EPS as well. The EPS was conducted for 2006 and is scheduled for 2008. It is expected every two years after that, subject to funding availability (Bravo 2008; Arenas de Mesa and others 2006; Berstein, Larrain, and Pino 2006). For more information on the EPS, go to http://www.proteccionsocial.cl/noticias.asp

[17] For an extensive study on the informal sector in Chile and other countries in Latin America, see Perry and others 2007.

[18] The MPG is equal to about 25 percent of average wage for retirees younger than age 70. The MPG for those aged 70 to 74 is about 27 percent and 29 percent for those aged 75 or older (James and Iglesias 2007).

[19] About two-thirds of old-age pensioners have annuitized—most of them have retired early. Close to two-thirds of disability pensioners have programmed withdrawals (James, Martinez, and Iglesias 2006).

[20] Recognition bonds are calculated using wages paid between 1976 and 1980. In Chile, during this time period, there were high rates of unemployment. As a result, those without a job at the time would not be eligible for the recognition bond (Berstein, Larrain, and Pino 2006).

[21] The Marcel Commission proposal to raise the retirement age for women from age 60 to age 65 was not included in the President's pension reform bill.

[22] Divorce was legalized in Chile in 2004. A 2005 ruling stated that ex-wives (as a result of divorce or annulment) are not entitled to a widow's pension (Asociación AFP 2006).

[23] This change will be phased in—from 83 percent of the minimum wage beginning January 1, 2009 to 92 percent of the minimum wage a year later.

[24] Up to a ceiling of 217,000 pesos (US$422) as of August 2008.

[25] The Pension Reserve Fund has assets of more than US$1.1 billion (Gallardo 2008). By the end of 2007, the budget surplus reached about US$16.3 billion, 8.7 percent of the country's GDP (San Juan 2008).

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OASDI and SSI Snapshot and SSI Monthly Statistics

Each month, the Social Security Administration's Office of Retirement and Disability Policy posts key statistics about various aspects of the Supplemental Security Income (SSI) program at http://www.socialsecurity.gov/policy. The statistics include the number of people who receive benefits, eligibility category, and average monthly payment. This issue presents SSI data for August 2007—August 2008.

The Monthly Statistical Snapshot summarizes information about Social Security and the SSI programs and provides a summary table on the trust funds. Data for August 2008 are given on pages 86–87. Trust Fund data for July 2008 are given on page 87. The more detailed SSI tables begin on page 89. Persons wanting detailed monthly OASDI information should visit the Office of the Actuary's Web site at http://www.ssa.gov/OACT/ProgData/beniesQuery.html.

Monthly Statistical Snapshot

Table 1. Number of people receiving Social Security, Supplemental Security Income, or both
Table 2. Social Security benefits
Table 3. Supplemental Security Income recipients
Table 4. Operations of the Old-Age Survivors Insurance and Disability Insurance Trust Funds

The most current edition of Tables 1–3 will always be available at http://www.socialsecurity.gov/policy/docs/quickfacts/stat_snapshot. The most current data for the trust funds (Table 4) are available at http://www.socialsecurity.gov/OACT/ProgData/funds.html.

Monthly Statistical Snapshot, August 2008

Table 1.

Number of people receiving Social Security, Supplemental Security Income, or both, August 2008 (in thousands)

Type of beneficiary	Total	Social Security only	SSI only	Both Social Security and SSI
All beneficiaries	55,345	47,876	4,848	2,621
Aged 65 or older	36,541	34,512	870	1,159
Disabled, under age 65 [a]	11,946	6,506	3,978	1,462
Other [b]	6,858	6,858	. . .	. . .

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data. Social Security Administration, Supplemental Security Record, 100 percent data.

NOTES: Data are for the end of the specified month. Only Social Security beneficiaries in current-payment status are included.

. . . = not applicable.

a. Includes children receiving SSI on the basis of their own disability.

b. Social Security beneficiaries who are neither aged nor disabled (for example, early retirees, young survivors).

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 2.

