



Summary

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The Levy Economics Institute of Bard College, founded in 1986, is a nonprofit, nonpartisan research organization devoted to public service. Through scholarship and economic research it generates viable, effective public policy responses to important economic issues that profoundly affect the quality of life in the United States and abroad.

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LETTER FROM THE PRESIDENT

To our readers:

This issue begins with a strategic analysis by Research Scholars Edward Chilcote and Gennaro Zezza, and me under the state of the U.S. and world economies program. We observe that the U.S. economy continues to grow on an unbalanced path and that there is an increase in the default risk for the private and financial sectors. According to a policy note by Distinguished Scholar Wynne Godley and Zezza, the path of lending, rather than debt, may be of decisive importance for the medium-term future of the U.S. economy.

Presentations at an April conference on government spending on the elderly, organized under the distribution of income and wealth program, outlined a range of social expenditures across countries. The authors addressed concerns about the ability of countries to provide for aging populations, inequalities among the elderly and between racial and ethnic minority groups, and the solvency of social security systems. Proposals to improve poverty levels and financial support for the elderly included focusing on full employment with rising skill levels, changing tax structures, and increasing the eligibility age for Social Security.

A working paper by Senior Scholars Edward N. Wolff and Ajit Zacharias shows that economic well-being is substantially altered when money income is adjusted for wealth: the income gap widens between whites and other races, and the relative well-being of the elderly increases. Three working papers were submitted by participants in the conference on time use and economic well-being that was held at the Levy Institute in October 2005.

A symposium held in May on the gender dimensions of tax policy is featured under the gender equality and the economy program. Participants from both developed and developing countries found implicit gender biases in tax structures, data limitations in measuring gender disparities, inadequate government policies, and underfunding of social structures and antipoverty programs. Moreover, the movement toward indirect taxes, which are generally regressive, adversely affected lower-income classes and women. The participants agreed that countries with individual and progressive income tax systems achieve greater equalization in the tax treatment of men and women.

A working paper by Research Associate Stephanie Seguino and Senior Scholar Caren A. Grown finds that greater equality

for women requires a larger role by government, combined with a structural shift from a profit-led, export-oriented economy to a government-supported, wage-led economy that stimulates growth and regional benefits.

The program on economic policy for the 21st century begins with a public policy brief by Senior Scholar L. Randall Wray, who examines Basel II and concludes that it is unlikely to reduce banking risk and financial instability. Another brief by Thomas I. Palley suggests that the international financial system is unsustainable for reasons of demand, not supply, and that the U.S. Treasury's policies are the diametric opposite of U.S. needs today. A working paper by Eric Tymoigne rejects interest rates in favor of systemic risk analysis as the central bank's operating tool. In another working paper, Claudio Sardonì concludes that money cannot be displaced by another instrument and that the central bank "rules the roost" because its liability is the economy's unit of account.

In a working paper, Wray finds that it is misguided to suggest that either the U.S. federal government or U.S. economy faces financial constraints in a regime of sovereign currency and floating exchange rates. In a policy note, he predicts that the next U.S. recession and global slowdown will be due to a downturn in the rate of growth of spending by U.S. consumers rather than the insolvency of the United States. In another policy note, he says that debate about "reforming" Social Security is misguided and recommends government policy prescriptions geared toward increasing productivity, human capital, and public infrastructure.

Under explorations in theory and empirical analysis, a working paper by Thomas R. Michl recommends that central banks should retain both employment and inflation targets. A working paper by Research Scholar Greg Hannsgen critiques neoclassical consumption theory, stating that housing should be treated differently from other assets. In another working paper, he confirms that an increase in inflation increases the central bank's tendency to raise rates, which intensifies the inflationary problem. Three working papers by Tymoigne review the organizing principles of Hyman P. Minsky and the dynamics of Minsky's financial instability hypothesis in order to formulate a post-Keynesian/Minskyan model. The model verifies a number of elements of Minskyan thought.

As always, I welcome your comments and suggestions.

Dimitri B. Papadimitriou, *President*

Program: The State of the U.S. and World Economies, and Strategic Analysis

Can the Growth in the U.S. Current Account Deficit Be Sustained? The Growing Burden of Servicing Foreign-Owned U.S. Debt

DIMITRI B. PAPADIMITRIOU, EDWARD CHILCOTE, and GENNARO ZEZZA

Strategic Analysis, May 2006

www.levy.org/pubs/sa_may_06.pdf

President Dimitri B. Papadimitriou and Research Scholars Edward Chilcote and Gennaro Zezza focus on the cost of funding debt, and the structure of U.S. assets relative to U.S. liabilities. They find that temporary policy measures and events have masked the future costs of servicing foreign-owned U.S. debt, and that these measures and events may be reversing.

The falloff in funding costs since 2000 is a result of the downward movement in market interest rates and of the overall maturity of debt used to fund the U.S. national debt (i.e., funding long-term assets with short-term liabilities). Combined with the substantial buildup of U.S. dollars by foreign central bankers, these factors have prevented a significant deterioration in U.S. net income receipts. As interest rates rise, however, and as the U.S. Treasury extends the maturity of its newly issued securities and foreign central bankers diversify their treasury reserves, the burden of servicing U.S. debt owned by foreigners will lead to an even greater deterioration in the U.S. current account balance.

The authors observe that the U.S. current account deficit has grown to almost 7 percent of GDP (\$804.9 billion in 2005). U.S. foreign liabilities now exceed U.S. foreign assets by nearly \$2.5 trillion. Although net income flows to the United States remain neutral, the authors find that the ex-post return on U.S. assets held abroad reacts slowly to an increase in the federal funds rate, so recent increases in interest rates have not yet affected the income-flow statistics. Based on 2004 data, the authors estimate

Figure 1 Balance on Income and Balance on Goods and Services as Percent of GDP



Figure 2 U.S. and Foreign Interest-Bearing Assets as Percent of GDP

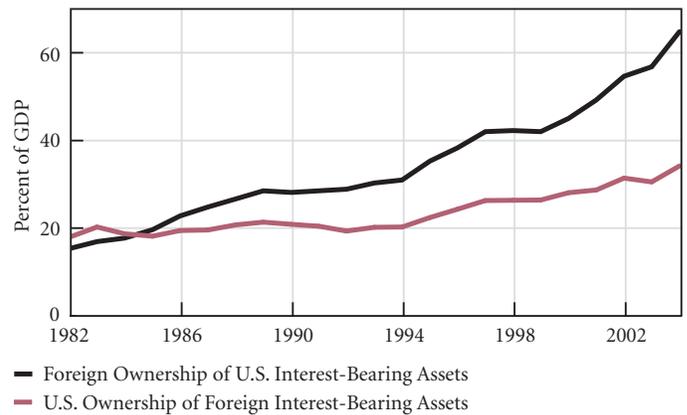


Figure 3 Interest Income Flows as Percent of GDP



Source: Bureau of Economic Analysis (Figures 1, 2, and 3)

Figure 4 Estimated Cost of Funds

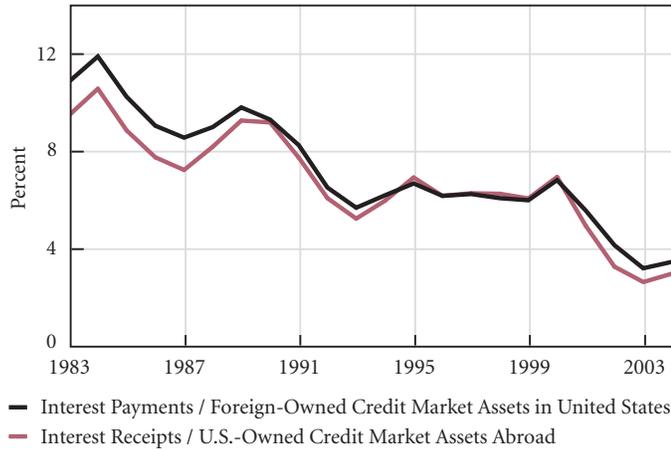


Figure 5 Federal Funds Rate and U.S. Treasury Yields

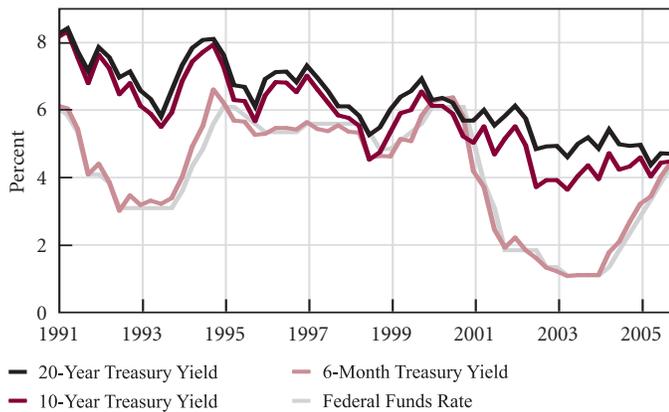
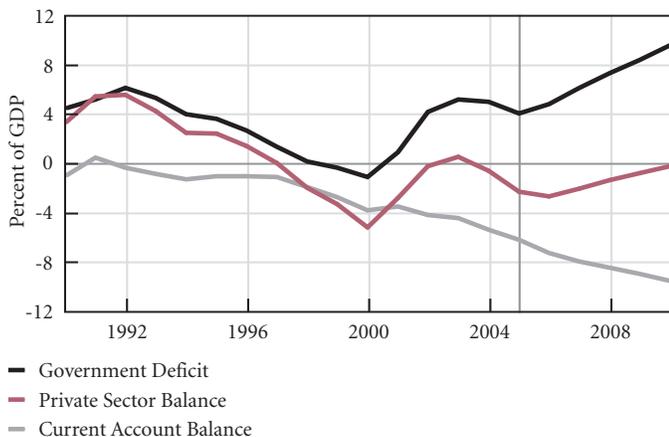


Figure 6 Scenario with CBO Growth Path and Slowing Private Sector Borrowing: Main Sector Balances



Sources: Bureau of Economic Analysis (Figures 4 and 6); Federal Reserve Board of Governors and Department of the Treasury (Figure 5); and authors calculations (Figure 6)

that for each percentage-point rise in funding costs, an additional \$36 billion will be added to the current account deficit.

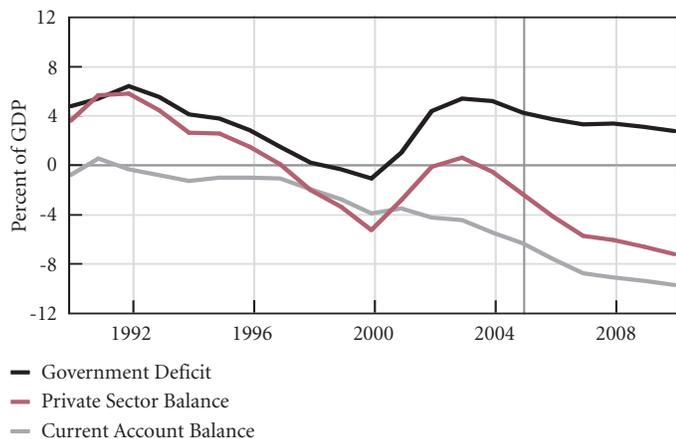
Since the mid-1970s, the United States has imported more than it has exported, and the export-import ratio of goods and services has fallen dramatically to 0.66, which, according to the authors, is an unsustainable trend. Meanwhile, the balance on income flows has not followed the downward trend in the balance on goods and services (Figure 1). U.S. assets held by foreigners have risen to approximately 12 and 14 percent of the total dollar value of the U.S. equity and credit markets, respectively. U.S. liabilities have exceeded U.S. assets since the late 1980s and foreign ownership of U.S. interest-bearing assets has grown more rapidly than U.S. ownership of foreign-bearing assets (Figure 2). At the same time, U.S. interest income payments and receipts have fallen in relation to GDP because of the dramatic decline in interest rates since 2000 (Figure 3).

Using U.S. Bureau of Economic Analysis data, the authors find that the cost of funding U.S. credit market debt has also declined considerably in the last five years (Figure 4) as a result of the downward movement in market interest rates, particularly short-term rates (Figure 5), and the shift in the instruments used to fund the national debt. Another reason the balance on income has remained near zero is that foreign central banks have accumulated large reserves of U.S. dollars, which are earning low returns. The willingness of these banks to continue to accumulate and hold U.S. dollars may soon end, say the authors.

The authors find that none of the unsustainable trends they observed in their September 2005 projections changed in the latter part of 2005. They also find that the benefits of positive income flows for the United States have ended. They expect net interest payments to foreigners to grow and net payments on direct investment to remain stable. The U.S. economy continued to grow on an unbalanced path at the end of 2005, so updated projections using the same assumptions as in their previous analysis show worse outcomes (Figure 6). In order to maintain the projections issued by the Congressional Budget Office (CBO) in its January 2006 report, the combined government deficit reaches a record 9 percent of GDP by 2010 and the current account balance grows to 9.8 percent of GDP. This scenario is unlikely, say the authors.

In contrast to the CBO projections, private sector borrowing and domestic demand have been rising rapidly, and fixed investment is booming. Assuming that the government deficit

Figure 7 Scenario with CBO GDP Growth Path: Main Sector Balances



Sources: Bureau of Economic Analysis and authors' calculations

and GDP growth follow CBO projections, the authors calculate the amount of borrowing from the private sector that would be necessary to finance domestic demand. Their alternative growth path for the main sector balances is shown in Figure 7. The government sector slowly moves back to balance, but the increase in borrowing continues to push the private sector into the red. The net acquisition of financial assets reaches an all-time-high deficit of 7 percent of GDP and the debt-to-income ratio for the personal sector grows rapidly. According to the authors, this scenario seems more likely in the short run, but it increases the risk of default for the U.S. private and financial sectors.

Debt and Lending: A *Cri de Coeur*

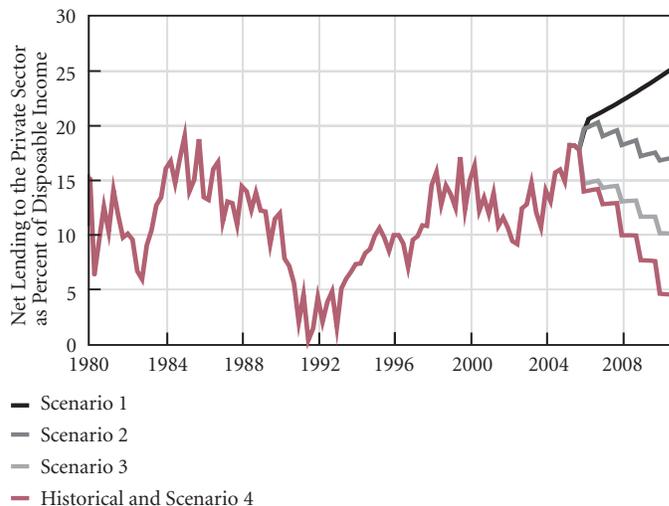
WYNNE GODLEY and GENNARO ZEZZA

Policy Note 2006/4

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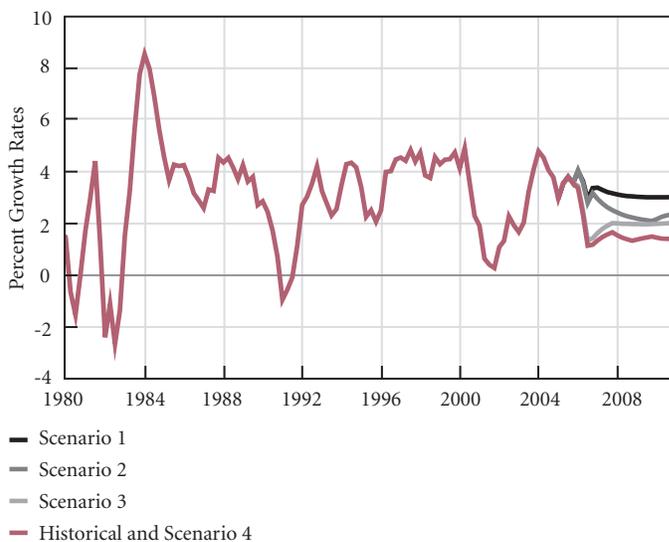
In deference to related but different threats to the U.S. economy, recent Levy Institute papers have emphasized the excessive reliance on lending to the private sector, particularly the personal sector, to offset the growing U.S. current account deficit. According to Distinguished Scholar Wynne Godley and Research Scholar Gennaro Zezza, the centrally important point has not entered the public discussion properly: the path of lending, rather than debt, may be of decisive importance for the medium-term future of the U.S. economy.

Figure 1 Net Lending–Income Ratio



Sources: Flow of Funds, BEA, and authors' calculations

Figure 2 GDP Growth Rates



Sources: BEA and authors' calculations

The authors determine that the private sector balance as a percent of GDP would have to keep falling (to minus 4 percent) and the net flow of lending would have to keep growing (to 20 percent of private disposable income) in order to maintain an average GDP growth rate of 3.3 percent over the next five years. Private debt as a percentage of disposable income would also have to rise (to 225 percent in 2010).

Using projections based on a simple macroeconomic model, the authors find that small differences between debt levels generate huge differences in lending flows (Figure 1). All scenarios imply seriously deficient growth rates and all but one scenario project sustained growth recessions (Figure 2). The historical relationship between net lending to the private sector and the three-year moving average growth rate of GDP suggests that GDP growth would slow down significantly because of relatively small declines in lending.

Program: Distribution of Income and Wealth, and the LIMEW

Conference: Government Spending on the Elderly

Demographic changes in the United States imply a significant growth in the number of beneficiaries in major federal entitlement programs. Existing program rules and rapidly escalating health care costs are expected to lead to fiscal pressures and pose challenges for economic growth.

This conference provides an assessment of forces that drive government spending on retirees. Papers examine how the retirement and health care of older citizens might be financed, and measure the potential impact of different reform proposals.

