

# SPANISH PENSION REFORM

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## **Introduction**

At some point in every person's life, he or she will become physically unable or unwilling to work as a result of old age. When a person does decide to retire, it is important that he or she has sufficient funds to live on. One way many countries have dealt with the financial situation retirees face has been to introduce a pension system. A pension plan can ensure a comfortable retirement, as it is a payment rewarded to a retired person in consideration of past services. Typically, pensions are the responsibility of the individual, the employer, and the government. Due to recent demographic shifts in most First World countries, however, pensions have become exceedingly difficult to finance. Spain, specifically, has been identified as having one of the most expensive and unstable publicly-run pension plans in the developed world.

In this article, I first discuss the subject of pensions in a general context. I then follow with an explanation of the reasons behind Spain's unique situation. Finally, I propose several reforms that could ameliorate and revitalize the current Spanish pension system. Based on the

research and statistics presented in this article, I argue that without enacting significant reforms, Spain's pension system may well be headed for an economic crisis.

## **Types of Pensions**

There are several types of pensions that a government may choose to adopt. Pensions can be provided both publicly and privately, the difference being that public pensions are supplied by the government, while private pensions are essentially voluntary savings accounts funded by an individual, employer, or union. Public and private pension programs, however, are not mutually exclusive. In other words, the government may encourage its citizens to fund their own private pensions in addition to providing public pensions.

Regardless of the type of pension system a country has adopted, all pensions are funded by contributions and paid out in benefits. Contributions are the necessary payments made by a worker up until his or her retirement, while benefits are the funds awarded post-retirement. Pension plans can be calculated using either a defined contribution

**Table 1**  
**Pension Benefits and Necessary Contribution Years in 2000**  
**for 7 Developed Countries**

Country	Percent of Former Income for the Average Earner with a Full Contribution Record	Contribution Years for a Full Pension
France	70	38.5
Germany	70	45
Italy	70	35
Poland	61	37.5
Spain	65	35
U.K.	38	44

Source: Peaple, p. 11.

formula or a defined benefit formula.

A defined contribution formula identifies the contribution rate, and benefits are simply the sum of contributions amassed by a worker upon retirement. Using this formula, an individual's retirement benefits are completely dependent on his or her savings. Private pension plans usually operate according to a defined contribution formula.

A defined benefit formula guarantees retirement benefits, and as a result, the contribution rate may fluctuate. This type of formula generally operates on a pay-as-you-go basis. On a pay-as-you-go basis, the working population must contribute a fraction of its salary to the retirement fund, and then the proceeds from this fund are distributed among the current retirees. The size of one's pension depends upon the number of years one has contributed to the fund. Usually people who work longer receive a proportionately larger pension upon retirement. In many developed countries, public pension plans function according to a defined benefit formula, although every government has a different combination of each of these types of pension plans and formulas. The specifics of Spain's pension system will be discussed further in the following section.

### Characteristics of the Spanish Pension System

Spain's current pension system is a publicly-run pay-as-you-go plan. The official retirement age is 65, with an early retirement option at age 60. To receive benefits, an individual

must contribute to the fund for a minimum of 15 years and stop working upon retirement. The benefit formula for the Spanish pension plan is one of the most generous in the world, as seen in Table 1 above, which shows the pension benefits and necessary contribution years in several countries of similar size and wealth. The benefits under Spain's pension system are comparable to those of the largest six countries in the European Union, but the number of necessary years of contribution for a full pension is the lowest. These figures indicate that Spanish pensioners have relatively low requirements to earn significant benefits.