Social Security benefits, August 2008

	Beneficiaries			
Type of beneficiary	Number (thousands)	Percent	Total monthly benefits (millions of dollars)	Average monthly benefit (dollars)
All beneficiaries [a]	50,497	100.0	50,222	994.50
Old-Age Insurance				
Retired workers	32,113	63.6	34,878	1,086.10
Spouses	2,399	4.7	1,282	534.30
Children	499	1.0	269	539.40
Survivors Insurance				
Widow(er)s and parents [b]	4,406	8.7	4,526	1,027.40
Widowed mothers and fathers [c]	162	0.3	127	787.60
Children	1,851	3.7	1,306	705.60
Disability Insurance				
Disabled workers	7,272	14.4	7,302	1,004.10
Spouses	151	0.3	40	267.70
Children	1,645	3.3	491	298.30

SOURCE: Social Security Administration, Master Beneficiary Record, 100 percent data.

NOTES: Data are for the end of the specified month. Only beneficiaries in current-payment status are included.

Some Social Security beneficiaries are entitled to more than one type of benefit. In most cases, they are dually entitled to a worker benefit and a higher spouse or widow(er) benefit. If both benefits are financed from the same trust fund, the beneficiary is usually counted only once in the statistics, as a retired-worker or a disabled-worker beneficiary, and the benefit amount recorded is the larger amount associated with the auxiliary benefit. If the benefits are paid from different trust funds the beneficiary is counted twice, and the respective benefit amounts are recorded for each type of benefit.

a. Includes special age-72 beneficiaries.

b. Includes nondisabled widow(er)s aged 60 or older, disabled widow(er)s aged 50 or older, and dependent parents of deceased workers aged 62 or older.

c. A widow(er) or surviving divorced parent caring for the entitled child of a deceased worker who is under age 16 or is disabled.

CONTACT: Hazel P. Jenkins (410) 965-0164 or oasdi.monthly@ssa.gov for further information.

Monthly Statistical Snapshot, August 2008

Table 3.
Supplemental Security Income recipients, August 2008

| | Recipients | | | |
| | Number (thousands) | Percent | Total payments [a] (millions of dollars) | Average monthly payment [b] (dollars) |
Age				
All recipients	7,469	100.0	3,809	477.40
Under 18	1,137	15.2	675	569.90
18–64	4,303	57.6	2,332	492.30
65 or older	2,029	27.2	802	394.20

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month.

a. Includes retroactive payments.

b. Excludes retroactive payments.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

July 2008

Table 4.
Operations of the Old-Age and Survivors Insurance and Disability Insurance Trust Funds, July 2008
(in millions of dollars)

Component	OASI	DI	Combined OASI and DI
Receipts			
Total	47,910	7,809	55,719
Net contributions	44,095	7,488	51,583
Income from taxation of benefits	3,796	315	4,112
Net interest	19	5	24
Payments from the general fund	0	0	0
Expenditures			
Total	43,068	8,965	52,033
Benefit payments	42,806	8,763	51,570
Administrative expenses	261	202	463
Transfers to Railroad Retirement	0	0	0
Assets			
At start of month	2,139,721	219,820	2,359,541
Net increase during month	4,843	-1,157	3,686
At end of month	2,144,564	218,663	2,363,227

SOURCE: Data on the trust funds were accessed on October 1, 2008, on the Office of the Chief Actuary's Web site at http://www.socialsecurity.gov/OACT/ProgData/funds.html.

NOTE: Totals may not equal the sum of the components because of rounding.

Supplemental Security Income
August 2007–August 2008

SSI Federally Administered Payments

Table 1. Recipients (by type of payment), total payments, and average monthly payment

Table 2. Recipients, by eligibility category and age

Table 3. Recipients of federal payment only, by eligibility category and age

Table 4. Recipients of federal payment and state supplementation, by eligibility category and age

Table 5. Recipients of state supplementation only, by eligibility category and age

Table 6. Total payments, by eligibility category, age, and source of payment

Table 7. Average monthly payment, by eligibility category, age, and source of payment

Awards of SSI Federally Administered Payments

Table 8. All awards, by eligibility category and age of awardee

The SSI Monthly Statistics are also available at http://www.socialsecurity.gov/policy/docs/statcomps/ssi_monthly/index.html.