Session 1. Welfare State and the Incentives to Retire

Chair: Senior Scholar AJIT ZACHARIAS. Speakers: AXEL BOERSCH-SUPAN, Mannheim Research Institute for the Economics of Aging (MEA), University of Mannheim, Germany, and Senior Scholar L. RANDALL WRAY, University of Missouri–Kansas City. Discussants: SERGIO NISTICÒ, University of Cassino, Italy, and RICHARD STARTZ, University of Washington.

BOERSCH-SUPAN examined the generosity of the European welfare state toward the elderly, how that generosity has changed during the past 10 to 15 years, and the relationship of changes in generosity to the process of economic integration. Generosity is defined as per capita social spending in terms of purchasing power parity. He used aggregate EUROSTAT and OECD data, as well as data from the new Survey of Health, Aging, and Retirement in Europe (SHARE), to identify the correlations among various dimensions of welfare state generosity.

He found great variety in the size of the welfare state among European countries, but stable spending patterns and relative generosity between old and young in spite of accelerated economic integration and the introduction of the euro. He also found little evidence to support the hypothesis that spending for the elderly crowds out spending for the young.

The GDP share of social expenditures in the 15 European Union (EU) countries was 23.9 percent in 2001 compared to 14.7 percent in the United States. Europeans have more leisure time, lower income inequality, and longer life expectancies than Americans. Boersch-Supan observed that the current EU balance may be upset by the process of demographic aging (e.g., the average European is as old now as the average American will be in 2017).

Boersch-Supan noted that the EU welfare states experienced a retrenchment in the early 1990s (particularly in Scandinavia) with the exceptions of Ireland and Portugal (the poorest EU countries in the 1980s). In terms of generosity, Switzerland, Sweden, and Denmark are the most generous countries, while Ireland and the Mediterranean countries (Greece, Spain, and Portugal) are the least. The growth rates of per capita spending on the elderly are similar for all countries, but this trend has not equalized per capita social expenditures, as expenditures for old age, disability, and survivor pensions diverge between countries.

Italy spends 70 percent of its social budget on the elderly, while Ireland spends less than a third. Social spending for the young ranges from 5 to 30 percent of the social budget, while per capita expenditures are equally diverse. In most countries, the social budget for the elderly is three times that for the young, and this relationship did not change much between 1990 and 2003. National spending patterns have remained constant but diverse, in spite of an accelerated integration process within Europe. There was no evidence of a negative correlation between the spending share of the elderly and the young.

Boersch-Supan reviewed economic policy outcomes, such as unemployment and poverty rates and the inequality in wealth, income, and consumption; and noneconomic outcomes, such as health and longevity. He noted that Denmark and the Netherlands have Beveridgian flat base pensions (i.e., relatively lower public income levels), while the other countries have Bismarckian earnings-related pensions (i.e., old age is dominated by public pensions). Denmark and Sweden have the lowest Gini coefficient on income inequality, but retiree income

levels in Denmark relative to working persons aged 50 to 65 is also the lowest (50 percent). In France, public attention on maintaining retiree income levels appears to have crowded out attention on unemployment of the young. Boersch-Supan also noted that unemployment is often disguised as early retirement in the age 55-and-over bracket.

Worse health does not necessarily translate into lower life expectancy. Denmark has the highest health index but the lowest life expectancy, while Spain has a poor health index but the highest life expectancy in Europe.

Explanations for differences in the size of the welfare state and the state's generosity toward the elderly are based on the demographic forces of population aging (e.g., Italy has the largest share of elderly citizens and spends relatively more on them), differences in political preferences, and incentive effects in the public transfer system (e.g., early retirement and disability benefits). These factors explain the large social expenditures for the elderly in Sweden, Denmark, and the Netherlands.

There is rising concern about the ability of countries to provide for aging populations. The perceived unsustainability of current programs is the primary driving force behind global efforts to reform social security systems. According to WRAY, the call for reform has overstated future demographic challenges. He believes that social policy can provide for the future in real terms by increasing productive capacity. The likelihood that Social Security in the United States and other developed countries faces a real crisis, therefore, is highly improbable. Policy formation must distinguish between financial provisioning and real provisioning, which can prepare society for the coming challenges.

Wray noted that the world's population is aging as a result of twin demographic forces: declining birth rates and rising longevity. He also noted that a number of factors, aside from the aged-dependency ratio, affect the real burden of workers who support the aged: the labor force participation rate, employment rate, retirement age, growth rate of worker productivity, technological improvements, net immigration, and net imports of goods and services.

The global population is projected to peak in 2050 and stabilize at 9.1 billion. With the exception of the United States, developed nations as a whole will experience a population decline that will be matched by a population rise in emerging countries, although the aging process will also continue in emerging countries as fertility and mortality rates fall (the median age of the world's population will rise from 27 years in

2000 to 37 years in 2050). The share of the global population representing the normal age range of workers will remain constant over the next 50 years (59–60 percent), while the youth-dependency ratio falls and the aged-dependency ratio rises from 7 to 16 percent. A surprising projection is that the average Chinese will be older than the average American by 2050. According to the columnar shape of the population pyramid, the United States is already a substantially aged society. Rising longevity will not change the shape of the curve very much and the population pyramid will not become inverted.

Wray rejected the simplified formula for calculating the necessary tax rate associated with a pay-as-you-go social security system because the formula presumes that a constant proportion of the working-age population is working and that aged people do not work (e.g., an increase in the labor force participation rate and falling unemployment rates will reduce the necessary tax rate). He found that the projected rise of the ratio of publicly provided old age benefits to GDP will rise modestly from less than 4.5 percent today and stabilize at less than 6.5 percent by 2030. He observed that a surprisingly small share of output (relative to GDP) would have to shift to publicly provided social security pensions in highly developed countries.

Wray outlined two separate issues that affect the ability of the future shift of resources to meet the needs of all age groups: (1) the means to achieve the redistribution from within or outside the market place, which is beyond the scope of his paper; and (2) future production. According to the 2005 Annual Report of the Social Security Trustees, which is based on conservative productivity growth data, labor productivity in the United States will quadruple over the next 75 years. An aging society could help to generate effective demand that will lead to sustained high employment with high productivity growth. Once the baby boomer bulge in the population pyramid disappears, the projected productivity growth will be more than sufficient to provide adequate output for all age groups. Furthermore, it is unlikely that political support for public spending on the elderly will wane as the population ages.

Public policy cannot prepare for baby boomer retirements through "advance funding," argued Wray. A Social Security trust fund is simply a case of government owing itself (an internal accounting procedure) and any trust fund accumulation is unlikely to affect the long-run growth rate, which is not easily changed. The burden of providing real goods and services to

retirees in 2050 or 2075 will be borne by workers in those years regardless of taxes imposed today.

The logical conclusion derived from conventional theory is for a social security program that is run on a pay-as-you-go basis. It makes no sense to tax workers and increase output today for redistribution to seniors tomorrow, said Wray. Social policy can provide for the future in real terms by increasing productive capacity in the intervening years (e.g., policies that encourage public and private infrastructure investment, such as nursing homes and other long-term care facilities). Policies that maintain high employment and minimize unemployment are critical to maintaining a higher worker-to-retiree ratio. Reformers have focused on savings promotion schemes, but they ignore labor force policies that would have large, immediate, and long-lasting impacts. The best policy today is to focus on full employment with rising skill levels.

Session 2. Aspects of Economic Well-Being and Gender Disparities among the Elderly

Chair: Research Scholar GREG HANNSGEN. Speakers: Senior Scholar EDWARD N. WOLFF, New York University, and LOIS B. SHAW, Institute for Women's Policy Research. Discussants: Research Associate ROBERT HAVEMAN, University of Wisconsin–Madison, and MADONNA HARRINGTON MEYER, Syracuse University.

In a coauthored paper with Senior Scholar Ajit Zacharias and Research Scholar Hyunsub Kum, WOLFF used the Levy Institute Measure of Economic Well-Being (LIMEW) to examine the disparities between the elderly and nonelderly, the structure of inequality among the elderly, the relative importance of different sources of income in sustaining the living standards of the elderly, and the extent to which government spending on the elderly equalizes the overall distribution of economic well-being.

Wolff noted that the valuation of income from wealth using the LIMEW differs from other methods in two significant ways: (1) the LIMEW distinguishes between home and nonhome wealth; and (2) the estimate of benefits from nonhome wealth uses a variant of the standard lifetime annuity method. He also noted that government expenditures in the LIMEW consist of cash transfers, noncash transfers, and public consumption, and that the LIMEW includes the imputed value of household production. The “elderly” are defined as individuals aged 65 and over, and the basic unit of analysis is the household.

The authors found moderate demographic changes in elderly households over the 1989–2001 period. They also found that Asians had the highest mean income in 2001, followed by non-Hispanic whites, and that married couples were more affluent than single individuals. The size and composition of elderly households differed substantially from nonelderly households (e.g., approximately 40 percent of elderly households are located in the bottom income quintile), and income inequality increased among the elderly.

The mean income from home wealth was 1.81 times higher among the elderly than the nonelderly in 2001, reflecting higher homeownership rates (81 versus 65 percent). A significant disparity also existed between the two groups in terms of nonhome wealth (3.37 times higher among the elderly), which reflected the surging stock market of the late 1990s. Elderly non-Hispanic whites had 2.3 times more home and nonhome wealth than all other racial and ethnic groups. The study showed large discrepancies in cash transfers between the elderly and nonelderly, while public consumption (e.g., educational expenditures) was almost three times higher among the nonelderly. As a result of differences in transfers received, public consumption, and taxes paid, the elderly were a net beneficiary of the government fiscal system (\$22,200 per person in 2001), while the nonelderly were net losers (-\$4,500). The difference between the two groups widened during the 1990s, as did the spread in net spending between the bottom and top quintiles.

Using the LIMEW (a broader measure of economic well-being than official calculations), the elderly appear to be much better off than by other measures. The reasons are the much higher value of income from wealth for the elderly (including a 77 percent increase in income from nonhome wealth over the 1989–2001 period), the widening gap in net government expenditures in favor of the elderly, and the faster relative growth rates of mean and median LIMEW for the elderly. In contrast, the growth rates using the standard money income (MI) measure were higher for the nonelderly.

The authors found two salient differences between the LIMEW and the Census Bureau's “extended income” (EI) measure: (1) income from nonhome wealth of the elderly, relative to the nonelderly, is much higher when the income is reckoned as a lifetime annuity, rather than as current income from assets (the LIMEW ratio was 3.4 in 2001, while the EI ratio was 1.3); and (2) the net cost imposed by the fiscal system on the

nonelderly is considerably lower with the inclusion of the public consumption component in the LIMEW.

According to the LIMEW, the degree of inequality is much higher among the elderly than the nonelderly. By component, base income is the major contributor to inequality for the nonelderly, while income from nonhome wealth is the main contributor for the elderly, and the main reason behind the much higher inequality among the elderly than the nonelderly. (In contrast, using EI, inequality is almost identical among the elderly and nonelderly, and base income is the largest contributor to both groups.) The authors' decomposition analysis shows that inequality is roughly the same among the nonelderly in either measure, but it is much higher among the elderly using the LIMEW than EI. The official measures indicate an increase in inequality among the nonelderly and little change among the elderly over the 1989–2001 period, while the LIMEW shows an increase in inequality for both groups. Marked differences were apparent between the measures in terms of contributions by component.

The authors conclude that the picture of economic well-being depends on the measure, and that gross money income (the most widely used official measure) is an incomplete measure. The LIMEW substantially alters the official picture of economic well-being, because it shows the elderly to be much better off relative to the nonelderly.

As an octogenarian, SHAW addressed government spending on the elderly from an elderly woman's perspective. She noted that expenditures for Medicare and Medicaid are projected to increase more rapidly than Social Security, and that government policies, such as increasing the age of eligibility for Social Security and shifting care of the disabled to unpaid caregivers in order to constrain Medicaid spending, may interact with one another in unexpected ways.

Shaw divided the elderly into two groups: young-old age, where people are physically active and able to care for themselves; and old-old age, where people have disabilities and need assistance. She noted differences between elderly men and women (e.g., there are relatively more women and relatively more married men) and that men are more likely to have spouses as caregivers, while women are more likely to depend on adult children. These patterns, however, will change as a result of health improvements and different marital patterns associated with the aging baby boomer generation.

Shaw observed that proposals to encourage people to work longer would create hardships for the elderly who cannot work

and for workers in physically demanding jobs (held more by men than women) or in service and retail sales jobs (often held by women). She suggested that increasing the retirement age should be accompanied by more readily available disability benefits. In addition, employers must be willing to hire older workers or provide more options, such as phased retirement. She also observed that the trend toward more employment at older ages has begun (e.g., the labor force participation rate for ages 65–69 increased between 1985 and 2005).

Shaw noted that some family members have difficulty working because they are needed as caregivers, but that these caregivers delay the need for nursing home care and reduce the use of formal paid home care and pressure on public programs. The United States appears to be following the path of some European countries that encourage both more paid work and more unpaid elderly care. Women are more likely to feel the impact of these conflicting demands, she said.

Although care by family members may be more efficient than paid care, it is potentially stressful for both the recipient and caregiver, who may also be jeopardizing his or her own retirement income. Since the value of caregiving to society may exceed the value to the caregiver, there should be public support to encourage caregiving by family members (e.g., adult daycare facilities paid for by Medicaid, as well as caregiver allowances and tax credits).

Paid caregivers are predominantly minority women who work for low pay without benefits, so turnover is high, which results in insecurity for patients. More women than men rely on paid care, even though women have less income and fewer assets. Nursing home care averages \$70,000 per year, which is equivalent to the median net worth of female householders over age 65, so it is difficult for lower-income people to afford this kind of accommodation.

More than half of long-term care costs for the elderly in 2004 was paid for by federal and state governments (35 percent by Medicaid and 25 percent by Medicare), while more than one-third was paid for by recipients, their families, or other sources, such as charitable funds. Not counting the value of unpaid care, nursing home care carries much higher Medicaid expenditures than home-based care (40 versus 25 percent). Out-of-pocket medical expenditures during the last years of life represent a significant proportion of a person's income and often draw down assets, so the surviving spouse (usually the wife) is less likely to afford his/her own expenses. The option of

long-term care insurance is expensive and many individuals do not qualify for health reasons.

In spite of a decrease in disabilities in recent years, current trends, such as increasing income inequality, immigration, and disabilities at younger ages, portend smaller decreases in the future. Medicare and Medicaid are likely to be under great pressure because of the size of the baby boomer generation, and more of the burden will be placed on families for unpaid care. Relatives of the elderly, however, are likely to be less available because of changes in social norms (e.g., fewer marriages and children). It is probable, therefore, that the elderly will become more reliant on paid care, so higher wages and better working conditions may be necessary to retain high-quality workers. The risk of outliving one's assets may increase for the next generation, said Shaw.

Shaw recommended a state-provided long-term care insurance system for the United States—such as the systems in Germany, Japan, Austria, and Luxembourg—that is paid for by Medicare and financed by increasing the payroll tax or reinstating the estate tax at higher levels. An important strategy to reduce long-term care expenditures is to help individuals remain active longer, through medical advances and other means, such as assistive devices for mobility and retirement communities with services.

Session 3. Changing Patterns of Retirement Behavior

Chair: Senior Scholar CAREN A. GROWN. Speakers: KAREN E. SMITH, Urban Institute, and MICHAEL HURD, RAND Corporation. Discussants: LUCIE G. SCHMIDT, Williams College, and DANIEL L. THORNTON, Federal Reserve Bank of St. Louis.

The Office of the Chief Actuary projects that payroll taxes will be unable to pay promised benefits in 2017, and all assets held by the Social Security old-age and survivors insurance and disability insurance trust funds will be depleted by 2041. Based on a coauthored paper with Barbara A. Butrica and C. Eugene Steuerle, Urban Institute, SMITH presented the first comprehensive look at how changes in retirement behavior and reforms that encourage workers to delay retirement could impact individual retiree benefits, the solvency of the Social Security trust funds, and general revenues. Combining additional work with a corresponding change in the normal retirement age would allow Social Security to remain solvent beyond 2049, she said. Under all simulated reform options, added work leads to a more solvent and financially secure retirement.

The authors simulated the effects of delayed retirement by one and five years using the Urban Institute's Dynamic Simulation of Income Model. The retirement age represents the age at which a worker experiences at least a 50-percent drop in earnings from average earnings received between ages 45 and 50. The authors found that people could increase their annual consumption by 5 or 25 percent if they worked one or five years more, respectively.

The authors conducted policy simulations that differ from Social Security current law and compared each simulation with the baseline scenario (no reform). Total retirement wealth is defined as the sum of Social Security wealth, defined benefit pension wealth, defined contribution account balances, and earnings wealth, less federal and state income taxes and payroll taxes. Each component of total retirement wealth is measured as the present discounted value of the expected future stream of benefits or payments from age 50 until death. The computations assume a real interest rate of 2 percent. At the macro level, the authors calculated the change in the Social Security deficit and general revenue due to additional work.

According to the baseline scenario, retirees who survive to 2049 could expect their retirement wealth to support an annual consumption stream of \$26,570 (\$2006) per year. If everyone delayed retirement by one year, the average net retirement wealth would increase by \$31,897 and the average annuity would increase by \$1,317 per year (5 percent). Working an additional five years would increase average net wealth by \$160,992 (26 percent) and the average annuity by \$14,888 per year (56 percent). The large gains in individual net wealth come from earnings, and the authors propose that the additional taxes could be used to support more government spending for retirees or the population as a whole.

In terms of the five reform scenarios, the authors find that, in contrast to pure benefit cuts that decrease average net wealth, benefit cuts that are accompanied by additional work increase average net wealth, which will reduce the size of any benefit cut needed to achieve solvency. The gains are sizable in every quintile, and workers in the bottom quintile would receive an average annuity increase at twice the rate of workers in the top quintile, partly because of the progressive Social Security and income tax systems.

Although additional work goes a long way toward insuring that retirees have a comfortable retirement, working longer, by itself, does not close the gap between projected Social Security

income and outlays. Combining additional work with changes in Social Security policy has a much larger impact on the Social Security deficit (e.g., increasing both the early entitlement age and the normal retirement age) and moves the year of insolvency beyond 2049 for most scenarios. Accounting for the increase in general revenues, all five-year scenarios would be solvent throughout the projection period. If more workers are encouraged to delay retirement, fewer promised benefits will have to be reduced in order to achieve solvency, observe the authors.