### Determining Individual Benefits

The monthly pension ( $P_t$ ) that a Spanish retiree will receive is calculated by multiplying a regulatory base ( $B_t$ ) by a replacement rate ( $r_n$ ). Equation 1 shows this relationship.<sup>1</sup>

$$P_t = B_t * r_n \quad (1)$$

The regulatory base ( $B_t$ ) is a weighted average of monthly earnings in the 15 years immediately before retirement. Equation 2 shows how a regulatory base is calculated, where  $W_{t-j}$  and  $I_{t-j}$  represent monthly earnings and the consumer price index in the  $j$ th month before retirement, respectively.

$$B_t = \frac{1}{180} * \left[ \sum_{j=1}^{24} W_{t-j} + \sum_{j=25}^{180} W_{t-j} * \frac{I_{t-25}}{I_{t-j}} \right] \quad (2)$$

<sup>1</sup>Source of all equations: Boldrin and Jiménez-Martín.

The monthly payment is averaged over 15 years; hence, the sum total of contributions is divided by 180 months. The replacement rate ( $r_n$ ) for a person above the age of 65 depends on  $n$ , the number of years he or she has contributed to the fund. Equation 3 shows the specifics of this relationship.

$$r_n = \begin{cases} 0, & \text{if } n < 15 \\ .5 + .03(n - 15), & \text{if } 15 \leq n < 25, \\ .8 + .02(n - 25), & \text{if } 25 \leq n < 35, \\ 1, & \text{if } 35 \leq n. \end{cases} \quad (3)$$

An individual who retires at the age of 65 and contributes to the fund for more than 35 years receives 100 percent of the regulatory base. He or she would receive 80 percent for contributing for exactly 25 years. Even if this same individual were to only contribute for the bare minimum of 15 years, he or she would still receive approximately 50 percent of the regulatory base.

Due to this generous system, an amendment was enacted in 2002 that provides an incentive for people to continue working past the retirement age of 65. This amendment was an attempt to increase the number of contributors to the pension fund and decrease the number of pensioners. Before this legislation, no such incentive to postpone retirement existed. According to the 2002 amendment, the replacement rate is subject to Equation 4, assuming the retiree is above the age of 65 and has contributed for over 35 years, where  $a$  represents the retirement age.

$$r_n = 1 + .02(a - 65), \text{ if } a \geq 65 \text{ and } n \geq 35 \quad (4)$$

Working past the age of 65 earns the retiree a replacement rate that is above 100 percent, which means that a retiree could effectively receive a monthly pension greater than the value of his regulatory base. For example, if a Spanish citizen were to work until age 75, he or she would receive 102 percent of his regulatory base.

Despite the recent incentive for late retirement, early retirement is still culturally acceptable and popular. Spanish citizens may opt for an early retirement between the ages of 60 and 64; however, this option places a penalty on their regulatory base. Equation 5 shows that

the replacement rate is reduced by 8 percent for each year under age 65, where  $a$  represents the retirement age.

$$r_n = \begin{cases} 0, & \text{if } a < 60, \\ .6 + .8(a - 60), & \text{if } 60 \leq a < 65, \\ 1, & \text{if } 65 \leq a. \end{cases} \quad (5)$$

The purpose of Equation 5 is to implement features that discourage workers from retiring early. For example, an individual who chooses to retire at the age of 60 will receive 60 percent of his or her regulatory base. Likewise, a person who decides to retire at age 64 will receive 92 percent. In both 1997 and 2002, this equation was modified slightly to decrease penalties against retirees with longer contribution records, providing them with a larger percentage of their regulatory base than they would otherwise receive.

The benefit formula discussed above applies to the general population but is modified for certain professions. For example, farmers, government workers, and the self-employed have slightly more generous formulas to calculate their pensions. Special legislation also rewards higher benefits to bullfighters and employees of the transportation industries, such as railroads and airlines.

In addition to the benefit formulas already mentioned, there are also defined maximum and minimum pensions. The maximum allowable pension roughly corresponds to 4.3 times the minimum wage or approximately 1.6 times the average monthly earnings in the manufacturing and service sectors. (Boldrin and Jiménez-Martín, p. 6) A person with a calculated pension above this ceiling will be paid no more than the maximum.