Table 1.
Recipients (by type of payment), total payments, and average monthly payment,
August 2007–August 2008

| Month | Number of recipients | | | | Total payments [a] (thousands of dollars) | Average monthly payment [b] (dollars) |
	Total	Federal payment only	Federal payment and state supplementation	State supplementation only		
2007						
August	7,335,942	5,039,337	1,999,139	297,466	3,645,801	466.70
September	7,355,596	5,053,437	2,004,028	298,131	3,647,862	467.10
October	7,383,815	5,074,012	2,011,161	298,642	3,713,167	465.80
November	7,350,382	5,048,638	2,002,851	298,893	3,586,332	467.60
December	7,359,525	5,057,395	2,003,839	298,291	3,735,792	468.40
2008						
January	7,386,859	5,078,577	2,011,353	296,929	3,742,315	475.70
February	7,382,806	5,076,113	2,010,168	296,525	3,741,089	476.40
March	7,399,632	5,089,646	2,013,465	296,521	3,769,599	476.90
April	7,428,073	5,111,396	2,019,671	297,006	3,845,076	476.40
May	7,408,267	5,096,218	2,014,736	297,313	3,777,113	477.70
June	7,453,089	5,129,012	2,025,843	298,234	3,841,233	477.00
July	7,450,629	5,125,978	2,025,538	299,113	3,769,838	475.70
August	7,468,701	5,138,210	2,030,920	299,571	3,809,124	477.40

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month.

a. Includes retroactive payments.

b. Excludes retroactive payments.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 2.
Recipients, by eligibility category and age, August 2007–August 2008

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older
2007						
August	7,335,942	1,209,640	6,126,302	1,106,044	4,213,591	2,016,307
September	7,355,596	1,210,708	6,144,888	1,115,317	4,220,609	2,019,670
October	7,383,815	1,212,151	6,171,664	1,119,468	4,240,142	2,024,205
November	7,350,382	1,210,582	6,139,800	1,109,414	4,218,103	2,022,865
December	7,359,525	1,204,512	6,155,013	1,121,017	4,221,920	2,016,588
2008						
January	7,386,859	1,207,249	6,179,610	1,121,830	4,241,747	2,023,282
February	7,382,806	1,205,049	6,177,757	1,120,026	4,241,558	2,021,222
March	7,399,632	1,204,243	6,195,389	1,126,322	4,251,217	2,022,093
April	7,428,073	1,204,559	6,223,514	1,132,149	4,271,980	2,023,944
May	7,408,267	1,201,557	6,206,710	1,124,418	4,263,373	2,020,476
June	7,453,089	1,202,416	6,250,673	1,140,154	4,289,159	2,023,776
July	7,450,629	1,202,303	6,248,326	1,137,327	4,288,179	2,025,123
August	7,468,701	1,203,846	6,264,855	1,136,978	4,302,730	2,028,993

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 3.
Recipients of federal payment only, by eligibility category and age, August 2007–August 2008

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older
2007						
August	5,039,337	615,064	4,424,273	881,580	3,037,019	1,120,738
September	5,053,437	614,705	4,438,732	889,387	3,042,388	1,121,662
October	5,074,012	614,708	4,459,304	893,023	3,057,468	1,123,521
November	5,048,638	613,372	4,435,266	885,284	3,041,160	1,122,194
December	5,057,395	608,957	4,448,438	895,007	3,045,176	1,117,212
2008						
January	5,078,577	610,816	4,467,761	895,654	3,061,087	1,121,836
February	5,076,113	609,282	4,466,831	894,205	3,061,706	1,120,202
March	5,089,646	608,122	4,481,524	899,489	3,070,057	1,120,100
April	5,111,396	607,789	4,503,607	904,323	3,086,385	1,120,688
May	5,096,218	605,553	4,490,665	898,091	3,080,232	1,117,895
June	5,129,012	605,097	4,523,915	910,658	3,099,644	1,118,710
July	5,125,978	604,523	4,521,455	907,961	3,099,058	1,118,959
August	5,138,210	604,910	4,533,300	906,983	3,110,480	1,120,747

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 4.
Recipients of federal payment and state supplementation, by eligibility category and age,
August 2007–August 2008

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older
2007						
August	1,999,139	492,359	1,506,780	222,026	1,027,961	749,152
September	2,004,028	493,533	1,510,495	223,619	1,029,251	751,158
October	2,011,161	494,892	1,516,269	224,036	1,033,537	753,588
November	2,002,851	494,588	1,508,263	221,670	1,027,751	753,430
December	2,003,839	492,483	1,511,356	223,626	1,028,547	751,666
2008						
January	2,011,353	494,940	1,516,413	223,660	1,032,325	755,368
February	2,010,168	494,345	1,515,823	223,466	1,031,723	754,979
March	2,013,465	494,626	1,518,839	224,507	1,033,195	755,763
April	2,019,671	495,216	1,524,455	225,482	1,037,319	756,870
May	2,014,736	494,441	1,520,295	223,909	1,034,682	756,145
June	2,025,843	495,450	1,530,393	227,132	1,040,607	758,104
July	2,025,538	495,842	1,529,696	226,878	1,039,642	759,018
August	2,030,920	496,836	1,534,084	227,526	1,042,646	760,748