The authors note that a number of policy changes have already occurred that should result in more work at older ages (e.g., an increase in the Social Security normal retirement age and the scaling back of retiree health insurance). Additional options include changing the Social Security actuarial adjustments to boost the rewards for working longer and increase the penalties for retiring earlier; increasing the benefit entitlement age for both Social Security and Medicare; changing incentives for early retirement that are outside the Social Security system; and eliminating the requirement that Medicare serves as the secondary payer for workers with employer-sponsored health coverage.

Individuals leave bequests because they hold wealth as insurance for a longer life. Based on a coauthored paper with Li Gan and Guan Gong, HURD presented the effect of changes in Social Security benefits on the level of bequests. Based on a life-cycle model for consumption by single individuals, he found that increases in benefits are unlikely to be offset by increases in bequests.

In life-cycle models of consumption under uncertainty, individuals make choices in the current period based on current information and beliefs in order to maximize the expected discounted present value of utility. Lifetime utility is based on consumption and bequests, which depend on the probability of survival to each future period, the return to saving, budget constraints, optimal consumption choices in each period, and the value of financial bequests at death. Resources include initial bequeathable wealth, pensions, and annuities, such as Social Security.

The authors developed a behavioral model for a single person that maximized expected lifetime utility over the consumption path and emphasized annuity income. Using data from the Asset and Health Dynamics study (AHEAD), the model forecasts consumption and wealth for each individual after retirement/disability. An important determinant of the consumption

path is mortality risk. The model solves for the optimal consumption path conditional on initial bequeathable wealth, Social Security benefits, age, sex, and number of children.

The authors optimized the path of bequeathable wealth and calculated the expected present value of consumption, Social Security benefits, and bequests prior to formulating a lifetime balance sheet. They subsequently simulated the model by increasing the level of Social Security benefits in order to show how the increase affected consumption and bequests.

The authors found that expected bequests generally declined when Social Security benefits were doubled (e.g., from \$10,000 to \$20,000 per year) for individuals with or without a bequest motive. They concluded that increases in Social Security benefits are unlikely to be offset by bequests, particularly for single individuals.

Session 4. Interaction between Private and Public Provisioning

Chair: Resident Research Associate W. RAY TOWLE. Speakers: TERESA GHILARDUCCI, University of Notre Dame, and JAMES MARTON, University of Kentucky. Discussants: ZVI BODIE, Boston University, and BARBARA WOLFE, University of Wisconsin–Madison.

According to GHILARDUCCI, the decline in pensions and savings of U.S. workers is dimming the retirement prospects for many. Only one-third of workers are on track to achieve the 70 percent retirement income replacement rate. Earnings will become more important than investment income for future retirees, who will be increasingly forced back into the market because of eroding pensions. There is little evidence that older people have an increased ability to work longer, so we need policies that speak to the special needs of older people, she said.

The U.S. system of retirement security is in transition: private-sector defined benefit (DB) plans are declining in favor of defined contribution (DC) plans (e.g., 401(k) plans). However, the transition is unlikely to increase the number of workers covered by pensions or reduce the risk of losing pensions. Social Security is expected to replace about 41 percent of an average worker's income, so employer pensions are the only hope to supplement middle-class incomes. Pensions as a source of retirement income, however, are diminishing, and there is a steep savings rate decline in terms of contractual savings (e.g., employer-financed DB pension plans). The share of workers whose employers sponsor a pension plan has fallen (to 61.8

percent in 2004), while the pension participation rate of workers has also fallen (to 53.4 percent). As DC plans have become more important, the voluntary participation feature of 401(k) plans has become more significant for low-income workers, but the average participation rate has stagnated at 80 percent.

The stagnation in pension coverage is partially explained by firms reducing their employee compensation costs by replacing DB plans with 401(k) plans. Ghilarducci outlined four changes that have enabled companies to save costs by creating a hostile environment for DB plans: (1) the decline in union contracts has helped employers adopt 401(k) plans without any loss in productivity; (2) the inhospitable regulatory environment for DB plans compared to DC plans; (3) the shift in government attitudes about employer and government responsibility for social insurance combined with the uncertainty of DB pension costs; and (4) the increase in commercial vendor interest for 401(k)-type accounts relative to traditional DB pensions. Ghilarducci believes that the most obvious reason for employers to shift to DC plans is that the shift lowers worker pay (pension costs for firms can be reduced by as much as 25 percent) without workers retaliating. She noted that the cost savings is not distributed equally—the biggest losers are low-paid workers, as pensions are skewed toward upper-income workers.

Contrary to recent proposals by the Urban Institute, Ghilarducci disagrees with the “win-win” proposition of working until age 70. She noted that our standard of living consists of money and leisure, and that workers retire because of the disutility of working longer (i.e., the value of time increases as time becomes scarce). There is little evidence that older people have an increased ability to work longer, she said, but they are forced into the market because of eroding pensions. The only way to ensure that older workers have jobs on their own terms depends on secure retirement incomes, and it is not clear that employers will provide the jobs desired by older workers.

There is great opportunity for policymakers to reverse the deterioration of retirement income, says Ghilarducci. Policies should be designed to encourage efficient pension plans and voluntary work (e.g., devising new DB-hybrid pension designs), single-employer plans should merge with multiemployer plans (this will require legislation and regulatory changes), sensible protections should govern the investment behavior of DB-plan fiduciaries (e.g., limiting an employee’s company stock as a percentage of his/her portfolio), individuals should be allowed to

use efficient, not-for-profit individual account vendors, and the Disabilities Act should be extended to protect older workers.

Based on a coauthored paper with Stephen Woodbury, Michigan State University, MARTON focused on the provision of early retiree benefits and the implications of these benefits on policy and the retirement behavior of workers. He found that workers who are eligible for retiree health benefits are substantially more likely to retire early than workers who are ineligible for these benefits. He also found that pensions and retiree health benefits have strong independent impacts on retirement behavior, cost sharing of retiree health benefits is a factor in retirement behavior, more retiree health benefits are accessed during periods of recession than economic expansion, and younger workers are more likely than older workers to take up retiree health benefits.

Marton noted that fewer private employers offered retiree health benefits in 2003 than in 1997 (13 versus 20 percent), and public employers were more likely to offer benefits than private employers (e.g., 75 percent of state government employers offered benefits in 2003). The proportion of workers expecting to receive benefits upon retirement is declining, and many workers who expect benefits do not receive them. The decline in retiree health benefit coverage was attributed to Financial Accounting Statement No. 106 (employers were required to treat promised retiree health benefits as financial liabilities after 1992), a federal court ruling in 2000 (it is discriminatory for an employer to provide early retirees with more generous health benefits than the combined benefits provided by the employer and Medicare after age 65), and a deliberate strategy by employers to slow the loss of older skilled workers.

An important part of appraising the benefits and costs of government policy (e.g., universal health insurance coverage) is understanding the consequences of policy on the labor supply. In the absence of a government response, workers nearing the traditional age of retirement are expected to remain in the labor force. Marton observed that little research has examined the impact of health insurance coverage on retirement and that previous studies have uniformly concluded that the availability of retiree health benefits significantly increases the probability of retirement.

Woodbury and Marton examined the Health and Retirement Study (HRS) and used more recent data (1998, 2000, 2002, and 2004) to extend the results of previous studies. They replicated the results for 1996 (workers covered by retiree health benefits were more likely to retire) with one exception: workers

covered by DC and DB pension plans were much more likely to retire (14–15 versus 5–7 percent). Variations in the relationship between retirement and retiree health benefits over time were attributed to the state of the labor market.

Marton cautioned that his findings (i.e., retiree health benefits encourage earlier retirement) should not be interpreted causally because workers with a desire to retire early will choose jobs that offer retiree health benefits (self-selection would lead to an upward-biased estimate of the causal effect of retiree health benefits on retirement). This bias is an issue ripe for future research, he said.

Session 5. Budgetary and Macroeconomic Implications of Aging

Chair: Research Scholar HYUNSUB KUM. Speakers: SHRIPAD TULJAPURKAR, Stanford University, and JAGADEESH GOKHALE, Cato Institute. Discussants: CLARK BURDICK, Social Security Administration, and STEPHANIE A. KELTON, University of Missouri–Kansas City.

TULJAPURKAR considered U.S. population forecasts in the context of government spending policies on the elderly. He found that, even with substantial uncertainty in economic and demographic variables that caused a wide range of insolvency dates (approximately 25 years), the probability was low that the tax level required to achieve actuarial balance over a 75-year horizon would fall outside the range of 5–8 percent. Using a combination of models to account for expected shifts in behavior, labor force participation rates, and payouts from the disability program in response to an increase in the normal retirement age, Tuljapurkar found that Social Security solvency is enhanced by policy changes, such as tax increases dedicated to Social Security in combination with trust fund investment in the S&P 500 index or an increase in the normal retirement age.

Tuljapurkar outlined the determinants of population change (mortality, fertility, and migration) and the general features of stochastic forecasting models. He noted that mortality rates for large national populations are well understood, that U.S. mortality rates have fallen at approximately the same age-specific exponential rate over many decades, and that deviations around the long-term trend can be modeled using relatively simple stochastic processes (e.g., the Lee-Carter mortality model [1992]). He discussed the components of an integrated projection model for the Social Security system that combine economic, policy, and demographic variables. He also noted that fertility

rates are difficult to forecast because they have varied enormously in the past half-century and have countered the notion that rates should stabilize close to the population replacement value of 2.05. (The United States, with a stable, but below replacement, fertility rate is an exception among rich industrialized countries that have both falling and below replacement fertility rates.)

Tuljapurkar's stochastic model of fertility is broadly similar to the Lee-Carter mortality model; it incorporates historical volatility and generates sample paths of age-specific fertility over time. Since migration is driven by policy, there was no attempt to model the historical dynamics; instead, a scenario method was adopted in line with either the Census Bureau or the Social Security Administration. The approach to model pension systems builds on the work of Social Security actuaries. Multivariate autoregressive models are used to project labor force participation rates, productivity growth, real interest rates, and returns on the stock market, and to test for correlations between the series. The economic models are estimated using historical data in conjunction with expert opinion, and Monte Carlo simulations are employed to generate stochastic sample paths. Tax and benefit schedules under existing law set payments into and out of the system, and Social Security Administration assumptions are followed to estimate past retirement patterns and behavioral responses to planned changes in retirement age and incentives.

The old-age dependency ratio is key to assessing flows into and out of any transfer system for old-age populations (e.g., health care). By 2030, baby boom aging will increase the dependency ratio by about 150 percent (from 0.2 to 0.35), with only a one-in-six probability that the ratio will decline after 2030, in spite of large uncertainties about some of the predictions (e.g., fertility). According to Tuljapurkar's stylized demographic model, the retirement age would have to increase by 1.7 years per decade in order to keep the dependency ratio constant over time. This profile contrasts with current law changes to the retirement age, which are slower and capped at two years (from age 65 to 67).

Many people believe that faster economic growth will improve the financial outlook of the Social Security system. GOKHALE analyzed the effect of economic growth on Social Security solvency using an in-perpetuity measurement, as opposed to a truncated horizon of 75 years. He found that under the current Social Security tax and benefit structure, faster real wage growth improves the actuarial balance over 75

years, but reduces the balance in perpetuity and, therefore, would not necessarily improve Social Security's finances.

The current Social Security benefit formula indexes workers' earnings for wage growth (through age 60) to calculate the average indexed monthly wage, which is the basis for computing Social Security benefits. The most prominent measure used to assess the program's long-term finances is actuarial balance, which equals the present value of the system's annual net income expressed as a percentage of payrolls over the measurement period. The 2005 Trustees Report projects a 75-year actuarial deficit of 1.92 percent of taxable payrolls, which indicates the necessary size of an immediate and permanent payroll tax increase (1.92 percentage points) in order to restore the program to actuarial balance over 75 years.

The main rationale for applying an infinite horizon measure to system financing is that it gives the most complete view of total assets and obligations of the Social Security program. For example, limited time horizons reduce the effect of a projected decline in the worker-to-beneficiary ratio over the very long term, while, under perpetuity calculations, a declining worker-to-beneficiary ratio magnifies the future impact of faster wage growth on Social Security's cost rate and widens the gap between the present value of outlays and revenues, thus yielding a larger actuarial deficit.

Gokhale built a stylized model of a pay-as-you-go Social Security program, analyzed the effect of increased economic growth on Social Security solvency measured in perpetuity, and examined the results under a variety of demographic and interest rate conditions. He found that faster wage growth could potentially reduce the program's actuarial balance measure if the ratio of workers to beneficiaries continued to decline. He also found that a decline in Social Security's actuarial balance was plausible under perpetuity calculations for the demographic and economic conditions projected for the United States, even though the same wage growth rate was shown to improve the program's 75-year actuarial balance and the measure of sustainable solvency.

Gokhale explored the effects of faster wage growth on the actuarial balance using several parameters: a constant worker-beneficiary ratio, a declining worker-beneficiary ratio, benefits dependent on current wages and wages lagged one period, benefits dependent on wages in several earlier periods, and calibration to U.S. demographic projections. The alternative parametric assumptions progressively made the model more

realistic. Under stylized calculations calibrated to features of the Social Security system, Gokhale found that faster growth could worsen the actuarial balance, using an infinite horizon. A declining worker-beneficiary ratio imposes a "demographic drag" that limits the improvement in annual cash balance ratios and worsens the overall actuarial balance (the balance would not decline using a 75-year time horizon).

Session 6. Retirement Security: Problems and Prospects

Chair: President DIMITRI B. PAPADIMITRIOU. Speakers: Senior Scholar EDWARD N. WOLFF, New York University, and MELISSA M. FAVREAU, Urban Institute. Discussants: BROOKE HARRINGTON, Brown University, and ROBERT K. TRIEST, Federal Reserve Bank of Boston.

The adequacy of retirement income has gained in importance in association with the increasing share of the U.S. population that is nearing retirement. According to WOLFF, more than 20 percent of all households had no private pension plans in 2001, and many households nearing retirement (ages 47–64) will have to rely solely on Social Security for their retirement income. Although the adequacy of retirement income improved between 1989 and 2001, large gaps in retirement preparedness remain, and retirement wealth is unequally distributed as a result of private pension assets. More than 40 percent of households between the ages of 56 and 64 fall below the 75-percent threshold (retirement income relative to preretirement income), particularly African American and Hispanic households, and single women.

Wolff noted that one of the distinguishing features of studies assessing whether households are adequately prepared for retirement is the consumption pattern in retirement. The principal data sources for his study are the 1983, 1989, and 2001 Survey of Consumer Finances (SCF) conducted by the Federal Reserve Board. Wolff's basic wealth concept is marketable wealth (net worth), which is defined as the current value of all marketable or fungible assets less the current value of debts. He finds robust growth in wealth, but widening inequality, during the 1990s. He also finds that older households have higher wealth-to-income levels and that Social Security is the only universal wealth form, which is increasingly important in preparing middle-class families for retirement.

Wolff divides retirement income into four components: (1) standard wealth holdings, (2) defined contribution pension holdings, (3) defined benefit pensions, and (4) Social Security.

He departs from the standard approach to annuity estimation by accounting for differences among households in the portfolio composition of wealth. He estimates that the mean retirement income for all households aged 47 to 64 was \$74,800 in 2001 and that the income was distributed between net worth (59.4 percent), pensions (23.3 percent), and Social Security (17.3 percent). The mean retirement income of minority households was only one-quarter that of white households in 2001, and minorities obtain a much higher share of their retirement income from Social Security (30.5 versus 15.6 percent) and pensions, and a lower share from standard wealth holdings. Approximately 30 percent of households in the 47 to 64 age group are projected to have retirement income that is less than twice the poverty line.

Wolff recommends more serious consideration of policies that improve private pension coverage and wealth accumulation for African American and Hispanic households, and single women. Public policy should focus on securing private pension wealth (to ensure that household accumulated savings are available when people retire) and Social Security. The latter appears to be at the heart of improving retirement income security for many groups.

Based on a coauthored paper with Gordon B. T. Mermin and C. Eugene Steuerle, both of the Urban Institute, FAVREULT examined the rationale for a minimum benefit associated with Social Security. She outlined the redistributive purpose of Social Security and how it relates to other purposes of the program, presented minimum-benefit designs based on years of covered work and the current poverty threshold, and empirically examined the effectiveness of the designs to achieve goals, such as reduction in poverty. In light of Social Security's long-term fiscal deficit, the authors assume that contribution increases and benefit reductions would each satisfy half of the program's annual deficit in 2050. The authors conclude that there is a case for expanding minimum benefits because they could substantially reduce poverty in old age.

Favreault noted that the current design of Social Security reflects a compromise between the principles of progressivity and individual equity. A clear goal of the program is to provide adequate income for retirement, and this goal has reduced poverty among the aged. There is room for further poverty reduction, however, particularly for high-risk groups, such as black and Hispanic women. Social Security also has the goal of redistributing income across and within generations but, since benefits are related to earnings rather than taxes paid, the

amount of income redistribution varies enormously from one generation to the next and among groups with different life expectancies. The system provides higher rates of return for low earners (but not necessarily for racial and ethnic minority groups) and workers with less education. The imbalance between benefits and taxes within Social Security's financing structure will force some reform, Favreault said.

Social Security attempts to redistribute income based on three provisions: (1) a progressive formula of benefit rates (the most effective mechanism); (2) a limited number of years in the benefit formula (which fails to reward low-income workers who work more than 35 years); and (3) add-on spousal and survivor benefits (based on a stereotypical family unit that is less common today). A minimum benefit could be more efficient at redistributing income than are these mechanisms, particularly the latter two, stated Favreault.

Favreault outlined a number of minimum benefit proposals and identified several key issues: benefit level; years of service; qualifying disabled persons; the computation method; spousal rights; and coordination with means-tested assistance, such as Medicaid. Under current law, a minimum-wage worker with a 40-year employment record would, at the normal retirement age, earn a benefit that just reaches the poverty level. Many retirees (50 percent of women and 20 percent of men) will receive benefits below the poverty level.