On the other hand, if a person's calculated pension is below a certain level, a minimum pension is paid by the government. The minimum allowable pension is legislated annually. The ratio between the minimum old-age pension and minimum wage has been increasing steadily from the late 1970s. In 1975 it was approximately 75 percent, whereas in 1990 it reached nearly 100 percent. (Boldrin and Jiménez-Martín, p. 6) Between 1990 and 2000, minimum pensions increased at approximately the same rate as nominal wages, whereas maximum pensions grew at the rate of infla-

**Table 2**  
**Contributions to Compulsory Pensions (Percent of Salary of Average Earner)**

	France	Germany	Italy	Poland	Spain	U.K.
Employer	15.46–15.6	9.75	24	9.8	23.6	7.3
Employee	9.75–10.35	9.75	9	9.8	4.7	6.2
Total	25–26	19.5	33	19.6	28.3	13.5

Source: Peaple, p. 12.

tion. The implications of these figures can only be fully understood by comparing the costs of Spain's expensive pension system with those of other large First World countries.

### Cost of Public Pensions

Spain's generous pension scheme is funded exclusively by contributions from the working population, including both employers and employees. Table 2 shows the percentage of the average earner's salary put toward the public pension system for several European countries that are of similar size and wealth as Spain. Spain's total contribution rate to the pension system, 28.3 percent, is slightly below that of Italy, but higher than that of every other country shown. Clearly, Spanish workers contribute to this costly program in hope of earning similar benefits in the future. Another notable statistic is that Spain has the largest employer-to-employee contribution ratio. Spain's employers are paying the second highest rate, at 23.6 percent; however, employees are paying a much lower rate than any other country in the table, at 4.7 percent. While economic theory suggests that the burden of the employee's share of the payroll tax falls on the employee, it may be that

the extraordinarily high tax rate on the employer creates an illusion for Spanish employees that the pension system is relatively inexpensive. An average Spanish employee will only see a 4.7 percent salary tax for the pension program, oblivious to the immense 23.6 percent tax on the employer, which more accurately reflects the true costs of the pension system.

The Spanish government attempts to satisfy both pensioners, by supplying generous benefits, and employees, by demanding minimal contributions, but at the expense of the employers and the economy. To illustrate this point, Table 3 shows estimates of the cost of public pension systems in several European countries as a percent of gross domestic product (GDP). The figures for 2000 make Spain's pension program seem affordable, having the second lowest expenditure at 9.4 percent. However, the projections for 2050 indicate that Spain will have the highest percentage of any country in the Table, at 17.3 percent. The Spanish pension system is expected to practically double in cost by the year 2050, and experts widely agree that Spain is currently in a dire situation compared to other developed countries.

In 2003 the Center for Strategic and

**Table 3**  
**Estimates of State Pension Expenditure (Percent of GDP)**

	2000	2050
France	12.1	15.8
Germany	11.8	16.9
Italy	13.8	14.1
Poland	10.8	8.3
Spain	9.4	17.3
U.K.	5.5	4.4
EU-15	10.2	13.5

Source: Peaple, p. 4.

**Table 4**  
**Ageing Vulnerability Ranking List**

Rankings From Least to Most Vulnerable		
Low Vulnerability	1	Australia
	2	U.K.
	3	U.S.
Medium Vulnerability	4	Canada
	5	Sweden
	6	Japan
	7	Germany
	8	Netherlands
	9	Belgium
High Vulnerability	10	France
	11	Italy
	12	Spain

Source: Howe and Jackson, p. iii.

International Studies (CSIS) published the Aging Vulnerability Index as part of its Global Aging Initiative, which evaluates and ranks the vulnerability of First World countries to financial problems resulting from rising old-age dependency costs. These ratings are based on each country's history, culture, and projected future economic state. The index assessed 12 countries and grouped them into three categories: low, medium, and high vulnerability groups. Spain was placed in the high, or most vulnerable, group. In fact, Table 4 shows that within this group, Spain ranked as the most vulnerable of all 12 countries. The rankings are based on the following four categories of indicators: public burden, fiscal room, benefit dependence, and elder affluence. The public burden indicators track the amount of total public spending of each country.<sup>2</sup> The fiscal room indicators rate the ability of the government to increase benefits to the elderly through increasing social security taxes, cutting taxes in other areas, or public borrowing.<sup>3</sup> The ben-