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 5.
Recipients of state supplementation only, by eligibility category and age, August 2007–August 2008

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older
2007						
August	297,466	102,217	195,249	2,438	148,611	146,417
September	298,131	102,470	195,661	2,311	148,970	146,850
October	298,642	102,551	196,091	2,409	149,137	147,096
November	298,893	102,622	196,271	2,460	149,192	147,241
December	298,291	103,072	195,219	2,384	148,197	147,710
2008						
January	296,929	101,493	195,436	2,516	148,335	146,078
February	296,525	101,422	195,103	2,355	148,129	146,041
March	296,521	101,495	195,026	2,326	147,965	146,230
April	297,006	101,554	195,452	2,344	148,276	146,386
May	297,313	101,563	195,750	2,418	148,459	146,436
June	298,234	101,869	196,365	2,364	148,908	146,962
July	299,113	101,938	197,175	2,488	149,479	147,146
August	299,571	102,100	197,471	2,469	149,604	147,498

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 6.
Total payments, by eligibility category, age, and source of payment, August 2007–August 2008
(in thousands of dollars)

| Month | Total | Eligibility category | | Age | | |
		Aged	Blind and disabled	Under 18	18–64	65 or older
			All sources			
2007						
August	3,645,801	463,747	3,182,055	639,088	2,227,682	779,031
September	3,647,862	464,238	3,183,624	645,054	2,222,415	780,394
October	3,713,167	465,917	3,247,250	649,895	2,279,476	783,796
November	3,586,332	463,971	3,122,362	636,647	2,168,620	781,065
December	3,735,792	465,272	3,270,520	660,768	2,290,670	784,354
2008						
January	3,742,315	472,645	3,269,669	661,309	2,282,644	798,361
February	3,741,089	471,094	3,269,995	664,604	2,279,637	796,848
March	3,769,599	472,120	3,297,479	670,708	2,299,885	799,006
April	3,845,076	473,162	3,371,915	681,076	2,362,885	801,115
May	3,777,113	470,934	3,306,179	668,912	2,309,775	798,426
June	3,841,233	471,815	3,369,418	683,340	2,357,134	800,758
July	3,769,838	470,803	3,299,034	665,779	2,304,600	799,459
August	3,809,124	471,801	3,337,323	674,981	2,332,418	801,724
			Federal payments			
2007						
August	3,271,808	361,166	2,910,642	620,948	2,026,925	623,935
September	3,273,668	361,412	2,912,256	626,806	2,021,979	624,884
October	3,334,497	362,565	2,971,931	631,480	2,075,609	627,407
November	3,215,652	361,041	2,854,611	618,801	1,971,532	625,319
December	3,357,680	362,064	2,995,615	642,355	2,087,346	627,979
2008						
January	3,366,810	369,611	2,997,198	642,967	2,081,735	642,107
February	3,366,130	368,255	2,997,875	646,373	2,079,036	640,721
March	3,392,883	369,029	3,023,854	652,280	2,098,149	642,455
April	3,463,950	369,735	3,094,214	662,372	2,157,503	644,074
May	3,400,489	367,931	3,032,558	650,593	2,108,041	641,855
June	3,460,281	368,409	3,091,872	664,631	2,152,097	643,554
July	3,392,740	367,562	3,025,179	647,315	2,102,976	642,450
August	3,430,320	368,265	3,062,055	656,424	2,129,688	644,208

(Continued)

Table 6.
Continued

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older

State supplementation

Month	Total	Aged	Blind and disabled	Under 18	18–64	65 or older
2007						
August	373,994	102,581	271,413	18,140	200,758	155,096
September	374,194	102,826	271,368	18,248	200,436	155,510
October	378,670	103,352	275,319	18,414	203,867	156,389
November	370,680	102,930	267,750	17,846	197,088	155,746
December	378,112	103,208	274,905	18,413	203,324	156,376
2008						
January	375,505	103,034	272,471	18,343	200,908	156,254
February	374,958	102,839	272,119	18,231	200,600	156,127
March	376,716	103,091	273,625	18,428	201,737	156,551
April	381,127	103,427	277,700	18,704	205,382	157,041
May	376,624	103,003	273,621	18,319	201,734	156,571
June	380,952	103,406	277,546	18,710	205,038	157,204
July	377,097	103,241	273,856	18,464	201,624	157,009
August	378,804	103,536	275,268	18,557	202,730	157,516