Social Security reforms that take other income sources into account can help to improve resource targeting. A carefully designed minimum benefit has the potential to achieve progressive goals effectively and is more target efficient than current redistributive mechanisms, said Favreault. She explained that a means-tested approach poses several problems, such as inaccurately measuring well-being among the aged. She observed that increases in the minimum benefit would require coordination with current means-tested programs. The expansion of means testing could target transfers more progressively, but would raise significant problems of enforcement and administration, and could generate inequities and program interactions. Minimum benefit options with relatively high qualifications tend to have relatively modest impacts. More generous minimums have broader reach, but also include issues of equity and work incentives.

Favreault observed very different employment histories between men and women, and rapidly changing employment for women. She outlined some design issues for minimum benefits, including the complexity of labor market dynamics for low-wage

workers, number of years of covered employment, handling of periods of covered and uncovered employment, and treatment of immigration. She noted that her analysis differed from previous research because it used a more detailed simulation model with a broader population base, which included recent cohorts who are likely to be affected by reform in a reduced system, and it incorporated information on total income.

Favreault presented the results of eight alternative benefit options that included four distinct minimum benefits, one formula adjustment, and two common reforms (a chained Consumer Price Index and an increase in the number of computation years from 35 to 40) that used the Urban Institute's DYNASIM3 microsimulation model. The simulations solved for parameters that guaranteed equivalent expenditures across reforms in 2050 and then changed the Social Security benefit formula in order to protect workers with relatively low incomes. The key objective was to determine how the alternatives performed based on a set of criteria (adequacy, equity, and efficiency). Because the analyses assumed that individuals do not change their behavior as a consequence of benefit reductions or new minimum benefits, Favreault advised people to be conservative when interpreting her results.

In all four minimum benefit options, women are more likely than men to receive a minimum payment in 2025 and 2050, but men's incremental benefits from the minimum are greater than women's. The price-indexed minimums reached, proportionately, more women than the wage-indexed minimums did. In terms of aggregate expenditures, all options were more redistributive toward women and immigrants in 2025, and toward low-income individuals, blacks, and Hispanics in 2025 and 2050. Favreault found that age patterns in benefit payments differed markedly across options (especially wage-indexed minimums for younger ages), and unmarried beneficiaries gained more absolutely than married beneficiaries. She also found that formula adjustments were as effective as some options at achieving certain objectives (e.g., insuring adequate income, while rewarding work effort). But there were some equity tradeoffs (e.g., a higher fraction of benefits went to individuals with fewer work years). In contrast, the option containing more years of consumption had several desirable equity and redistribution properties.

The authors forecast that the poverty rate for persons aged 65 years or more would be 9.5 percent in 2025 and 8.4 percent in 2050—both are lower than today's figure (9.8 percent)

because wages are expected to grow faster than prices. The relative rankings of the options remained the same for family incomes that were less than 150 percent of the poverty level.

Favreault presented a few caveats to the analysis: the DYNASIM3 model projections are very sensitive to assumptions about future employment patterns and minimal behavioral responses. The estimates did not focus on family-structure issues, so further investigations of minimum benefit designs should reconsider the undesirable equity features of spouse and survivor benefits. The authors pointed out that all of their proposals would have similar costs in 2050, but the costs would take different trajectories between now and then. The most effective changes to old age, survivors, and disability insurance are likely to combine parameters that include means for improving program adequacy and for enhancing horizontal equity.

Household Wealth and the Measurement of Economic Well-Being in the United States

EDWARD N. WOLFF and AJIT ZACHARIAS

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www.levy.org/pubs/wp_447.pdf

The official measure of household economic well-being in the United States—gross money income—is limited because it does not account for some determinants of well-being, such as household wealth. Senior Scholars Edward N. Wolff, New York University, and Ajit Zacharias find that the level and distribution of economic well-being is substantially altered when money income is adjusted for wealth. The authors find that the addition of annuity flows and imputed rent widens the income gap between whites and other races, and increases the relative well-being of the elderly. Therefore, U.S. policies that ignore the effects of asset ownership will only partially address the factors that affect economic inequality. The authors' research also contradicts the conclusion—based on the U.S. Census Bureau's standard money income concept—that the working rich have replaced the rentiers at the top of the economic ladder.

The authors use data from the Federal Reserve Board's Survey of Consumer Finances (SCF) for 1983, 1989, 1995, and 2001. Their principal wealth concept—net worth—is defined as the current value of all marketable and fungible assets less the current value of debts. This definition reflects wealth as a store of value and, therefore, a source of potential consumption. The

authors combine income and wealth into a single measure of household well-being by deducting property income (dividends, interest, and rent) from money income and adding the imputed rental cost of owner-occupied housing and the lifetime annuity value of nonhome net worth. Their approach differs from the standard approach in two significant ways: (1) home wealth is distinguished from nonhome wealth; and (2) actual historical rates are used to compute lifetime annuities. Moreover, the authors account for differences in the portfolio composition of nonhome wealth.

Wolff and Zacharias find that mean and median net worth increased 82 and 36 percent, respectively, between 1983 and 2001, indicating rising inequality during the period (the largest gains in wealth related to financial and pension assets). The authors compare the results of three different definitions of economic well-being: the standard definition of money income, SCF income (money income plus realized capital gains), and their wealth-adjusted measure. The main factor contributing to their measure's higher growth rate is the steep rise in income from nonhome wealth associated with annuities. The authors' measure also shows a wider racial gap, which reflects a larger wealth gap than an income gap. In terms of the Gini coefficient, the wealth-adjusted measure shows—in all years—the highest level of inequality. Inequality was shown to increase more in the 1980s than in the 1990s, according to all measures.

Differences between Gini coefficients reflect differences in relative income gaps and rankings of households across alternative definitions of economic well-being. Reranking accounted for substantial differences in inequality between the money income and wealth-adjusted income measures, especially in 2001, when there was a sharp increase in the share of annuities.

All measures show a large increase in the share of the top decile over the 1983–2001 period (9.5 to 12.2 percentage points), with most of the increase accruing to the top 1 percent of the overall distribution. Mean imputed income from wealth generally increased by income decile, indicating a positive overall correlation between income and wealth. The much higher rate of increase between the ninth and tenth deciles was mainly due to annuities rather than imputed rent, and annuities dominated imputed rent in all income deciles. Income from wealth as a proportion of total personal income for all households in 2001 was relatively more important in the wealth-adjusted measure (28.6 versus 7.2 percent in the money income measure) and in the top percentile (increasing from 13 percent in 1983 to 45.7 percent).

The authors employ a sensitivity analysis based on two alternative assumptions about imputing income values for the home and nonhome components of wealth: (1) homeowners are assigned the annual benefit of converting their home equity rather than house values into an annuity; and (2) income from nonhome wealth is estimated using a constant bond coupon rate of 3 percent for each asset rather than a constant lifetime annuity flow based on average total real rates of return. The first alternative assumption has a minimal impact on the Gini coefficient for household income. The second alternative assumption, however, results in a sizeable reduction in the Gini coefficient (0.032 points in 2001) and reflects the much higher level of annuity versus bond coupon income. This may have a large impact on measured racial differences in well-being, say the authors, as it reflects a different average portfolio composition for whites, who hold a higher percentage of assets in stocks.

Eliminating the mortality differential effect has a pronounced impact on the measurement of relative well-being by age group. Using the bond coupon (and return on home equity) method leads to an increase (decrease) in the relative well-being of younger (older) households. Results by parental and marital groups mainly reflect differences in age.

The Temporal Welfare State: A Cross-national Comparison

JAMES MAHMUD RICE, ROBERT E. GOODIN, and ANTTI PARPO
Working Paper No. 449, May 2006
www.levy.org/pubs/wp_449.pdf

A summary of this working paper appears in session 4 of the write-up for the conference on time use and economic well-being in the Winter 2006 *Summary*, Volume 15, No. 1, pages 11–12.

Time and Money: Substitutes in Real Terms and Complements in Satisfactions

J. BONKE, M. DEDING, and M. LAUSTEN
Working Paper No. 451, May 2006
www.levy.org/pubs/wp_451.pdf

A summary of this working paper appears in session 7 of the write-up for the conference on time use and economic well-being in the Winter 2006 *Summary*, Volume 15, No. 1, pages 16–17.

How Does Household Production Affect Earnings Inequality? Evidence from the American Time Use Survey

HARLEY FRAZIS and JAY STEWART

Working Paper No. 454, June 2006

www.levy.org/pubs/wp_454.pdf

A summary of this working paper appears in session 6 of the write-up for the conference on time use and economic well-being in the Winter 2006 *Summary*, Volume 15, No. 1, pages 15–16.

Program: Gender Equality and the Economy

Symposium: Gender Equality, Tax Policies, and Tax Reform in Comparative Perspective

This symposium focused on the gender dimensions of tax policy and tax reforms in countries at different levels of development. Participants presented papers based on their research about South Africa, India, Kenya, New Zealand, the United Kingdom, Spain, the European Union, Canada, and the United States.

Topics covered include gender biases in direct taxation, including biases in individual and joint filing, and in the structure of exemptions, deductions, and allowances; gender biases in indirect taxation, including VAT and excise or sales taxes; the impact of personal income taxation on labor supply, household production, and time use; gender issues in tax reform and fiscal decentralization; and theoretical and methodological issues in tax burden and tax incidence analysis from a gender perspective.

Session 1. Modeling the Implications of Personal Income Tax for Intrahousehold Inequality and Labor Market Participation in Europe

Chair: Senior Scholar DIANE ELSON, University of Essex, Great Britain. Speakers: HOLLY SUTHERLAND, Institute for Social and Economic Research (ISER), University of Essex, Great Britain, and PALOMA DE VILLOTA, Universidad Complutense de Madrid, Spain. Discussant: FRANCES WOOLLEY, Carleton University, Canada.

Based on a coauthored paper with Herwig Immervoll, OECD, European Centre, ISER, and IZA, and Horacio Levy, ISER, University of Essex, SUTHERLAND outlined the equalizing properties of tax-benefit systems in Europe. She focused on gender inequalities in income and work incentives, and redistribution within households consisting of working-age couples. Using EUROMOD, a tax-benefit microsimulation model for the European Union (EU), the authors found that the tax-benefit systems of Austria, Finland, the United Kingdom, and France were the most successful in equalizing incomes between partners. Countries with independent income tax systems achieved greatest strides toward equalization, while countries with joint taxation had earnings disadvantages for women.

While gender discrimination is not explicit in the tax- or cash-benefit systems of developed countries, Sutherland noted that there are significant gender effects from the systems. Since the division of labor by gender is relevant within the household, an aggregate perspective does not show how earning opportunities and public policies affect living arrangements within families. She speculated that tax-benefit systems that reduce income inequalities between partners would also reduce the incentive for the lower earner to earn an independent income.

Independent income is defined as own-earned income plus income from capital and transfers from other households (i.e., disposable income, excluding pensions). Sutherland quantified the difference in independent income by individual within the household and then measured the difference after the imposition of the tax system and the payment of benefits. Work incentives were measured in terms of higher household net income following a change in household earnings.

The various income, price, and tax-benefit system data sets were updated to 2001. The average share of pretax-benefit income received by women ranged from 18 percent in Greece to 37 percent in Finland. The share remained below 50 percent in all countries because of nonparticipation in the workforce, lower work hours and wages, and “pairing” of independent incomes (e.g., high-earning males paired with low-earning females). Sutherland found differences between countries, such as women’s wages relative to men’s and women’s share of household income, as well as similarities, such as lower female earnings relative to males for all income quintiles. Sutherland also found gender inequalities between partners in terms of other income sources.

The effect of the tax-benefit system in reducing the average inequality between partners is illustrated by comparing the shares of disposable income by women with the shares of independent pretax-benefit income. The tax-benefit systems in all countries reduced within-couple inequalities on average. The equalizing effects were large for couples with low income, while independent incomes tended to be more equal in couples with high combined incomes. The equalizing effect declined as household disposable income declined, but increased for couples with dependent children and for couples less than 40 years of age. Joint tax systems tended to reduce tax burden differences between the higher- and lower-earning individuals within couples.

Assessing the equalization contribution of the tax-benefit system by component—income taxes, social contributions, means-tested benefits, and nonmeans-tested benefits—is relevant for policies that reduce gender inequalities. Sutherland found wide variations in contributions by component across countries. Progressive income taxes reduced inequalities, but the effect was smaller in countries with joint taxation (Portugal, France, and Germany). There was greater equalization in the bottom quintile of household income in countries where income taxes play a smaller role and benefits play a larger role. The effect of nonmeans-tested benefits depended on who received the benefits, while the effect of means-tested benefits played a larger role at lower incomes. Social contributions tended to be progressive at lower earnings levels and regressive for earnings close to the contribution ceiling.

Income taxes, social contributions, and means-tested benefits affect the income gain achieved by working more. The authors explored the effect by calculating the marginal effective tax rates following an increase in earned income of 3 percent (i.e., the earnings for an extra hour of full-time work per week). In countries with independent income tax systems, the average household marginal effective tax rate for males was higher than that for females. In countries with joint taxation, the rate was lower. Individual marginal effective tax rates tended to be lower than household rates, especially in countries with joint taxation. In countries with independent taxation, females faced lower household marginal effective tax rates, so the disincentive to work more than their partner was reduced. With the exception of joint taxation, Sutherland found that tax-benefit systems did not disadvantage women relative to their partners in terms of their incentive to earn more.

In a 1981 report, the European Commission recommended individual tax payments as a fundamental tool for achieving the equal treatment of men and women, and for encouraging women to participate in the job market. DE VILLOTA presented the results of her paper, which empirically corroborated some of the recommendations of the Commission, especially the advantages and equalizing effects of individual tax payments. Joint taxation, however, has a detrimental effect on second-income earners within the family and compromises the principles of efficiency and equity because it leads to indirect discrimination against married women (second-income earners).

De Villota noted that the tax structure of EU member states has been standardized, but personal income tax structures have not. She also noted the complexity and diversity of personal income structures in the EU, where no two tax payment systems are alike. The principle of tax equity is that any income earned in the family unit must be taxed with the same tax quota: any deviation from this principle is tax discrimination. De Villota identified three ways to classify tax systems within the EU: individual, joint tax, and optional tax payments. She used an index to measure the degree of discrimination between primary and secondary earners within families and to compare the taxation structures of various EU countries in 2000.

De Villota found that several factors could penalize the secondary earner, such as in cases where the marginal tax rate of the primary earner affects the secondary earner or the number of children alters taxes payable. She also found that Sweden is the best example of individual taxation (where personal taxation is completely individualized), France is an example of a joint tax payment system (where the coefficient depends on family characteristics), and Germany is an example of an optional tax payment system (where the coefficient is divided between spouses [splitting]). She observed that countries with a lower discrimination rate against secondary earners are countries that have adopted individual taxation, while countries with a higher rate have family taxation.

De Villota also observed that countries with high discrimination levels of personal income tax (e.g., Ireland and Spain) have low employment rates for married women, while countries with low discrimination levels (e.g., Sweden, Finland, and Denmark) have high rates. She further observed that factors such as the availability of social services and community care affect the labor market participation rates of married women. Tax systems that offer deductions for children show an increase

in discrimination against secondary wage earners. The index does not vary when a universal set of economic social benefits is substituted for child benefits.

Session 2. Gender Dimensions of Tax Reform in Europe

Chair: SUE HIMMELWEIT, Open University, United Kingdom.

Speakers: TIM CALLAN, Economic and Social Research Institute, and FRAN BENNETT, University of Oxford, Great Britain.

Discussant: Senior Scholar AJIT ZACHARIAS.

CALLAN outlined the tax regime changes and trends in labor market participation in Ireland. He found that the move from an income “splitting” tax system to a more independent income tax treatment of couples, along with the tax-cut option of widening the tax bands, had a significant impact on the labor market participation of married women. The sharp upward trend in the labor market participation of married women over the past 30 years, however, was mainly due to social changes, such as higher education and antidiscrimination legislation, and economic factors, such as rising real wages.

The Irish experience includes three different tax treatments of married couples: two distinct forms of joint assessment (income aggregation [1971–79] and income splitting [1980–99]) and a recent move toward greater independence in the tax treatment of couples. Callan reviewed how the changes in the tax regime relate to changes in the labor market participation of women and examined the potential size of labor supply responses to a full-scale individualization of tax bands. There was a strong upward trend in the participation of women in the labor force throughout the period, but no evidence of acceleration after the introduction of individual policy. Slow growth and high unemployment in the 1980s dampened participation rates, while entry into the European Economic Union led to legislation outlawing gender discrimination in the workforce.

Callan analyzed the impact of changes in tax and benefit policy on labor supply responsiveness. Separating the impact of budget constraints (influenced by tax and welfare policies) and individual preference was achieved using a discrete-choice structural model of labor supply, which captures important features of household labor supply behavior from a policy point of view. The model was estimated using data from the 1994 Living in Ireland Survey. Callan noted that, for policy analysis, the effect on participation is at least as important as the effect on hours worked, particularly for married women. Callan’s finding—that the labor supply of married women is significantly more respon-

sive to an increase in wage rate than that of men (i.e., a general increase in wages of 1 percent would see desired hours rise by 0.18 percent for men and by 0.48 percent for women)—is in line with previous findings for Ireland and other countries.

The model accounts for the complete structure of the tax system and cash benefits, so it is particularly useful in analyzing the impact of tax rate changes, tax-free allowances, and wider rate bands on the labor supply, as well as the impact of increased independence in the taxation of couples. Callan simulated the labor supply response to four types of income tax cuts: a cut in the standard tax rate, a cut in the top tax rate, a rise in personal allowance, and a widening of the standard rate band. He found that the overall change in participation and the aggregate labor supply response were similar across all options, but with differences according to sex. A cut in the top tax rate or a widening of the standard rate band prompted a greater labor supply response for females than males, while a cut in the standard tax rate or an increase in personal allowances led to similar responses for both sexes.