efit dependence indicators analyze how dependent the elderly are on public benefits and thus how politically difficult it would be to reduce government spending.<sup>4</sup> Lastly, the elder affluence indicators evaluate the influence the elderly population carry with the younger generations.<sup>5</sup> Spain ranked poorly with respect to all four categories, especially with the public burden indicators, as a result of its generous pension scheme. Clearly, Spain's pension system may be headed for an economic breakdown unless effective reform is initiated. It is therefore important to identify demographic trends in Spain that could be contributing to this potential misfortune.

### Demographic Factors

The leading factor contributing to pension problems in Spain is its unfavorable demographics. The aging of the general population is a growing problem because it results in an increase in the number of people receiving pen-

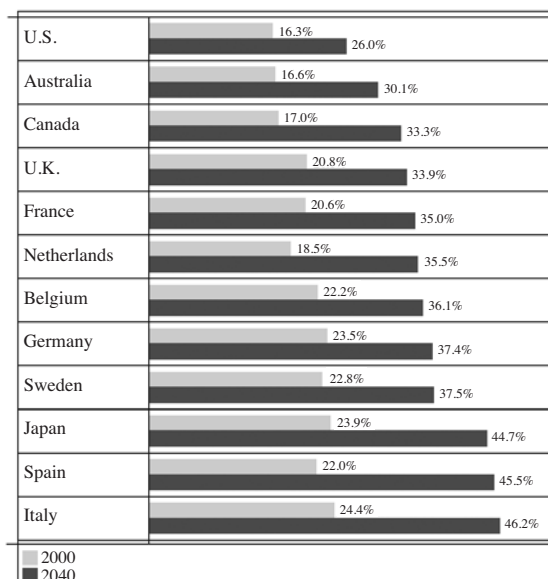
<sup>2</sup>The Public Burden Category includes 3 indicators: public benefits to the elderly in 2040 as a percent of GDP, the growth from 2000 to 2040 in public benefits to the elderly as a percent of GDP, and public benefits to the elderly in 2040 as a percent of the income of the non-elderly.

<sup>3</sup>The Fiscal Room Category includes 3 indicators: total taxes as a percent of GDP in 2040, total benefits to the elderly in 2040 as a percent of total government outlays, and the year that the new government debt reaches 150 percent of GDP.

<sup>4</sup>The Benefit Dependence Category includes 3 indicators: public benefits as a percent of after-tax elderly income in 2040, the percent of the elderly who live with their adult children, and the percent of the elderly who would drop below the poverty line if public benefits were cut by 10 percent.

<sup>5</sup>The Elder Affluence Category includes 2 indicators: the ratio of per capita income of the elderly to per capita income of the non-elderly in 2040, and the percentage change in that ratio between 2000 and 2040.

**Figure 1**  
**Number of Elderly (Over Age 60) as a Percent of the Population**



Source: Howe and Jackson, p. 1.

sions and a decrease in the number of workers contributing. Figure 1 shows the percentages of elderly people in the populations of 12 First World countries.

Spain's elderly class, while a modest 22.0 percent of the population in 2000, is expected to double in percentage by 2040. Spain's projected elderly population percentage in 2040, at 45.5 percent, is the highest of all the countries listed except Italy. The dependency ratio (i.e., the number of people over the age of 60 as a percent of the working population) measures the strain put on the workforce to support the

retired population. Table 5 contains dependency ratios for several similar European countries, as well as the European Union average. In 2000, Spain's dependency ratio was close to the EU average; however, in 2050 it is projected to be the highest of all the countries, except again for Italy. These predictions show that action must be taken to prevent a potentially severe loss of retirement benefits.