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month and include retroactive payments.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 7.
Average monthly payment, by eligibility category, age, and source of payment,
August 2007–August 2008 (in dollars)

		Eligibility category		Age		
Month	Total	Aged	Blind and disabled	Under 18	18–64	65 or older
All sources						
2007						
August	466.70	382.70	483.40	556.10	482.30	385.40
September	467.10	382.70	483.70	557.00	482.40	385.50
October	465.80	382.60	482.20	551.70	481.60	385.30
November	467.60	382.80	484.30	558.90	482.90	385.60
December	468.40	384.10	484.90	555.30	484.20	386.90
2008						
January	475.70	390.00	492.40	563.00	492.00	393.00
February	476.40	389.40	493.40	568.20	492.20	392.60
March	476.90	390.50	493.70	567.50	492.50	393.50
April	476.40	390.70	493.00	565.40	492.00	393.70
May	477.70	391.00	494.50	571.20	492.70	394.00
June	477.00	391.10	493.50	567.70	492.00	394.10
July	475.70	391.00	492.10	562.70	491.30	393.90
August	477.40	391.20	494.00	569.90	492.30	394.20
Federal payments						
2007						
August	435.30	325.70	455.80	541.70	453.60	333.00
September	435.70	325.70	456.20	542.60	453.80	333.00
October	434.40	325.40	454.70	537.40	453.00	332.80
November	436.20	325.60	456.80	544.60	454.40	333.00
December	437.10	327.10	457.40	541.10	455.70	334.50
2008						
January	444.60	333.00	465.20	548.80	463.70	340.80
February	445.40	332.50	466.30	554.00	463.90	340.40
March	445.80	333.40	466.50	553.20	464.30	341.20
April	445.40	333.50	465.90	551.20	463.90	341.30
May	446.70	333.70	467.40	557.00	464.60	341.60
June	446.10	333.80	466.50	553.60	463.90	341.60
July	444.80	333.60	465.10	548.50	463.30	341.50
August	446.60	333.90	467.10	555.80	464.30	341.70

(Continued)

Table 7.
Continued

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older
State supplementation						
2007						
August	156.50	171.40	151.30	76.70	159.90	172.00
September	156.40	171.40	151.20	76.60	159.80	172.00
October	156.40	171.40	151.10	76.50	159.70	172.00
November	156.60	171.50	151.30	76.60	159.90	172.10
December	156.60	171.70	151.30	76.40	159.90	172.30
2008						
January	156.30	171.50	151.10	76.40	159.60	172.10
February	156.30	171.30	151.00	76.40	159.60	172.00
March	156.30	171.50	151.10	76.40	159.60	172.20
April	156.30	171.60	150.90	76.40	159.50	172.20
May	156.40	171.70	151.10	76.60	159.60	172.30
June	156.20	171.70	150.80	76.30	159.40	172.20
July	156.10	171.70	150.70	76.30	159.20	172.20
August	156.10	171.70	150.70	76.20	159.30	172.30

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for the end of the specified month and exclude retroactive payments.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Table 8.
All awards, by eligibility category and age of awardee, August 2007–August 2008

Month	Total	Eligibility category		Age		
		Aged	Blind and disabled	Under 18	18–64	65 or older
2007						
August	69,927	8,822	61,105	13,822	47,149	8,956
September	68,181	9,054	59,127	13,164	45,843	9,174
October	79,714	8,658	71,056	15,985	54,907	8,822
November	55,429	8,646	46,783	10,452	36,236	8,741
December	77,842	8,198	69,644	15,990	53,520	8,332
2008						
January	67,580	7,531	60,049	13,763	46,159	7,658
February	68,866	8,902	59,964	13,865	45,961	9,040
March	70,815	8,313	62,502	14,395	47,992	8,428
April	85,983	9,111	76,872	17,671	59,044	9,268
May	76,256	8,981	67,275	15,150	51,979	9,127
June	85,974	8,769	77,205	18,261	58,787	8,926
July [a]	73,722	8,975	64,747	14,839	49,790	9,093
August [a]	75,897	9,166	66,731	14,406	52,191	9,300

SOURCE: Social Security Administration, Supplemental Security Record, 100 percent data.