Callan also studied the impact of alternative ways of implementing increased independence in the tax treatment of husbands and wives and in the total labor supply response. A package involving full individualization of tax bands and a revenue-neutral reduction in tax rates would raise married women’s labor participation by 2 to 3 percentage points, which is modest compared to the strong upward trend in women’s participation over the past 30 years (i.e., 40 percentage points).

BENNETT provided a gender impact assessment of reforms in income tax and tax credits in the United Kingdom. She examined three “moments” in the recent history of taxation and gender issues: (1) the introduction of independent taxation in the income tax system in 1990; (2) the introduction of the first tax credit in 1999; and (3) the introduction and reform of new tax credits from 2003 to 2006. The key goals in terms of gender equality have been independent taxation for women and routing income for children via the main caregiver. Gender-aware policies on taxation are only part of a broader strategy to achieve gender equality, said Bennett.

A key campaign of the women’s movement in the late 1970s and early 1980s was for legal and financial independence, including the independent treatment of women within the income tax system. Bennett outlined the circumstances surrounding the Pay As You Earn (PAYE) tax deduction system, which was based on the aggregation of couple incomes, and the

Conservative government's Green Paper in 1986, which included a discussion of the treatment of women and families in the income tax system (the crucial issue appeared to be the balance between single- and dual-earner couples). The government's ideological preferences at the time were tax allowances and tax relief, rather than cash transfers via the social protection system. Women's organizations and the poverty lobby called for social priorities in taxation, including the abolition of the married man's allowance, and more resource spending on benefits for children and caregivers. Independent taxation of husband and wife was introduced in 1990 (there were no transferable personal tax allowances), but the married man's allowance remained for a while before being phased out entirely by the Labour government.

A child care tax credit and a national minimum wage were introduced in 1999. Research showed that money would more likely be spent on children if it was routed via the purse (i.e., paid as a benefit) rather than via the wallet (i.e., paid in the pay packet). A family's tax credit was paid as a benefit and directed to the main caregiver upon request.

Refundable new tax credits were implemented by the Labour government in 2003. The child tax credit and the child care element of the working tax credit are paid to the main caregiver. These tax credits have significantly reduced child poverty and helped to increase employment, particularly for single parents. However, these credits disadvantage women because they are jointly assessed (second earners in a family may be deterred from taking employment) and pose a threat to independent taxation (the vast majority of couples with children are affected by joint assessment, which is a means-tested provision).

Policymakers continue to disregard the gender gap and to treat households statically rather than in a dynamic, lifetime perspective, which would necessitate focusing on gender issues. Current challenges include mitigating any extension of joint tax assessments via new tax credits that threaten independent taxation and ensuring that taxation and transfer payments support a more equal division of labor by gender.

In the past, there has been a reluctance in the United Kingdom to interfere in the "private" sphere of the family, as interference was considered akin to social engineering. Although some reluctance to question gender roles within the family remains, there is ongoing debate about the label of "main caregiver," originating from the separated fathers' lobby and from intact couples who believe that the label denies a caring role for

the other partner. True autonomy and gender equity will only be achieved by a fundamental shift in men's behavior together with wider sharing of caring tasks by society as a whole, observed Bennett.

The forthcoming introduction of a "gender duty" on public bodies in the United Kingdom in April 2007 will combat discrimination and proactively promote gender equality. This legislation presents an opportunity to pursue more comprehensive gender impact assessment tools on taxation and transfer policies, and to focus on roles and power relations in addition to resources.

Session 3. Gender-blind and Gender-aware Tax Policy

Chair: TIM CALLAN, Economic and Social Research Institute, Ireland. Speakers: LISA PHILIPPS, York University, Canada; SUE HIMMELWEIT, Open University, United Kingdom; ELISSA BRAUNSTEIN, Colorado State University; and Senior Scholar CAREN A. GROWN. Discussant: HEIDI HARTMANN, Institute for Women's Policy Research.

PHILIPPS outlined a gender-responsive approach to the design of tax systems and revenue budgeting in Canada. There is an acute need to assess the impact of tax reforms on women in varying social and economic locations, she said. There is also a need to evaluate both the expenditure and revenue sides of the budget and the interaction between them from a gender equality perspective.

Philipps noted that the tax dimension of budgeting is especially important in Canada, which relies on federal and provincial personal income taxes (PIT) more than most industrialized countries (taxes represented 31 percent of total national revenues in 2005). The federal government has expansive taxation powers, but program spending is largely within provincial jurisdictions, so the government relies heavily on the tax system as an economic and social policy lever. She also noted that there is a gender-blind approach to revenue budgeting because of concepts such as "equity" (income only) and "efficiency" (wealth maximization that ignores nonmarket activities). The ideal of neutrality in the tax system can mask gender biases, and recent tax reforms have not examined whether proposed tax incentives are equally desirable for men and women. Philipps further noted that Canadian income tax law treats the individual as the basic unit of taxation, but the distributive consequences of amendments are often estimated using household rather than individual incomes. This approach ignores intrahousehold and gender inequalities.

Annual gender-disaggregated PIT data released by the Canada Revenue Agency reveals critical differences in the income and tax profiles of men and women. Men benefit from preferred taxation rates and other special tax concessions, while women earn relatively lower average incomes from different sources (e.g., public health care, child care, housing, and other social services) and rely more on government transfer payments (e.g., employment insurance and public pensions). Since funding cutbacks of services impact women significantly, policymakers should assess whether women's economic opportunities and security are enhanced more by reducing taxes or by improving services. Likewise, the overall tax mix will affect the share of taxes paid by women because women have lower average incomes and because there are gender differences in the consumption of goods and services subject to tax. Revenue-raising instruments with a regressive incidence (e.g., consumption taxes, property taxes, and user fees) are more burdensome for women with lower incomes.

The evidence suggests that targeted tax cuts for increasing economic competitiveness, growth, and productivity have been less effective in increasing economic resources or opportunities for women than men. Philipps expected that tax cuts would likely continue as a major element of federal economic policy, but these cuts are not targeted toward lower-income earners, as claimed by the major political parties. She noted that lower-income earners could be targeted more effectively by increasing the refundable Goods and Services Tax (GST) credit rather than reducing the GST. There is a need for feminist tax experts to work in concert with grassroots women's organizations in formulating political agendas, she said.

The rise of the tax system as a central instrument of social policy in Canada places an additional onus on the Department of Finance to take a leadership role and to undertake a thorough analysis of the gender impacts of existing and proposed tax expenditures. A gender analysis of "tax-delivered social policies" is likely to reveal three systemic disadvantages for women: (1) tax-based measures generally do not benefit low-income women, so credits should be refundable to the intended beneficiaries or converted into direct transfers or services; (2) tax deductions and exemptions rise with a taxpayer's marginal rate, favor types of income, expenses, and activities by men, and are not of equal value to women taxpayers; and (3) federal refundable credits are flawed instruments for improving women's economic security.

A key aim of gender budgeting initiatives is to increase women's participation in fiscal policy processes both inside and outside government. Fundamental issues include the appropriate unit of taxation, child care expenses, and the tax treatment of unpaid caregivers. There is scant evidence, however, that these initiatives have been recognized inside government. Outside of official budget institutions in Canada, various initiatives suggest that modest political pressure is building for more gender-responsive budgeting and tax policy. Philipps recommended that gender equality advocates insist that transparency should include the publication of gender-disaggregated tax data and the distributive and behavioral impacts of tax reform on men and women.

Based on a coauthored paper with Diane Perrons, Gender Institute, London School of Economics, HIMMELWEIT outlined the gender bias of U.K. public spending in response to the Treasury's "Golden Rule." Using child care as an example, she found a distortion of public spending away from current account spending, which significantly affects women, and toward capital account spending, which mainly affects men. The result has been an overinvestment in physical capital and an underinvestment in human capital. The significance of the bias and the pressures it produces are likely to increase, she said.

The Golden Rule is that the government will borrow only to invest and will balance its current account spending and revenues over the economic cycle. Based on National Account conventions, however, there is a heavy gender bias because human capital investment in fields such as child care, health, and education is allocated to current spending, and borrowing to finance current account spending is not permitted. The distortion of public spending toward physical infrastructure projects has direct gender effects by worsening women's employment prospects in a gender-segregated labor market. Increasing the female employment rate and expanding the provision of child care would result in immediate economic benefits, said Himmelweit.

The U.K. government has expanded the provision of child care through the National Childcare Strategy in order to reduce the high child poverty rate and improve the employment rate. Parents in the United Kingdom, however, are required to pay a much higher proportion of child care costs than parents in comparable European Union (EU) countries (i.e., 75 versus 30 percent), and the United Kingdom lags far behind other EU countries in public spending on child care.

The philosophy of child care in the United Kingdom is similar to that of the United States, where child care is characterized by a high proportion of market provision. Himmelweit noted that within the paid economy, the costs of child care must rise in line with wage levels and spending on child care must rise faster than the GDP growth rate in order to meet policy goals—higher employment levels to reduce child poverty, for example—and to maintain standards of care. Private for-profit providers cannot pass on rising wage costs to customers (mainly women) who are employed in poorly paid, labor-intensive occupations (e.g., caring, catering, and cleaning). The providers must rely on subsidies in line with rising care costs. Without a specific political commitment, however, the likely outcome is a tiered-care market with fewer options and declining standards of care for poor parents (the cost of child care has risen at four times the rate of inflation over the past five years). Moreover, short-term funding leads to churning, as existing providers cannot survive when funding ceases and their replacements are also supported by short-term funding.

In the past, the U.K. government has paid little attention to the terms and conditions of child care workers, observed Himmelweit. It appears that child care's labor intensity and its gender ascription have resulted in low pay for workers because of discriminatory attitudes toward women's skills. In order to reduce costs, the recourse for child care providers is to reduce the quality of care (e.g., employing people who have limited qualifications, but a "way with kids").

Himmelweit's key point is that productivity gains elsewhere in the economy cause rising child care costs. In principle, the resources exist to meet the rising costs of child care, but this goal will not occur when child care spending is paid for out of current expenditures, fiscal rules disallow borrowing to fund child care spending, and governments are hesitant to raise taxes. Himmelweit recommended that public funding should consider child care as part of the paid economy and subsidize it so that all parents can afford to be employed (the "universal caregiving model"). She also recommended challenging current social norms by reducing work times and redistributing public funds. These policies would encourage gender equality because paid and unpaid work would be shared more equally between men and women.

Based on a coauthored paper with Senior Scholar Diane Elson, University of Essex, Great Britain, BRAUNSTEIN and GROWN presented an analysis of the effect of U.S. state taxes on

the level and growth of female and male employment. They noted that there is both a potential negative and a potential positive impact of taxation on employment, since taxation finances public expenditures.

The authors tested three hypotheses: (1) that higher effective tax rates lead to lower levels and lower growth rates of female and male employment; (2) that higher contributions of corporate income taxes to state revenues lead to lower levels and lower growth rates of female and male employment; and (3) that higher relative taxes between states in a region result in lower levels and lower growth rates of female and male employment in states with higher taxes.

The authors used a reduced-form model of employment demand to assess the role of state taxation in female and male employment for the 48 contiguous U.S. states and Washington, D.C. Their tax variables were based on the March Current Population Survey series from the U.S. Census Bureau for workers between the ages of 16 and 65 during the 1978–2004 period. Effective rather than marginal tax rates were used in the analysis because a progressive income tax structure does not have a single marginal tax rate and average tax rates affect employment decisions to move if employment responds to taxes. To measure the competition effects between states in a region, the U.S. states were grouped into eight major regions based on classifications by the Bureau of Economic Analysis.

The authors' analysis is innovative because it devises a variable that explicitly captures tax competition between states in a geographic region. By measuring different types of taxes on employment as a share of total revenue, the study is able to capture the trends in total revenue and the relative contribution to revenues of the different types of taxes that are important for employment generation.

The econometric analysis confirmed one of the three hypotheses—that relatively higher taxes between states in a region have a negative impact on employment. The analysis showed that the positive effects of tax levels and composition on employment prevail over the negative effects of tax competition, and that taxes have gendered effects on employment.

The authors plan to evaluate the employment effects of different types of government spending in order to determine the underlying reasons why tax revenues that finance public expenditures strongly outweigh the negative effect of tax competition on female employment levels, but not on male employment levels. They also plan to apply their tax variables

to different types of public expenditures (e.g., health and child care) that enhance female employment and to address the independent effect of the level and composition of public expenditure on female and male employment.

Session 4. Personal Income Tax in Bargaining Models

Chair: President DIMITRI B. PAPADIMITRIOU. Speaker: ELISABETH GUGL, University of Victoria, Canada. Discussant: TSU-YU TSAO, Bard College.

GUGL presented an analysis of tax policy in terms of family bargaining. Personal income taxes influence family bargaining by affecting a family's utility possibility set and its threat points, such as divorce and noncooperative marriage (where spouses retreat to a division of labor sanctioned by gender roles). The key tax-related determinants of the divorce and noncooperative threat points are the tax treatments of single persons and individuals within marriage, respectively. Tax reform, therefore, can have very different impacts on family bargaining outcomes depending on the threat-point specification.

Gugl's paper makes four contributions to the literature: (1) it is the first to make the connection between tax rates for singles and family bargaining outcomes; (2) it is the first to point out the role that tax rates play within marriage; (3) it focuses on the female labor supply and demonstrates in a formal context that changes in public policy impact behavior within marriage via the link between threat points and bargaining outcomes; and (4) it shows that model choice is pivotal in terms of the predicted impacts of tax reform.

Gugl used a two-period household model in which a spouse's labor force attachment in the first period influences the spouse's opportunity cost of time in the second period. Spouses with identical utility functions are assumed to divide their time between employment and household production under two different bargaining regimes: bargaining at the beginning of marriage (over lifetime utility) and renegotiation of the marriage contract. The model distinguishes between the tax schedules of single and married individuals because of different marginal tax rates.

Gugl determined that, if a couple is taxed jointly, the husband's utility is higher and he is better off in noncooperative marriage than under individual taxation; the wife, however, is worse off. Her utility is higher in divorce because she would face a lower marginal tax rate than a secondary earner in noncooperative marriage. When there is individual taxation of

couples, her utility remains the same in both threat-point specifications.

The (simple) model showed that tax structures matter for couples who engage in period-by-period bargaining when noncooperative marriage is the threat point and that the government can influence the kind of threat point used by couples. Gugl showed that bargaining over lifetime utility is efficient, while period-by-period bargaining is not, because the wife has an incentive to oversupply labor in the first period, which impacts the second-period threat point. A wife's incentive to increase her first-period labor supply is higher if her marginal tax rate at the second-period threat point is lower. This means that, if the government taxes couples jointly and couples rely on noncooperative marriage as the threat point rather than divorce, household decisions are more efficient.

Recent empirical evidence suggests that married women's labor supply elasticities have decreased in the United States. Gugl's explanation for this trend is that, if there is joint taxation in marriage, switching the threat point from noncooperative marriage to divorce makes the wife's labor supply less elastic. The lower marginal tax rate in the divorce threat point creates more incentive for the wife to increase her labor supply within marriage.

Gugl analyzed changes in marginal tax rates under different bargaining regimes. She found that married women have an incentive to favor a progressive tax system for singles because the system would increase their utility under the divorce threat point and in marriage. Her results contrasted with other studies, which found that spouses prefer income splitting to individual taxation. Her paper explained why married women's labor supply dramatically increased in Ireland after the government allowed divorce in 1996 (because own net wage increases utility in the divorce threat point more than it does in the noncooperative marriage threat point).

Gugl called for more recognition of the bargaining regime of households and the determinants of threat points when evaluating tax reform, emphasizing that tax reform impacts household efficiency and intrafamily distribution.

Session 5. Taxation and Marriage in the United States

Chair: Senior Scholar AJIT ZACHARIAS. Speakers: BRIDGET CRAWFORD, Pace University, and DENNIS VENTRY, University of California, Los Angeles. Discussants: CLAIRE YOUNG, University of British Columbia, Canada, and JULIE NELSON,

Global Development and Environment Institute, Tufts University.

CRAWFORD presented a new approach to wealth transfer taxation. She proposed the elimination of the estate and gift tax marital deduction as well as full taxation of all gratuitous transfers between spouses. Current tax law embraces a “one flesh, one taxpayer” approach to marital wealth transfers, which reinforces traditional gender roles and denies estate and gift tax benefits to nonmarital, economically unified couples, she said. Congress should adopt a “one flesh, two taxpayer” rule and significantly increase the estate and gift tax unified credit (e.g., to \$10 million). This would simplify the administration of the tax system, increase overall tax revenue, and enhance the vitality of common law and community property systems.

Married couples benefit from the marital deduction and also have the ability to “split” gifts. Crawford noted that treating husband and wife as a single economic unit is inconsistent with the privileges and responsibilities of citizenship, and that paying taxes is fundamental to claims of citizenship and equality. She also noted that the “one flesh, one taxpayer” system of wealth transfer taxation is undesirable because it is based on gender stereotypes and it denies estate and gift tax benefits to individuals in nonmarital relationships. The system is pernicious, she said, because it emphasizes the marital unit over an individual’s legal personhood and it diminishes the importance of each spouse’s individual identity.

In her review of the history of the estate and gift tax treatment of marital transfers, Crawford further noted that qualified terminable interest property (QTIP) qualifies for the marital deduction and is deductible for wealth transfer tax purposes. Tax-advantaged inter vivos gifts, therefore, form a key part of estate planning. QTIP tax rules, however, hurt women and are a stumbling block in the advancement of women. The estate and gift tax rules constitute a quasi-coverture system in which one spouse’s “right” to control the disposition of property trumps the other spouse (usually the wife), leading to negative social, political, and economic implications for women. The QTIP provisions were enacted so that men could control the ultimate disposition of property and so that QTIP transfers would qualify for the marital deduction.

The tax rules have undermined the prospect of equal status between men and women as wealth holders, and the QTIP trust has created an illusory class of female wealth holders, observed Crawford. The “one flesh, two taxpayer” system would

not permit the disparity between tax results and property ownership that is currently allowed under QTIP rules.

