

# WORKING PAPER

## *Executive Summary*

SEPTEMBER 2003, WP # 2003-16

CENTER FOR  
RETIREMENT  
RESEARCH  
AT BOSTON COLLEGE

---

## AGGREGATE IMPLICATIONS OF DEFINED BENEFIT AND DEFINED CONTRIBUTION SYSTEMS

BY FRANCISCO GOMES AND ALEXANDER MICHAELIDES

One of the most significant fiscal challenges facing governments in the next few decades is the financing of retirement benefits. Due to this challenge, governments are considering a variety of social security reforms. This paper investigates the implications of different reforms for a nation's economy and for the welfare of its citizens. Specifically, the authors explore the economic outcomes of PAYGO defined benefit (DB) systems and mandatory, funded defined contribution (DC) systems. The authors pay particular attention to a country's political and economic structure, as this structure can influence the nature and extent of reforms. For example, some systems are more conducive to incremental reforms, while others may be open to sweeping changes.

The paper first broadly describes different social security systems that exist in OECD economies and classifies them into categories with broadly similar institutional features. The authors then construct a theoretical model that accounts for these institutional arrangements, and they use the model to quantify the implications of a DB or DC system for national saving and capital formation.

With respect to DB systems, the authors address a key tradeoff: the distortionary costs of taxation versus the benefits of risk sharing. The costs of taxation are particularly high for low-income workers, because they may be forced to cut back consumption over their working lives compared to what would have occurred with no public system. Despite this drawback, the authors find that the insurance benefits provided by a DB system can outweigh the efficiency costs of taxation.

On the DC side, the authors find that establishing a fully-funded DC system leads to higher levels of wealth and a more equal distribution of consumption in retirement compared to no public system. Under certain conditions, however, the authors find that the distortionary effect of forced saving on consumption in a DC system may be greater than in a DB system if people increase saving as a precautionary measure due to uncertain rates of return. If, as a result, low-income workers are forced to cut their consumption substantially, the negative effects of precautionary saving during the working years may outweigh the positive effects of wealth accumulation and reduced inequality in retirement.

---

© 2003, by Trustees of Boston College, Center for Retirement Research. All rights reserved. The research reported herein was performed pursuant to a Sandell grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium. The opinions and conclusions expressed are solely those of the authors and should not be construed as representing the opinions or policy of SSA or any agency of the Federal Government, or the Center for Retirement Research at Boston College.

**CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE**

Fulton Hall 550, 140 Commonwealth Avenue, Chestnut Hill, MA 02467-3808  
phone 617.552.1762 fax 617.552.1750 [crr@bc.edu](mailto:crr@bc.edu) [www.bc.edu/crr](http://www.bc.edu/crr)

*All of our publications are available on our website:*

**[www.bc.edu/crr](http://www.bc.edu/crr)**

---

© 2003, by Trustees of Boston College, Center for Retirement Research. All rights reserved. The research reported herein was performed pursuant to a grant from the U.S. Social Security Administration (SSA) funded as part of the Retirement Research Consortium. The opinions and conclusions expressed are solely those of the authors and should not be construed as representing the opinions or policy of SSA or any agency of the Federal Government, or the Center for Retirement Research at Boston College.

**CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE**

Fulton Hall 550, 140 Commonwealth Avenue, Chestnut Hill, MA 02467-3808  
phone 617.552.1762 fax 617.552.1750 [crr@bc.edu](mailto:crr@bc.edu) [www.bc.edu/crr](http://www.bc.edu/crr)