Spain's forecasts, while more gloomy than those of other countries, follow the general trend of aging populations in First World countries. Increased life expectancy in developed

**Table 5**  
**Dependency Ratios: Elderly Population as a Percent of the Working Population**

	2000	2050
France	24.4	46
Germany	23.8	49
Italy	26.6	61
Poland	20.4	55.2
Spain	24.5	60
U.K.	23.8	42
EU-15	24.2	49

Source: Peale, p. 4.

**Table 6**  
**Projected Fertility Rates of First World Countries in 2050**

	Fertility Rate <sup>6</sup>
Australia	1.8
Belgium	1.5
Canada	1.6
France	1.7
Germany	1.3
Italy	1.2
Japan	1.4
Netherlands	1.5
Spain	1.2
Sweden	1.5
U.K.	1.7
U.S.	2.0

Source: Howe and Jackson, p. 12.

countries is a result of advances in medical technology and pharmacology. In Spain's case, between 1950 and 2000 the life expectancy for males increased from 61.60 to 75.35 years and for females from 66.30 to 82.25 years. ("Spain") The consequent lengthening of the average retirement period is one of the main reasons that Spain's government is having trouble providing benefits for all pensioners. When the original legislation was passed, few people actually lived past the retirement age.

Another problematic demographic trend is the decrease in Spain's fertility rate over the last few decades. The fertility rate, or average number of children per woman, dropped from 2.89 in 1960 to 1.13 in 2000. ("Spain") Spain now has one of the lowest fertility rates in the EU and, in fact, the world. Table 6 demonstrates fertility rate projections for the year 2050 for various First World countries.

Notice in this table that Spain's projected fertility rate is the lowest of all the countries listed, except for Italy. This statistic can be attributed to the relatively new trend of Spanish women entering the workforce. The average maternity age in Spain, or average age when a woman gives birth to her first child, is also one of the highest in the EU and has been steadily

increasing. The situation has become so extreme that the ruling socialist party (PSOE) led by Jose Zapatero, which was elected in March 2004, passed legislation to "extend monthly payments of 100 euro per child to non-working mothers to encourage them to breed." ("The Second Transition...," p. 10) The combination of Spain's low fertility rate and high average maternity age results in a decrease in the number of young workers contributing to the pension fund, and thus depletes the benefits available to support future retirees.

Despite the gloomy outlook for Spain's pension system, there are several unique demographic factors that could provide some optimism for the future. For instance, most Spanish citizens have close ties with their religion and their family. Often children will live with their parents until they get married. Moreover, it is not uncommon for parents to live with their children as they get older, instead of entering retirement communities. Figure 2 shows the percent of elderly people (over the age of 60) living with their adult children for 12 First World countries. Spaniards tend to take care of their parents in old age. As shown, 40.5 percent of the Spanish elderly class live with their adult children, the third highest percentage of all the countries listed in the table. For this reason, Spain can take some comfort in knowing that its elderly would be supported by their children if their benefits were to be reduced. This is important since many elderly

<sup>6</sup>The CSIS demographic scenario is based on the UN's latest "constant fertility" scenario until the year 2050, which assumes that rates of fertility (in all countries) and net immigration (in most countries) will continue at their 1995–2000 averages.

**Figure 2**  
**Percent of the Elderly (Over Age 60) Living with Their Adult Children<sup>7</sup>**

Japan	50.4%
Italy	42.1%
Spain	40.5%
Canada	20.3%
Australia	19.5%
Belgium	15.6%
U.S.	15.1%
Germany	13.7%
U.K.	13.0%
France	12.4%
Netherlands	9.1%
Sweden	5.0%

<sup>\*</sup>Data refer to latest year available, generally in mid-1990s.

Source: Howe and Jackson, p. 15.

people would face financial difficulties if the pension system were to change. Figure 3 shows the percentage increase in the number of elderly, meaning those over the age of 60, who would fall below the poverty line following an immediate 10 percent cut in public benefits. The 10 percent figure is arbitrary, one that simulates a relatively drastic cut in benefits that a government might initiate in times of economic turmoil. A person living in poverty is defined as one who lives in a household with an income that is less than 50 percent of the national average household income. As shown in Figure 3, Spain is estimated to have only 3.9 percent of its elderly population pushed into poverty assuming this hypothetical scenario, which is the fourth lowest of the 12 countries represented. This can be attributed to Spain's already generous benefit plan as well as strong family values.