Crawford acknowledged that her proposal would disrupt the geographic equality created by the marital deduction. In community property jurisdictions, most “transfers” between spouses would continue under state law, particularly in common law states (and would not be subject to wealth transfer taxation). A comprehensive change in state laws, however, could be administratively prohibitive and lead to uncertainty over property rights. Implementation of a “one flesh, two taxpayer” federal tax rule would force citizens and state lawmakers to confront state property laws and evaluate their fairness with respect to all taxpayers, suggested Crawford.

VENTRY addressed the objectives of tax policymakers in the United States since the beginning of the 20th century. He focused on the history of family taxation and explained how family tax policies have distorted decisions related to work, intrafamily economics, and family formation. According to Ventry, the distortions were created and preserved by policymakers who viewed taxes as a tool for achieving social and economic goals based on the structure of the traditional family.

Ventry pointed out that household and labor demographics have changed significantly in the latter half of the 20th century. The single-earner, husband-wife married couple is no longer the norm (representing 19 percent of households in 2001), and married couples now comprise only half of all households. He said that the joint-filing option for married couples represents an increasingly inefficient policy instrument that misallocates benefits, causes labor supply distortions, distorts decisions to marry and divorce, and conflicts with a society that increasingly emphasizes individual rights within families. Nevertheless, mid-20th-century assumptions regarding gender roles, family forms, and household income continue to provide the basis of the U.S. tax system. The system conflicts so thoroughly with modern conceptions of work and family that family tax policies will soon take center stage on the policy agenda, he said.

Ventry outlined a number of examples that showed how the various tax laws, including marriage tax penalties and bonuses, create disparities between single and married individuals, husband and wife, and traditional and nontraditional families. More than 18 million couples suffered marriage penalties totaling \$19.1 billion in 2004, while nearly 30 million couples enjoyed marriage bonuses totaling \$49 billion. Disparities are caused by the joint-filing option for married couples and by

separate tax rate schedules for single taxpayers, for whom tax brackets are more than half as wide as those for married taxpayers (i.e., the combined tax liability of two single taxpayers can be higher or lower than the liability of a married couple).

Higher (marginal) taxes for secondary earners create tax inequities between single- and dual-earner families and distort labor market decisions for two working single persons who choose to marry. The distortions are particularly severe for working wives, whose labor supply is more elastic than men's. Higher taxes on two-earner families reflect a systemic bias against working wives and reinforce a social and economic system that rewards traditional families.

Feminists and other groups have called for abandoning joint filing in favor of taxing all persons as individuals. The postwar policymaking consensus, however, has emphasized tax rate reductions and a broader tax base. While the severe downturn in the U.S. economy in the 1970s reinforced the need for policies that reduced distortions, the overriding concern of policymakers was to protect the traditional family.

In the 1980s, tax policies marketed as “pro-women” were really “pro-family” because they helped women who were mothers and wives. In the past 20 years, there have been nominal reductions in marriage tax penalties for nontraditional families and huge increases in marriage tax bonuses for traditional families. Current policies continue to protect traditional families and punish nontraditional families.

Ventry recommended the adoption of individual filing for a society with multiple forms of family, including single parents, cohabiting singles, single-earner and dual-earner households, and opposite- and same-sex couples. An example of recent progress is the Domestic Partner Rights and Responsibilities Act (2003) in California, which granted domestic partners the same rights, protections, and benefits as married couples under the state's community property law. The Act was based on *Poe v. Seaborn* (1930), a Supreme Court decision which held that state property law dictates attribution of community income for federal tax purposes, and may allow domestic partners to enjoy income-splitting benefits otherwise reserved for married taxpayers. The question, however, is whether the analysis in *Seaborn* applies to all relationships with equivalent legal rights to income from property and services. Hopefully, future debate will produce a tax system that is more neutral and contains less distortion with respect to decisions related to work, family, marriage, and cohabitation, he said.

Session 6. Gender, Taxation, and Development

Chair: Senior Scholar CAREN A. GROWN. Speakers: JANET STOTSKY, International Monetary Fund, and EVELYNE HUBER, University of North Carolina, Chapel Hill. Discussants: CORINA RODRIGUEZ-ENRIQUEZ, Centro Interdisciplinario para el Estudio de Políticas Públicas, and THITU MWANIKI, Institute of Economic Affairs, Kenya.

According to STOTSKY, gender bias pervades public policies both explicitly and implicitly. Tax systems (direct, indirect, and international trade) reflect many economic, political, and social influences, so it is not surprising that gender bias is reflected in their structure, she said. Although many countries have attempted to rid their tax codes of gender bias, explicit and implicit gender biases remain. Explicit gender bias is relatively easy to identify because it is usually written into the tax code or regulations for personal income taxes. Implicit gender bias is not easy to identify because it is necessary to observe how tax systems ultimately affect men and women.

Stotsky subdivided personal income taxes into schedular and global taxes. The liability under a schedular income tax, which is common in developing countries, is determined with respect to each source of income. Explicit gender discrimination in a purely schedular income tax system is uncommon because the tax liability is established with respect to a particular source of income rather than a particular taxpayer. The income tax liability under a global income tax is aggregated and usually applies one schedule of tax rates. It is more common in industrialized countries and typically contains elements of gender bias. The movement away from joint filing to individual filing is an effort by countries to reduce gender discrimination.

Many industrialized countries and the majority of developing countries require individual filing for at least some sources of income. Under a system of individual filing, explicit gender bias may result from the allocation of nonlabor or business income and tax preferences, as well as tax rates. Under a system of joint filing, explicit discrimination is less frequent, but there are ample possibilities for implicit discrimination. For example, a progressive marginal rate schedule may discourage secondary workers in a household from working because their taxes start at the highest marginal tax rate of the primary worker—the so-called “marriage tax.” Stotsky noted that studies suggest that the elasticity of labor supply is greater for married women than married men, and that, all else being equal, married women should be taxed at a lower rate than other workers.

Stotsky outlined examples of tax policy reform that are explicitly gender biased. There were several areas in European tax systems that had an adverse effect upon married women's tax burdens, so European countries should adopt an independent taxation system, she said. Although the U.S. income tax system has never contained any explicit gender discrimination, it has changed its treatment of couples versus the individual and it has tried to reduce the marriage penalty. In developing countries, the most common form of gender bias is attributing the income of a married woman to her husband and levying the tax for nonschedular income taxes in her husband's name. Many countries have adopted gender differences in social security systems based on differences in retirement age rather than differences in average life expectancy or in relation to pension and annuity income. Australia was the first country to develop the concept of a "women's budget," which explicitly considered female needs in the budgeting process.

Although there does not appear to be any explicit gender bias in the application of international trade taxes (e.g., value added taxes), these taxes are not gender neutral and may possess certain implicit biases as a result of differential consumption between men and women. The notion of the household as a single utility-maximizing agent is clearly unrealistic, stated Stotsky. Recent research has posited several different models of household behavior based on the nature of household decision making and on how tax regime changes induce a shift in consumption by household members. Understanding the nature of household decision making is also vital to understanding the ultimate (implicit) effects of sales taxes and user fees, international trade taxes, and corporate income taxes.

Stotsky speculated that it is possible to eliminate explicit discrimination in tax systems without adopting fully independent taxation of spouses. Although it may be possible to eliminate the worst forms of implicit bias in tax systems, it is probably impossible to eliminate all types of implicit bias because of behavioral differences between men and women in every society.

HUBER outlined changes in the taxation systems of Argentina, Chile, Costa Rica, and Jamaica since 1980. She found tendencies toward declining overall tax receipts as a percentage of GDP and a greater reliance on indirect taxes levied on domestic goods and services. These tendencies negatively affect poverty and women because lower tax revenues affect anti-poverty programs and health and education services, and indirect taxes are generally regressive across income classes and for

women. Huber cited two major policy lessons from her analysis: (1) it is possible to construct overall progressive tax systems that are effective in raising tax revenue in countries with comparatively low levels of development; and (2) tax law enforcement may be as important as changing the tax system.

Effective tax collection is necessary to ameliorate gender-based poverty and inequality. Latin American countries, however, have undertaxed their populations. The main reasons for undertaxation are poor policy choices rather than low levels of economic development and technological capacity, observed Huber. She also observed that tax reform followed two different paths: an ad hoc reaction to economic change (e.g., Argentina) and a major reform of the entire taxation system (e.g., Jamaica). The dominant pattern of tax reform included a reduction of marginal tax rates on corporate and individual incomes, a broader tax base, lower tariff rates, and other forms of deregulation, but this pattern did not increase income tax revenues. The shortfall in tax collection resulted in a shift toward value added taxes (VAT) and user fees.

Using financial statistics from the International Monetary Fund (IMF) and the countries surveyed, Huber found a decrease in the contribution of foreign trade taxes, an increase in indirect taxes, and a constant share of direct taxes (except for Jamaica). She noted that direct taxes tend to be universally progressive, indirect taxes are generally regressive, and social security taxes can be ambiguous (e.g., regressive at the upper end of the income distribution). The distributive impact of the tax systems in Argentina, Chile, and Costa Rica became more regressive during the study period because of the shift toward the VAT, which affects lower-income deciles more than upper-income deciles, as well as the structure of social security contributions, and sales and excise taxes. The total effect of tax reforms in Jamaica increased the share of direct taxes as a percentage of total revenue and decreased goods and services taxes (in contrast to other countries), resulting in a slightly more progressive tax system.

In contrast to Chile and Jamaica, where total tax revenue as a percentage of GDP fell markedly between 1980 and 2000, Costa Rica increased revenues through social security contributions and sales and excise taxes. Because sales tax exemptions focused on goods consumed by low-income groups, Costa Rica has one of the lowest Gini coefficients for income distribution among Latin American and Caribbean countries. The Jamaican and Costa Rican tax systems were more effective in collecting

direct and social security taxes than the Argentinian and Chilean tax systems. Despite tax reform, all countries suffered from widespread tax evasion and avoidance, as a result of a lack of government enforcement. Improved tax collection is feasible, said Huber.

Huber outlined the politics behind the tax changes as well as the role of agencies such as the IMF, World Bank, and Inter-American Development Bank. Agency and government objectives focused on transforming economies in a neoliberal direction and, given the general absence of public debate, gender-specific impacts of tax reform were overlooked. Insufficient data led Huber to speculate on the gender implications of tax reform in Latin America and the Caribbean. She noted that, while all countries in her survey were gender-egalitarian in terms of individual taxation, female labor force participation rates and earnings were lower than those of males. The relatively lower share of tax revenues from direct taxes, therefore, favors men, who constitute a stronger tax base. Caps on social security taxes are more regressive for women, while benefits accrue to men more than to women. A reduction in marginal tax rates and payroll taxes benefit men more than women, while indirect taxes disadvantage women because they are lower income earners than men.

Women's position in the household and their participation in determining household budgets affect their susceptibility to changes in tax systems that rely on indirect taxes. Single women with children are in the economically weakest position, so they will shoulder the greatest burden from increases in indirect taxes, concluded Huber.

Session 7. Gender and Taxation in Africa

Chair: Research Scholar RANIA ANTONOPOULOS. Speakers: Research Associate IMRAAN VALODIA, University of KwaZulu-Natal, South Africa; JANE KIRINGAI, Kenya Institute for Public Policy Research and Analysis; and THITU MWANIKI, Institute of Economic Affairs, Kenya. Discussant: LUCIA FRAGOSO, Gender Equity: Citizenship, Labor, and Family, Mexico.

Taxation policy has a vital impact on the redistribution of income and wealth in society and is an important instrument for reducing inequalities between men and women. Based on a coauthored paper with Terence Smith, School of Development Studies, University of KwaZulu-Natal, VALODIA examined the impact of changes in taxation policy since the mid-1980s on women in South Africa. One of the major victories of the

democratic transition was South Africa's constitutional commitment to gender equity. The appointment of the Katz Commission in 1994 was an attempt by the state to adopt a more developmental approach to economic policy and to link taxation with issues of income distribution and poverty relief. Valodia analyzed the explicit and implicit impact of direct and indirect taxes on gender and found that explicit gender biases had been removed, but implicit biases remained because tax policy ignored women's socioeconomic profile. Women are disadvantaged by policy that favors higher-paid employment and discriminates against the poor. It is ironic that changes to the taxation system aimed at eradicating gender discrimination continue to discriminate against women, he said.

Valodia outlined a number of reasons why taxation policy should interest people concerned with gender equity issues; for example, taxation systems are influenced by social attitudes about gender and they affect labor supply decisions. He focused on personal income taxes and the VAT and explained that his analysis was constrained by a lack of official gender statistics concerning the tax burden. Valodia found that race and gender are important determinants of labor market status and that women are clustered at the bottom of the occupational hierarchy, work mainly in the informal economy, and have lower incomes. Moreover, women pay a "reproduction" tax in terms of bearing and raising children, and they care for other members of society. There are also gender and racial inequalities when accessing medical aid schemes.

Tax policy changes since 1994 have eliminated formal discrimination based on gender, and have introduced a unified income tax rate structure for individuals and tax relief for low- and middle-income taxpayers. Significant changes included a dramatic shift in the composition of direct taxes (from corporate to personal taxes) and a shift from direct to indirect taxation. Men have benefited more than women from the decrease in corporate taxes, and the decrease has not encouraged private sector growth or higher employment. In addition, since indirect taxes discriminate against the poor and government programs have not delivered a more equitable distribution of income, poverty has increased, particularly for women.

Valodia calculated that the new income tax system in South Africa continues to discriminate against households with only one income earner, and that the problem has worsened in spite of some relief to lower-income earners (e.g., a reduction in the number of tax brackets and lower marginal

tax rates). Implicit gender biases related to tax-deductible expenditures remain because individual income tax collection comprises two systems—Standard Income Tax on Employees (SITE) and Pay As You Earn (PAYE)—and child care expenditure is not an allowable deduction. Informal and lower-income earners are also deprived of tax deductions and allowances, such as deferred taxation, pensions, and retirement funds, which are available to individuals who earn higher incomes and who pay taxes under the PAYE system. Valodia outlined a number of examples that show men have a greater capacity to avoid paying taxes than women.

Zero-rating basic goods and services in the VAT, which is regressive, significantly benefits the poor, observed Valodia, but many items are still subject to VAT. He recommended that the South African government zero-rate paraffin, which is very important to the poor for cooking, lighting, and heating. He also recommended a multiple-rate structure for VAT: a lower rate on goods typically consumed by the poor and a higher rate on goods typically consumed by the rich. The Katz Commission's argument that other instruments should be used to offset the impact of VAT on the poor is unrealistic for South Africa, Valodia said.

Based on a coauthored paper with Bernadette Wanjala and Naomi Mathenge, Kenya Institute for Public Policy Research and Analysis, MWANIKI and KIRINGAI presented their findings about the gendered impact of taxation in Kenya. The authors reviewed tax reform since the 1960s and noted that, while explicit gender biases have recently been removed, implicit gender biases remain. They concluded that income tax policy reforms cannot be isolated from labor market and informal sector developments, and that taxation policies need to be gender sensitive within the fiscal policy framework in order to meet development goals.

Unlike many sub-Saharan countries, Kenya has a high tax yield, with a tax-to-GDP ratio exceeding 20 percent. Revenue collection can adversely affect both social and economic aspects of development and magnify or mitigate inequalities. Although it is important to consider gender-sensitive fiscal policy in terms of revenue collection and expenditure allocation, there is no in-depth analysis of the impact of taxation on gender and no explicit policy on gender equality.

The authors reviewed the status of women in Kenya. Female-headed households represent 37 percent of households and their poverty levels are only slightly higher than male-

headed households. Women are concentrated in public administration, education, and domestic services, and more women are engaged in private sector agriculture and forestry than men. Women represent only 29 percent of total employment and they earn 33 percent less than men.

The National Development Plan 2002–08 recognized that gender equality and women's economic participation were crucial to achieving its goals. Institutions such as the Women's Bureau, the Department of Gender, and the National Commission on Gender and Development were created in 2003 to promote gender-mainstreaming mechanisms. Current government policy, however, does not explicitly account for gender mainstreaming as a critical objective for creating employment and wealth. In spite of some progress, gender mainstreaming in Kenya's national policies, budget, and planning process remains relatively weak.

In terms of national policy, gender-equity debate has focused on poor women living in rural areas who are engaged in agricultural activities. The government has ignored the care economy and the promotion of equity through tax policies. The model used for policy analysis does not provide for gender-related analyses nor does it capture the contribution of the reproductive and nonproductive sectors to the economy. It is critical that the model is revised, said the authors.

Ongoing rationalization of the existing tax system includes lower tax rates and fewer tax brackets. Since June 2005, married men and women have had the option of filing tax returns separately, so there is no implicit or explicit gender bias regarding personal income taxes. Although personal income taxes were used as an instrument to achieve equity and growth objectives, all registered taxpayers were entitled to the same amount of income tax relief irrespective of income level, thereby undermining the redistribution objectives.

Indirect taxes have become a major source of development finance since the early 1980s. VAT replaced the sales tax in 1990 and is seen by policymakers as the tax of the future. Consumption-based taxes, however, are highly regressive and place a greater burden on the poor. Despite the shift toward indirect taxation, income tax remains the largest contributor to total tax revenues (37 percent in 2003–04), followed by VAT (31 percent). Import duties continue to decline in importance as a result of globalization and regional integration.

The authors identified implicit taxation biases using tax burden analysis, which computes the tax burden of different

taxpayers based on gender and income level. Household consumption data were obtained from the 1997 Welfare Monitoring Survey, and households were grouped according to expenditure quantile, gender of household head, and region. The data showed that men pay twice as much income tax as women, which leads to an implicit gender bias and has implications for intrahousehold resource allocation.

Gender differences in tax burden reflect differences in spending patterns and income levels between male- and female-headed households. The authors found that female-headed households spend a greater proportion of income on basic commodities than male-headed households, the proportion of income spent on agricultural commodities declines with the level of per capita expenditure, and rural households spend more on education than urban households. The authors also found that the overall VAT tax burden by quantile is progressive as a result of exemptions and zero-rating of basic commodities. There were important differences within all expenditure quantiles, however, because female-headed households bear a greater VAT burden than male-headed households.