NOTE: Data are for all awards made during the specified month.

a. Preliminary data. In the first 2 months after their release, numbers may be adjusted to reflect returned checks.

CONTACT: Art Kahn (410) 965-0186 or ssi.monthly@ssa.gov for further information.

Perspectives—Paper Submission Guidelines

The *Social Security Bulletin* is the quarterly research journal of the Social Security Administration. It has a diverse readership of policymakers, government officials, academics, graduate and undergraduate students, business people, and other interested parties.

To promote the discussion of research questions and policy issues related to Social Security and the economic well being of the aged, the *Bulletin* welcomes submissions from researchers and analysts outside the agency for publication in its Perspectives section.

We are particularly interested in papers that:

- assess the Social Security retirement, survivors, and disability programs and the economic security of the aged;

- evaluate changing economic, demographic, health, and social factors affecting work/retirement decisions and retirement savings;

- consider the uncertainties that individuals and households face in preparing for and during retirement and the tools available to manage such uncertainties; and

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Papers should be factual and analytical, not polemical. Technical or mathematical exposition is welcome, if relevant, but findings and conclusions must be written in an accessible, nontechnical style. In addition, the relevance of the paper's conclusions to public policy should be explicitly stated.

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Office of Research, Evaluation, and Statistics
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Washington, DC 20254-0001

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Formatting Guidelines

To facilitate the editorial process, papers submitted for publication must be prepared in Microsoft Word (**except for tables and charts—see below**) and be formatted as outlined below.

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- **Text**—Papers should average 10,000 words, including the text, the notes, and the references (but excluding the tables and charts). Text is double-spaced, except notes and references, which are double spaced only after each entry. **Do not embed tables or charts into the text. Create separate files (in the formats outlined in "Tables/Charts" below) for the text and statistical material**. Tables should be in one file, with one table per page. Include charts in a separate file, with one chart per page.

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- **References**—Verify each reference carefully; the references must correspond to the citations in the text. The list of references should start on a new page and be listed alphabetically by the last name of the author(s) and then by year, chronologically. Only the first author's name is inverted. List all authors' full names and avoid using *et al*. The name of each author and the title of the citation should be exactly as it appears in the original work.

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Questions regarding the mechanics of submitting a paper should be sent to our editorial staff via e-mail at ssb@ssa.gov. For other questions regarding submissions, please contact Michael V. Leonesio, Perspectives Editor, at perspectives@ssa.gov.

Program Highlights, 2008

Old-Age, Survivors, and Disability Insurance

Tax Rates for Employers and Employees, Each [a] (percent)
Social Security

Old-Age and Survivors Insurance	5.30
Disability Insurance	0.90
Subtotal, Social Security	6.20
Medicare (Hospital Insurance)	1.45
Total	7.65

Maximum Taxable Earnings (dollars)

Social Security	102,000
Medicare (Hospital Insurance)	No limit

Earnings Required for Work Credits (dollars)

One Work Credit (One Quarter of Coverage)	1,050
Maximum of Four Credits a Year	4,200

Earnings Test Annual Exempt Amount (dollars)

Under Full Retirement Age for Entire Year	13,560
For Months Before Reaching Full Retirement Age in Given Year	36,120
Beginning with Month Reaching Full Retirement Age	No limit

Maximum Monthly Social Security Benefit for Workers Retiring at Full Retirement Age (dollars)	2,185
Full Retirement Age	66
Cost-of-Living Adjustment (percent)	2.3

a. Self-employed persons pay a total of 15.3 percent—10.6 percent for OASI, 1.8 percent for DI, and 2.9 percent for Medicare.

Supplemental Security Income

Monthly Federal Payment Standard (dollars)

Individual	637
Couple	956

Cost-of-Living Adjustment (percent)	2.3

Resource Limits (dollars)

Individual	2,000
Couple	3,000

Monthly Income Exclusions (dollars)

Earned Income [a]	65
Unearned Income	20

Substantial Gainful Activity (SGA) Level for the Nonblind Disabled (dollars)	940

a. The earned income exclusion consists of the first $65 of monthly earnings, plus one-half of remaining earnings.