The state of the economy in Spain is also a contributing factor to the pension problem. One way to evaluate the health of a nation's

economy is to examine its unemployment rate. In 2004, the national unemployment rate in Spain was estimated to be 11.3 percent. ("Financial and Social Rankings...") With fewer people employed, less money is contributed to the public pension fund. Another contributing factor to the suffering economy and the resulting pension problem is that students usually spend 5–6 years studying at a university and, in effect, delay entering the workforce. This further hinders the growth of the contributory fund. In addition, strict job security laws make it difficult for many people, especially young adults, to gain employment. For example, it is exceedingly difficult for employers to terminate a Spanish employee; therefore, the incentive to hire new full-time employees is low. Part-time employment in Spain has increased from 4.7 percent of total employment in 1991 to 7.9 percent in 2002. Temporary work represented 31 percent of total employment in 2002, the highest rate in the European Union. ("Reform of the Spanish Pension System") This structure of employment provides security for current employees, yet prevents opportunity for new employees, thereby stifling economic growth. Spain's troubled economy clearly exacerbates its fragile pension situation; and while many experts recognize this problem, most politicians are hesitant to propose a solution.

<sup>7</sup>Specifically, the indicator measures the share of all elderly who now live in extended families with their adult children, whether the parents live in their grown children's household or — what is much more common in most countries — the grown children live in their parents' household.

**Figure 3**  
**Percent of the Elderly (Over Age 60) Pushed into Poverty by a**  
**10 Percent Cut in Public Benefits**

Japan	2.0%
Italy	2.9%
U.S.	2.9%
Spain	3.9%
Canada	3.9%
Australia	4.0%
U.K.	4.1%
Sweden	4.5%
Netherlands	4.9%
France	5.2%
Belgium	5.2%
Germany	5.7%

\*Poverty threshold is 50 percent of the median income for all households in each country; income excludes government health care benefits; data refer to latest year available, generally in mid-1990s.

Source: Howe and Jackson, p. 16.

## Politics

Politics play a significant role in current pension policy as well as in reform proposals. Individual parties hold differing positions on pension reform. Historically, the left wing Partido Socialista Obrero Espanol (PSOE), the Spanish Socialist Workers Party, defends the pay-as-you-go system. The PSOE is the party that won the election in March 2004. The trade unions have also continually backed the current pay-as-you-go system. These two groups have traditionally supported the policy of altering the contributory rate to maintain defined benefits.

The right wing Partido Popular (PP), or Popular Party, has generally supported a mix of the current system with privatization. Employers have also historically endorsed this mixed system, because the pay-as-you-go system is extremely costly for them. They argue that their high contribution rate hinders the creation of new employment opportunities. (Cabrero, p. 8)

Regardless of these two positions, right or left, very few politicians promote modifying the current system because of how politically unpopular a change would be with the general population. Few Spaniards are willing to give

up their generous retirement check, despite the adverse effects it may have on the economy. This slow deterioration of Spain's economy and pension system will only become worse unless significant reforms are enacted, as will be discussed in the following section.

## Proposed Solutions

Many Spanish citizens would recommend maintaining the current pay-as-you-go system. Based on demographic projections, however, the only way this system can support itself is by either increasing the contributory payroll tax or by decreasing benefits to pensioners. Considering how high the payroll tax is currently, raising it still higher is unrealistic. On the other hand, decreasing benefits to pensioners would meet fierce opposition from current and future pensioners alike. Despite opposition for change, it is evident that the current system cannot and will not support itself indefinitely.

Another option available to Spain is to raise the retirement age. This action would effectively increase the population of contributors and decrease the population of pensioners. The same logic applies when considering increasing the minimum number of years of

contribution. Raising the minimum number of contributory years from 15 to 20, for example, would decrease the number of people eligible to receive pensions and increase the incentive to stay in the workforce for a longer period of time. Both of these actions are also politically dangerous, because of the predisposition of most Spanish citizens.