These findings pose a policy challenge for the Kenyan government, said the authors. Achieving gender tax equity within each expenditure group would result in a complex tax system and administrative difficulties. An alternative is to identify and compensate target groups for the higher tax burden.

A limitation of the study is that unpaid work by women is not recognized in national accounting. Further study should incorporate consumer behavior in the tax incidence analysis and expand information, such as sources of income, consumption, and economic behavior, employment trends and practices, and time use. There is a great need to improve existing databases for better policy formulation, implementation, and analysis, noted the authors.

Session 8. Gender and Tax Policy Advocacy

Chair: Senior Scholar DIANE ELSON, University of Essex, Great Britain. Speaker: MIMI ABRAMOVITZ, Hunter College School of Social Work, New York.

ABRAMOVITZ presented the highlights from her book, *Taxes Are a Woman's Issue: Reframing the Debate* (with S. Morgen and the National Council for Research on Women). The book calls for tax policies that address the unique needs of women and, at the same time, serve families, communities, and the United States as a whole. The authors, noting that tax cuts

enacted over the last five years have negatively impacted women, advocate a fairer tax system.

Although differences among women suggest that tax and spending policies do not affect them uniformly, women do share common experiences at home, in the workplace, and in the economy. Women tend to earn less than men; gain income disproportionately from wages, rather than from wealth; work part-time and spend fewer years in the paid labor force; and take on more caregiving responsibilities. In addition, women are more likely to be single parents, and live longer than men. The changing role of women in the paid economy is not well reflected in the current system, say the authors.

Abramovitz found that women generally benefit from a progressive tax system that taxes people according to their ability to pay. Women are disadvantaged by a tax system that does not raise enough money for public services that support or compensate them for their patterns of paid and unpaid labor. Over the past quarter century, especially since 2001, tax policy changes in the United States have greatly undermined the progressivity of the tax system and have underfunded public services. Examples of these changes include the decline in capital gain taxes and inheritance taxes, and the growth in regressive taxes (such as state sales taxes and payroll taxes). At the same time, corporations have not picked up the slack in lost revenues. These policy changes compound inequities already built into the economy and threaten the fundamental security of low-income women and their families.

According to Abramovitz, inequality is built into the ways the country raises and spends its tax revenues. She considers the inequality to be both systemic and structural. In sum, there is less public money, more pressure on low- and middle-income earners, and public services receive insufficient funding. In addition, there is a squeeze on social welfare, a widening gap between rich and poor, a decrease in security and global competitiveness, and increasing strains on democracy (i.e., our society has become disaffected, insecure, and not reflective of its proclaimed belief in equal opportunity).

Abramovitz and her coauthors have outlined a number of actions that would improve the tax system and make it better for women and the country as a whole: (1) make the overall tax system more progressive (e.g., roll back recent tax cuts on wealth and high incomes, preserve the estate tax for high wealth individuals, reform the Alternative Minimum Tax, and reform state and local tax systems so that they rely less on regressive taxes);

(2) ensure that the fiscal welfare system (tax expenditures) serves all taxpayers (e.g., extend tax credits, like the Earned Income Tax Credit and the Child Tax Credit) and is fairly implemented by the Internal Revenue Service; (3) bolster the social-welfare system so as to ensure that it provides a safety net (e.g., Social Security, Medicare, and Unemployment Insurance) for the poor and unemployed; (4) challenge budget proposals that cut funding for education, health care, and human services; (5) ensure that businesses pay their fair share of taxes and provide health and vital benefits for their employees; (6) collect tax data that is disaggregated by gender, race, and class (in order to identify who pays and benefits from the tax bill); (7) ensure greater transparency of the tax code; and (8) promote tax and economic literacy that illuminates the relationships among tax collections, government spending, and quality of life.

The bulk of tax relief goes to the top income deciles, and tax simplification is merely code for a (regressive) flat tax, says Abramovitz. The public should use the media to pressure for changes at the grassroots level, and the government agenda (which includes child poverty) should be expanded to include gender (women's) equality.

Feminist-Kaleckian Macroeconomic Policy for Developing Countries

STEPHANIE SEGUINO and CAREN A. GROWN

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Women's access to jobs—a major vehicle for improving gender equity—is increasingly difficult in the era of globalization, where the redistribution from labor to capital in profit-led economies has increased women's time burdens. Research Associate Stephanie Seguino, University of Vermont, and Senior Scholar Caren A. Grown link gender inequality to economic structure and find that greater equality for women requires a structural shift in the economy—from a profit-led, export-oriented (low-wage) economy to a government-supported, wage-led economy that stimulates growth and provides regional benefits from foreign direct investment (FDI). Improving women's well-being in export industries and at the same time promoting economic growth requires heightening the role for government in managing the economy, controlling physical and financial capital flows, and setting industrial and agricultural policy.

The authors' policy prescriptions emphasize price-inelastic goods and services, restrict flows of physical and financial capital, and support fiscal and monetary policies that are sensitive to the goals of gender equity (e.g., full employment, greater reliance on domestic demand, and a broader understanding of power and wage determination). These prescriptions are echoed in the post-Keynesian literature and the authors' neo-Kaleckian macro models, which incorporate gender patterns of labor supply and demand and give insight into the conditions required to make higher wages and economic growth compatible. Successful redistributive macroeconomic policies and development strategies must account for gender, they say.

A gender-equitable economy requires policies that provide equal access to jobs, earnings, bargaining power, and resources. As opposed to the mainstream goals of macroeconomic and trade policies that do not address gender inequality in well-being (e.g., price stability, the elimination of trade barriers, and sustainable debt), the paper seeks to delineate a set of macro policies that close gender gaps without lowering the average well-being of men.

The authors examine the gender effects of globalization and neoliberal policies that have led to trade and financial market liberalization. They find that gender wage inequality is universal as a result of "male breadwinner" bias, which slots women for insecure jobs and work at home. They note a number of developments that militate against closure of the gender-earnings gap: the "crowding" of women into labor-intensive export manufacturing (where physical capital mobility weakens women's relative bargaining power), the shift from formal to informal work (with declining incomes and job security), the feminization of agriculture, the relatively high unemployment rate among women, and the informalization of labor contracts (where subcontracting and outsourcing focus on women). Although women are the preferred workers in price-elastic export industries, they have difficulty accessing more secure jobs in nontradable industries.

The authors observe that higher wages, which were once a demand-side stimulus in more closed economies, now have a potentially negative effect on exports and investment. Women are more adversely affected than men because they are disproportionately concentrated in industries dominated by vertical FDI (i.e., production for export). Financial market liberalization can negatively affect gender relations (e.g., by constraining growth rates and increasing economic volatility), and traditional

government fiscal and monetary policies are constrained by financial markets that veto budget deficits and demand high interest rates. The net effect is a global slowdown in economic growth that disproportionately affects women. Economic and trade liberalization have restricted state intervention, which stimulates output and employment and provides a social safety net. Women who act as the economic “shock absorbers” face increasing demands on their time, as paid and unpaid labor rises in order for them to maintain family well-being.

Trade and investment agreements (institutionalized in the World Trade Organization [WTO]) require governments to liberalize trade, drop preferential treatment of domestic firms, and allow unrestricted FDI. In addition, central bank independence limits a government’s ability to use preferential lending as a means to support strategic manufacturing, service, and agricultural industries. These developments have increased the burden of unpaid labor and inhibited women’s participation in paid activities.

Job insecurity can be offset by appropriately designed social safety nets, including full-employment policies (i.e., the absence of involuntary unemployment or informal employment); a reduction in economic volatility; and wage-led economies with rising productivity, output, and growth that ratify higher relative female wages, say the authors. State-level policies could provide incentives to firms that shift the production mix in female-dominated labor-intensive industries to export products with a low price elasticity of demand (where quality matters). Since higher female wages can stimulate consumption demand, there is a need for an industrial/agricultural development strategy to promote an export-product mix that permits rising female wages without a large negative effect on exports. There should also be boundaries on firm behavior (e.g., limits on physical capital mobility). Bargaining strength for poor countries could be enhanced by regionally coordinated industrial policies (e.g., a Caribbean tourism policy) and changes in WTO policies and rules as well as in other trade agreements.

Program: Economic Policy for the 21st Century

Financial Markets and Monetary Policy

Can Basel II Enhance Financial Stability? A Pessimistic View

L. RANDALL WRAY

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Senior Scholar L. Randall Wray, University of Missouri–Kansas City and director of research, the Center for Full Employment and Price Stability, examines Basel II in the context of reducing banking risk and financial instability. He notes that the ultimate goal of Basel II is to align capital requirements to the banks’ internal risk-rating systems, while also allowing greater use of external credit-rating agencies. Wray doubts that Basel II will reduce banking risk, because its reforms cannot inhibit the creation of a fragile financial structure as long as the source of fragility resides mostly outside the banking system.

The original Basel Accord (1992) aimed to set a uniform minimum capital standard equal to 8 percent of assets and to pursue two main objectives: enhance stability and level the competitive playing field for the international banking system. Problems with the accord included the development of risk-weighted capital requirements that encouraged banks to hold riskier portfolios, and the “regulatory capital” required to meet the accord that deviated from the “economic capital” needed to protect banks against losses.

The Basel II reforms rest on three pillars: minimum capital requirements, supervisory review, and market discipline. Pillar one allows greater flexibility in establishing required capital ratios; pillar two addresses host-country supervision; and pillar three seeks to increase the force of the market to discipline banks. The reforms create finer classifications of risk, give banks greater freedom to generate their own risk estimates, and bring regulatory capital more closely in line with economic capital.

Wray doubts that the reforms will reduce banking risk for several reasons: the complexity of setting global standards, the assessment of risk and internal ratings based on recent historical

experience and judgment calls, and the questionable focus on capital as the proper contingency against losses. Factors such as the global macroeconomic environment and the return on assets or equity rank higher than a bank's capital ratio in terms of the likelihood of bank failure, says Wray. Furthermore, capital cannot meet unexpected losses from a major systemic financial crisis because it is not incorporated within internal models, and external credit-rating systems are virtually nonexistent outside a handful of highly developed nations. While Basel II probably provides a more effective constraint on risky credit growth than an 8-percent capital rule, it is unlikely to reduce the cyclical nature of credit supply.

There are forces working at both the national and international levels that lead to endogenously created fragility; e.g., the natural tendency for fragility to increase over an expansion, as innovation is rewarded and success breeds more risk taking. And market forces induce participants to underestimate assessed risk near the peak of speculative booms. Based on arguments by Hyman P. Minsky, Wray supports "big government" and the "big bank" (central bank) as agents that help to stabilize financial institutions. Basel II, however, focuses exclusively on risk assessment and presumes that risk weighting and capital exposure play a dominant role in the soundness of financial systems. However, events such as the experiment in monetarism, recession, an energy crisis, a sharp appreciation of the dollar, and other national and global economic disruptions have played a more important role than capital or reserve levels in the stability of financial systems, says Wray.

Greater transparency, better risk assessment, and improved supervision of banking are desirable but will not do much to enhance financial stability, states Wray. The problem is that recent improvements in the financial position of international banking systems are the result of increasing U.S. current account deficits, which might be unsustainable because the deficits rely on deficit spending by the U.S. private sector. Banks in countries with export-led growth could experience rapidly deteriorating asset values if exports to the United States falter.

Both microindustrial and macrostabilization policies of the sort advocated by Minsky are needed to address the real potential sources of instability, advises Wray. Policies that would increase U.S. domestic employment and restore income growth include an employer-of-last-resort program with an effective minimum wage; a complete revamping of the national

health care system; pension reform, including more generous Social Security benefits; community development banking initiatives; policies favoring small-to-medium-sized banks and encouraging consumption; and to-the-asset financing (linking specific liabilities to appropriate assets).

The Fallacy of the Revised Bretton Woods Hypothesis: Why Today's International Financial System Is Unsustainable

THOMAS I. PALLEY

Public Policy Brief No. 85, 2006

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The stability of the international financial system is in doubt. Analysis of the system has focused mainly on the sustainability of financing the U.S. trade deficit and has failed to understand the microeconomics of transactions within the system. According to this brief by Thomas I. Palley, the international financial system is unsustainable for reasons of demand, not supply. He recommends a global system of managed exchange rates to replace the current system.

The East Asian economies are pursuing export-led growth and running huge trade surpluses with the United States by actively pursuing policies aimed at maintaining undervalued exchange rates. Their governments continue to accumulate U.S. financial assets in order to support and stabilize the international financial system. While East Asian policymakers are correct in their belief that they can improve economic outcomes through exchange rate intervention, the system is undermining the structure of the income and aggregate demand process and eroding U.S. manufacturing capacity.

According to Palley, the core problems concern capital mobility and exchange rates. The U.S. Treasury is actively promoting liberalization of China's capital markets, along with floating exchange rates that could eventually trigger a depreciation of the renminbi. Capital market openness and renminbi depreciation would adversely affect the U.S. industrial base, so the Treasury's policies are the diametric opposite of U.S. needs today.

Palley conjectures that the real reason why the international financial system is unsustainable may lie with the U.S. domestic credit market. The system depends on continuation of the U.S. consumption boom, yet circumstances such as recession and reductions in lending and in voluntary consumer spending

could end the boom. The bottom line is that the global financial system is vulnerable to a crash that originates from within the United States. East Asian economies, which would experience a reduction in exports, foreign direct investment, and employment, can do little about it. Escaping a consumer-led recession in the United States will be difficult because the options that were employed to overcome recession in 2001 are no longer available. Moreover, the dollar may not fall very much against other currencies, so there could be a prolonged economic slump.

Palley calls for a new financial system that addresses both the root cause of the 1997 East Asian financial crisis (destabilizing capital mobility) and current exchange rate problems that have created today's global financial imbalances. In reality, both the periphery (East Asia) and the center (United States) need to change and to agree about the rules of intervention in order to protect target exchange rates. Furthermore, the onus of exchange rate intervention needs to be reversed: the country with the stronger currency should be responsible for preventing appreciation, rather than the country with the weaker currency being responsible for preventing depreciation.

Asset Prices, Financial Fragility, and Central Banking

ERIC TYMOIGNE

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www.levy.org/pubs/wp_456.pdf

Views differ about the role of a central bank. According to the New Consensus, a central bank should focus on managing inflation by using money supply and interest-rate targeting. According to the New Neoclassical Synthesis, the overriding goal should be output-price stability. According to Eric Tymoigne, University of Missouri–Kansas City, a central bank's unique goal should be financial stability. He rejects interest rates as the bank's operating tool in favor of systemic risk analysis. Policy interest rates should be set at zero for an undetermined period, he says, and financial policy should be part of a broader policy of full employment and price stability.

Tymoigne notes that central banks were created to deal with the financial side of economic systems. He also notes that, overall, the literature argues that asset prices should not concern central bankers if they do not improve the expectations of output-price inflation and economic growth. While some studies suggest that financial stability may not result from price sta-

bility, other studies question the role of asset prices in improving inflation and output targeting, and in implementing monetary policy. Tymoigne further notes that Minsky summarized the dynamics of the economic system in his financial instability hypothesis and concluded that public policy should promote economic stability and full employment.

Two relevant topics in the literature, notes Tymoigne, are the role of monetary policy in the valuation of asset prices and the relationship between full employment, price stability, and financial fragility. Post-Keynesians have shown that full employment, price stability, and financial fragility are highly complementary. Minsky asserts that it is impossible to maintain full employment in a market economy without a stable financial structure. He shows that a fragile financial structure is based on expectations of price rises built into financial positions and that lender-of-last-resort interventions are required to prevent financial instability and inflation.

Tymoigne outlines the results of numerous studies that support or negate the role of asset prices in the normal policy decisions of a central bank. In terms of the implication of asset prices on monetary policy, the level of asset prices does not matter, but small changes in asset prices could lead to large problems if the economic system is financially fragile. What is needed, he says, is a productive approach between financial institutions and central banks and the will to counter strong social and political pressures that promote short-term wealth accumulation rather than long-term financial stability. The central bank should promote interest rate stability in both short-term and long-term maturities. Since the ability of the central bank to influence the economy via interest rates during a period of capital market inflation is low and ineffective, the bank's main role should be to guide the expectations of the private sector by providing an anchor for the valuation of asset prices (e.g. via the discount rate) and influencing the method of refinancing for the private sector.

Tymoigne critically examines the position of post-Keynesian economists, who support the use of interest rates by a central bank, by studying the relationship between loan demand and interest rates and the distributive effects. He finds that higher interest rates may promote inflation, especially when firms are heavily indebted, and that higher rates increase the income received by the financial sector at the expense of the indebted sectors.

Several devices currently exist that can be used to control liquidity—lender-of-last-resort policy and supervision—but

these devices have been applied inadequately in that they do not account for the broad picture of aggregate financial fragility, says Tymoigne. He observes that the role of convention is central to economic decision making. Banking, therefore, should anchor financial decisions and be at the center of financial policy that guides the practices of financial institutions (i.e., portfolio strategy and methods of granting loans). As the lender of last resort, a central bank can write the rules of the game according to social goals, as opposed to private economic agents who are motivated by profit.

Tymoigne recommends that the central bank should be more involved in financial matters both as a guide and as a reformer. The bank should conduct more research and derive better economic models in order to understand the aggregate financial frame, the financial interactions between different sectors of the economy, and systemic risk. These actions would lead to a better understanding of illiquidity and insolvency risks, and enable the bank to promote reforms that would make the financial system more stable. Since the central bank can deal with a liquidity crisis, but not a solvency crisis, it is necessary to have a complementary institution, such as a government investment bank.

Why Central Banks (and Money) “Rule the Roost”

CLAUDIO SARDONI

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www.levy.org/pubs/wp_457.pdf

In principle, conventional money could be displaced by another instrument that is not issued by the central bank. Claudio Sardonì, University of Rome “La Sapienza,” reviews the debate on the properties of money and concludes that money is a social relation, so it cannot be displaced by agents’ spontaneous choices or by technological innovations. The creation of the euro is testimony to this viewpoint, he says.