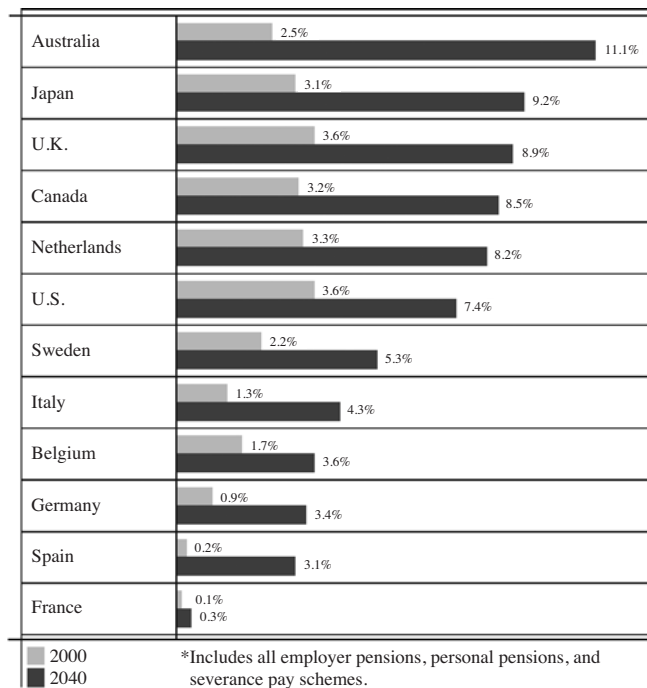
Implementing a more flexible retirement policy is another option that could revitalize Spain's pension system. More specifically, the government could provide further incentives for people over 65 to continue working. The 2002 amendment was a step in this direction; however, the increase in benefits for those who postpone retirement is small and not worth the extra years of employment to most Spaniards. If the benefit formulas were more generous, people would be more likely to remain in the workforce. People over the age of 65 could continue to earn salary, extend their contribution record, and collect a larger pension later. Enabling the elderly to postpone their retirement and rewarding them highly for it could

increase the size of the contributory fund significantly.

Promoting more private pension saving is another viable option. Currently, Spain has very few private pension plans relative to other comparable nations. Figure 4 outlines the private pension spending of the same 12 First World countries mentioned earlier, as a percent of GDP. As of the year 2000, Spain had the lowest percentage of spending on private pension benefits, except for France, at 0.2 percent. Spain's projected percentage of spending in 2040 is again the second lowest, at 3.1 percent. These figures show that Spaniards rely wholeheartedly on the government to provide them with social security as a result of their steady contribution record. By implementing more mandatory private pension spending, the country could, in effect, relieve some of the stress put on the public system in the future.

While most European countries have publicly-run pension systems with a defined benefit formula, other countries have developed privatized pension systems with a defined

**Figure 4**  
**Private Pension Benefits, as a Percent of GDP**



Source: Howe and Jackson, p. 16.

contribution formula. For example, Chile has had noteworthy success with its pension system since introducing private pension policies in 1981. Chilean workers with full-time employment are required to contribute between 10 and 20 percent of their monthly salary into their own personal private pensions. (“Chile’s Private Pension System”) At the request of the individual, the funds in his or her pension may be invested by a pension firm or simply saved, as in a bank account. In 2005, Chilean private pension spending was estimated to be worth over 30 billion dollars. (“Chile Reference Information...”) One problem with implementing this system is the large fixed costs associated with the transition from the old system to the new system. In Chile, the government issues “recognition bonds” to workers who wish to switch to the new system in order to recognize their contributions made to the old system. (“Chile’s Private Pension System”) These bonds may be cashed in by the workers upon their retirement. This method allows the government to spread out the transition costs

over time instead of paying them all upfront. If Spain were able to implement this type of transition, it would eliminate the impending public pension deterioration expected in the future. In summary, increasing private pension spending today is the most practical solution to saving the benefits of retirees tomorrow.

Hope is not lost because in one important respect, Spain is in a unique position compared to most other countries. According to economist Franco Modigliani, a Nobel laureate, Spain has a “window of opportunity,” because the Spanish baby boom occurred much later than in most countries. (Modigliani and Muralidhar, p. 178) Therefore, a limited time frame, or “window,” to implement reform still exists. If the government takes steps to implement the recommended reforms, the pension program could become sustainable before the baby boom generation enters retirement. Spain may not be in imminent danger currently, but the price of doing nothing is much higher than that of enacting suitable reforms today.

## REFERENCES

- Boldrin, Michele and Sergi Jiménez-Martín. “Evaluating Spanish Pension Expenditure under Alternative Reform Scenarios.” University of Minnesota, Universitat Pompeu Fabra, and Universidad Carlos III de Madrid. November 12, 2002. Online. [www.nber.org/books/intlISS-p3/spain2-19-03.pdf](http://www.nber.org/books/intlISS-p3/spain2-19-03.pdf). Accessed December 19, 2004.
- Cabrero, Gregorio Rodríguez. “The Reform of the Public Pension System in Spain.” Universidad de Alcalá/ University of Kent (Canterbury). Online. [www.iesam.csic.es/doctrab2/dt-0213e.pdf](http://www.iesam.csic.es/doctrab2/dt-0213e.pdf). Accessed November 28, 2004.
- “Chile Reference Information — Key Sectors — Private Pension Funds.” Online. [www.latin-focus.com/latin-focus/factsheets/chile/chlfact\\_sectors\\_pension.htm](http://www.latin-focus.com/latin-focus/factsheets/chile/chlfact_sectors_pension.htm). Accessed May 29, 2005.
- “Chile’s Private Pension System.” *Institute Brief*, Vol. 3, August 1996. Online. [www.limitedgovernment.org/publications/pubs/briefs/pdfs/brf3-10.pdf](http://www.limitedgovernment.org/publications/pubs/briefs/pdfs/brf3-10.pdf). Accessed June 4, 2005.
- “Financial and Social Rankings of European Countries.” Online. [www.campusprogram.com/reference/en/wikipedia/fi/financial\\_and\\_social\\_rankings\\_of\\_european\\_countries.html](http://www.campusprogram.com/reference/en/wikipedia/fi/financial_and_social_rankings_of_european_countries.html). Accessed November 6, 2004.
- Howe, Neil and Richard Jackson. “The 2003 Aging Vulnerability Index: An Assessment of the Capacity of Twelve Developed Countries to Meet the Aging Challenge.” Center for Strategic and International Studies and Watson Wyatt Worldwide. March 2003. Online. [www.csis.org/gai/aging\\_index.pdf](http://www.csis.org/gai/aging_index.pdf). Accessed December 28, 2004.
- Modigliani, Franco and Arun Muralidhar. *Rethinking Pension Reform*. Cambridge: Cambridge University Press, 2004.
- Peaple, Nigel. “European Pension Reform and Private Pensions.” Association of British Insurers. May 2004. Online. [www.abi.org.uk/Display/File/364/European\\_Pension\\_Reform\\_and\\_Private\\_Pensions.pdf](http://www.abi.org.uk/Display/File/364/European_Pension_Reform_and_Private_Pensions.pdf). Accessed January 13, 2005.
- “Reform of the Spanish Pension System.” European Foundation for the Improvement of Living and Working Conditions. Online. [www.eurofound.eu.int/ewco/2003/11/ES0311NU01.htm](http://www.eurofound.eu.int/ewco/2003/11/ES0311NU01.htm). Accessed December 20, 2004.
- “The Second Transition: A Survey of Spain.” *The Economist*. June 26, 2004.
- “Spain.” *World Economic Forum*. Online. [www.weforum.org/pdf/Initiatives/pension\\_spain.pdf](http://www.weforum.org/pdf/Initiatives/pension_spain.pdf).