Sardonì outlines the opposing views of Benjamin Friedman and Michael Woodford concerning the ability of the central bank to affect interest rates and implement effective monetary policy. Friedman acknowledges that the central bank’s effectiveness depends on it being the monopoly supplier of reserves, so it is able to operate through “moral suasion” (the market responds to the central bank’s [credible] signal by changing its expectations about future rates). However, if the demand for bank money, credit, and reserves continues to decline signifi-

cantly due to financial innovation, the monopolistic nature of central banks will erode and they will no longer be relevant. Woodford believes that the central bank can implement effective monetary policy when the demand for base money is nil, that is, the central bank continues to influence all short-term interest rates by paying interest on the commercial banks’ reserves.

Sardonì suggests that Friedman appears to underestimate the possibility of arbitrage between reserves and other overnight investments; the market anticipates that the demand for borrowed reserves will change and quickly adjusts the other rates before the central bank is forced to engage in large transactions. He notes that the arbitrage effect is stronger than moral suasion. The rate fixed by the central bank affects other market rates, so the central bank “rules the roost” because its liability is the economy’s unit of account.

Keynes argued that money rules the roost because the interest on money sets a limit on the level of employment. The interest rate is unlikely to decline as the stocks of all assets increase, so money has properties that make it the asset whose yield is sticky. Keynes believed that an asset other than the economy’s unit of account could rule the roost if its elasticity of production is nil (e.g., land).

Nicholas Kaldor criticized Keynes’s position by arguing that the fundamental reason why money rules the roost is that, as the economy’s unit of account, its “price” cannot vary. Kaldor’s analysis of general equilibrium in a monetary economy relates to the current discussion of why the central bank can always implement effective monetary policies (i.e., Woodford’s analysis of modern payment systems). The instrument that plays the role of unit of account is also the instrument that agents trust more than any other (i.e., the central bank’s liability).

Sardonì observes that the emergence and adoption of money is the outcome of complex social and economic processes. He asserts that, if money is a “social relation,” it cannot be displaced (except in extreme situations). The adoption of the euro is a concrete historical example of the displacement of currencies previously used as media of exchange and units of account. The euro is not the outcome of spontaneous market processes, but the outcome of decisions made by European institutions and governments for many historical, political, and economic reasons.

Federal Budget Policy

Extending Minsky's Classifications of Fragility to Government and the Open Economy

L. RANDALL WRAY

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In light of the simultaneous record balance of payments and budget deficits in the United States, Senior Scholar L. Randall Wray, University of Missouri–Kansas City and director of research, Center for Full Employment and Price Stability, examines government and the national economy in the context of Minsky's classifications of fragility. He finds that Minsky's classifications—hedge, speculative, and Ponzi—can be helpful in analyzing countries with external debts denominated in foreign currency, such as highly indebted developing countries. It is not appropriate, however, to include the United States, which has an unlimited ability to credit dollars to bank accounts and to service dollar debts, in any of these classifications. Wray also finds that Minsky's preference for a budget that balances at full employment must be modified so that the budget is biased to run deficits larger than the trade deficit at full employment. It is misguided to suggest that the U.S. federal government or the U.S. economy faces financial constraints in a regime of sovereign currency and floating exchange rates, says Wray.

Wray reviews Minsky's works and notes that Minsky realized that there is no-default risk on national government debt issued in a sovereign's currency, and no problem with "chronic" fiscal deficits. In a growing economy with a constant capital-output ratio and a private sector wanting safe, liquid assets, full employment requires a budget deficit. The optimal level of the national debt depends on the portfolio preferences of the public. Wray also notes that Minsky recognized the interrelations among the government, domestic private, and foreign sectors of the economy, and that budget deficits add to profit flows. Minsky concluded that the best combination of fiscal and monetary policy is a secular deficit with a low interest rate and that "big government" (i.e., 16–20 percent of a country's GNP at full employment) can have a powerful countercyclical impact against a decline in investment and profits.

Wray outlines the process of financing government spending in a floating rate regime. He concludes that the fear of

"markets" deciding not to buy treasury debt, if budget deficits are deemed too large, is erroneous: bond sales by the treasury and central bank are not an action to "borrow," but rather an action to drain excess reserves to comply with the required position of the banking system.

The government sector (i.e., a budget deficit) offsets the private and foreign sector leakages. Combining U.S. private sector net saving (typically 2 to 3 percent of GDP) and today's current account deficit (6 percent of GDP) means that the "normal" leakage of aggregate demand is 8 to 9 percent of GDP. The only way to sustain this leakage is if the federal government runs an equivalent deficit. A driving force of today's cycle is the household sector, which has been willing to spend far more than its income since the beginning of President Clinton's economic expansion. The "normal" private sector balance must be a large deficit, to allow the foreign leakages and support a robust U.S. economy. This scenario is highly unstable, says Wray, as private debt ratios rise quickly with rising interest rates.

Fed policy is constrained because its role as the world's banker places limits on the independence of domestic policy and significant exchange rate movements impact the world's financial system. Since the collapse of the Bretton Woods system of exchange rates, a vast international network of dollar-denominated debt has created a huge demand for the dollar. The Fed, therefore, should maintain low inflation, a strong currency, high employment, and a trade deficit. Minsky proposed several alternatives to dollar depreciation, such as import tariffs, excise taxes, and direct controls in order to rectify U.S. sector imbalances. He also supported the notion that creditor nations should run balance of trade deficits in order to supply the dollars needed by debtor nations.

The United States was a large net creditor nation in 1952, but a large net debtor nation by the end of 2004. Its net foreign asset position in 2004 was negative \$2.5 trillion, but the country still enjoys a positive net income flow on assets. There is a currency mismatch with today's floating exchange rates: U.S. liabilities are denominated in dollars, but the majority of external assets (70 percent) are denominated in foreign currencies. Wray notes that the ratio of liabilities to assets can change significantly with the value of the dollar (e.g., a 10-percent devaluation generates a net capital gain equal to 5.9 percent of GDP). The country's international position, therefore, can be termed "venture capitalist" (short-term liquid liabilities and

long-term riskier assets), an opposite position from that of the 1960s. The evidence indicates that the United States is in an increasingly precarious situation.

The taxing power of the U.S. government allows it to issue currency and reserves that are demanded domestically and abroad. The U.S. private sector is probably more financially fragile than a decade ago, but that would also be true if all debt was held domestically, observes Wray.

Wray also observes that dollar devaluation would not have large direct consequences on the ability of U.S. households and firms to service their debt. The Fed and U.S. Treasury would be able to step in and prevent any snowballing debt-deflation process. However, if liabilities were denominated in other currencies, then the effects of devaluation on U.S. fragility would be much larger.

Twin Deficits and Sustainability

L. RANDALL WRAY

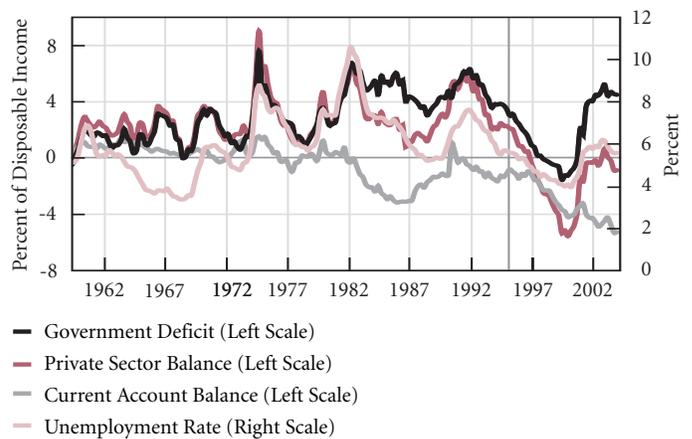
Policy Note 2006/3

www.levy.org/pubs/pn_3_06.pdf

The twin deficits have returned with a vengeance. Senior Scholar L. Randall Wray, University of Missouri–Kansas City and director of research, Center for Full Employment and Price Stability, agrees with current sentiment that federal budget deficits and current account deficits are unsustainable, but for reasons that are absent from public discourse. He believes that mainstream analyses of the U.S. economy fail to understand the connection among the sectors, since a reversion of private sector balances toward a “normal” surplus of 2 to 3 percent of disposable income (DI) would have a devastating effect on domestic demand and employment. It is misguided to speak of the United States or its federal government facing financial constraints in a regime of sovereign currency and floating exchange rates, says Wray. The next U.S. recession and global slowdown will be due not to the insolvency of the United States, but to a slowdown of the rate of growth of spending by U.S. consumers.

The figure shows the three sector balances of the United States, along with the unemployment rate. The system as a whole must run a balanced budget. Private sector saving and a current account deficit are leakages that must be matched by an injection that raises domestic demand and encourages production; i.e., a government budget deficit. After 1996, however, tax

The Three Balances and the Unemployment Rate



Sources: U.S. Bureau of Labor Statistics and Bureau of Economic Analysis

revenues grew faster than government spending, and there was a surplus federal budget at the peak of the Clinton boom. At the same time, the growing economy caused imports to rise faster than exports, generating a larger current account deficit. The federal budget surplus meant that the private sector acted as an injection and spent more than its income on a hitherto unknown scale. The surplus was short lived, however, because it drove the economy into recession and caused tax revenues to fall below government expenditures, as jobs were lost and income stopped growing.

Today’s current account deficit (6 percent of DI), combined with a normal private sector surplus, means that the total leakage out of aggregate demand (8 to 9 percent of DI) has to be made up by an injection from the federal government, since other governments must balance their budgets. The federal budget deficit is largely nondiscretionary over a business cycle, and the current account is largely outside the scope of policy, so the driving force of the cycle is private sector leakages.

As shown in the figure, the unemployment rate closely tracks the private sector balance, except after 1995, when the demand injection from a lower private sector balance was dissipated through imports. A larger increase in private sector spending, relative to income, was thus required to fuel growth and drive the unemployment rate lower. The private sector cannot balance its income and spending unless the budget deficit exceeds 6 percent of DI. A lack of political will to allow the budget deficit to rise further means that the adjustment would have to come through growth rates that are slow enough to

permit some combination of a reduced current account deficit and a budget deficit far beyond that which is thought desirable.

According to conventional wisdom, if domestic saving rates cannot be improved, then the budget deficit must be reduced, so that there is more saving for private investment. Tightening the fiscal stance will not substitute for low private sector saving, but rather will reduce private sector saving (all else being equal). There is already evidence that U.S. growth is being hindered by a tightening fiscal stance, observes Wray. The question is whether policymakers will react to a deceleration of borrowing by the personal sector quickly enough to prevent a major and prolonged recession, or debt deflation of the sort feared by Minsky.

The Burden of Aging: Much Ado About Nothing, or Little to Do About Something?

L. RANDALL WRAY

Policy Note 2006/5

www.levy.org/pubs/pn_5_06.pdf

The ratio of workers to retirees is expected to fall from three-to-one to two-to-one during the next 75 years. Social Security benefits are forecast to fall short of benefit payments in the 2040s, and the projected shortfall on all future generations amounts to \$10 trillion.

Senior Scholar L. Randall Wray, University of Missouri–Kansas City and director of research, Center for Full Employment and Price Stability, notes the uncertainty of these projections and considers the current effects of human capital, public infrastructure investment, and private investment in reducing the real burden of supporting retirees in the future. He also notes that there is no consensus about which policy initiatives will work and suggests that current policy is woefully inadequate, irrespective of future demographic trends. An aging society changes the nature, not the needs, of human capital and public investment (e.g., more senior housing and long-term care facilities will be required), he says. He further notes that Social Security “reformers” have ignored the current infrastructure deficit that burdens everyone today.

Wray observes that “more” private capital cannot be a recommended solution to projected burdens, because firms invest to make a profit now or in the very near future. He posits that private investment is held back mainly by insufficient

demand for those products that the aged require but are unable to purchase, because of insufficient incomes. Moreover, Wray suggests, any proposal to resolve future burdens of aging through “more saving” will, at best, amount to little.

According to Wray, what matters is the real burden, not the “financial burden” implied by “actuarial gaps” (i.e., higher economic growth actually worsens the discounted financial gap). He expects that worker productivity will quadruple, as the ratio of workers to retirees declines, and workers will have fewer people to support, so the total dependency ratio will rise only to levels seen in the mid-1960s. The financial burden, therefore, will not rise much. Furthermore, Wray says, supporters of Social Security have come up with numerous easy fixes that would allow for maintaining a balance between benefits and revenues.

We should continue to follow the same policy prescriptions that would make sense even if our society were not aging, states Wray. The ongoing debate in Washington about “reforming” Social Security is misguided because no one has made a strong case that financial fixes can reduce future real burdens. Reform must be geared toward increasing productivity (encouraging more capital formation), since proposals to reduce the number of elders or increase the birthrate are not true options. The types of investments that can be made today as a strategy to reduce burdens in the distant future are in human capital and public infrastructure. These investments, therefore, must be undertaken primarily by government; a conclusion that is contrary to those reached by reformers who seek to reduce the role of government.

Explorations in Theory and Empirical Analysis

Tinbergen Rules the Taylor Rule

THOMAS R. MICHL

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Heterodox economists have misgivings about monetary policy rules, particularly in light of the appointment of Ben Bernanke, who is an avowed inflation targeter, as chairman of the Federal

Reserve Board (Fed). Thomas R. Michl, Colgate University, New York, substantiates the misgivings of heterodox economists based on classical Keynesian models (Keynesian characteristics in the short run and classical characteristics in the long run). Analyzing endogenous (elastic) labor force and labor-constrained growth models, Michl finds that both inflation and employment goals cannot be reached when the central bankers' policy instrument consists of one tool only (the interest rate) for regulating growth.

The monetary authority operates according to a fixed Taylor-type rule or a central bank reaction function, which implies that the authority recognizes that the inflation process depends on a Phillips curve-like relationship and that the rate of capacity utilization depends on the interest rate through an IS curve. While most textbook presentations of the Phillips curve make the implicit assumption that full employment in the labor market and normal capacity utilization (full employment of capital) correspond, Michl attempts to define the correct relationship between these two measures.

Under the hypothesis of pure inflation targeting, Michl's model suggests that a supply-based theory of the equilibrium unemployment rate is possible within the context of a real economy (i.e., the unemployment rate shows no historical trend). The question is whether the employment level matches the labor force. When the monetary authority pursues pure inflation targeting, the employment rate is dependent on initial conditions. If the monetary authority chooses the current inflation rate as its inflation target precisely when the system is in a steady state, then the existing employment rate will remain the same in the future. The model illustrates why heterodox economists are suspicious of claims made on behalf of inflation targeting—if the monetary authority imposes inflation targeting when the employment rate is low, the authority will effectively lock in mass unemployment. An example of this outcome is the view that high unemployment in Europe may be the result of low growth.

Adding an employment target into the central bank reaction function does not guarantee anything, says Michl. According to his model, secure stable inflation is achieved when capacity utilization is at its normal level and the interest rate is at its neutral rate, which together imply a steady-state employment rate. Shocks render both the steady-state inflation rate and the capital labor force ratio path dependent. Therefore, it is not unlikely that the central bank that follows a Taylor-like rule could achieve a stable position with excessive inflation and

mass unemployment, if its policy is initiated during a period of high inflation and low employment. Michl also observed that if the target inflation rate were set above the current rate, monetary policy could raise the level of employment. This observation supports heterodox concerns that inflation targets tend to be set too low.

Michl rejects the notion that a populist central bank could do better by adopting pure employment targeting and letting the inflation rate seek its own level, since the system becomes uncontrollable. Control could be restored if the inflation target is replaced by a utilization target, but there is a price associated with restoration: the inflation rate either rises or falls continuously (it refuses to seek its own level). Therefore, pure employment targeting should not be considered in the context of the model.

When an employment target is added to an inflation target, Michl's model forces the system toward a stable point that combines the two targets. Thus, the achieved target is a linear combination of two nominal goals set by the monetary authority—an expected result according to Tinbergen's Rule. This result shows that rule-based policy is inadequate and that, in the context of optimal control theory, the monetary authority needs to account for the terminal condition. Otherwise, the economy will be guided to an unwanted destination like that reached under a mechanical policy rule.

The author observes that pure inflation targeting could achieve full employment and control inflation, and that inflation could be either a product-market or a labor-market phenomenon. Central bankers should therefore be flexible and retain both employment and inflation targets. It is striking that the Fed, which is perhaps the largest employer of Ph.D. economists in the United States, has not produced a prominent corpus of research on the real costs of unemployment or more balanced work on the costs of inflation, says Michl.

A Random Walk Down Maple Lane? A Critique of Neoclassical Consumption Theory with Reference to Housing Wealth

GREG HANNSGEN

Working Paper No. 445, April 2006

www.levy.org/pubs/wp_445.pdf

Neoclassical consumption theorists treat all assets as fungible and part of wealth. According to Research Scholar Greg Hannsgen,

housing is not completely liquid, so it should be treated differently from other assets. He observes that the homogeneity and liquidity theses of economic theory do not treat homes as special assets and commodities. He also observes that policymakers adhere to neoclassical theories and allow increasingly risky finance associated with home ownership. Economic theory does not treat homes as special assets and commodities, so the result could lead to home bankruptcies, declining neighborhoods, and a diminished sense of satisfaction among homeowners, he warns.

In contrast to Keynes's theory in which consumption is largely a function of current income, modern consumption theorists suggest that consumption depends on the stock of wealth (e.g., Friedman and Modigliani). The effectiveness of fiscal policy (and government budget deficits) is questionable in modern macroeconomics and the marginal propensity to consume out of current income is expected to be relatively small.

The author reviews theories of the heterogeneity of goods and outlines an alternative set of norms and institutions for valuing homes in light of the special role they play in the social and emotional lives of households. He finds that consumers treat homes in a different way than neoclassical consumption theory does, and the difference has important implications for government policy. Hannsgen compares housing wealth with a prototypical financial asset—a bond issued by a Fortune 500 company. In contrast to bonds, home ownership affects a family's social existence (e.g., schools and neighbors), represents a status symbol, and allows an owner's sense of control and stability. Home values represent over half of the value of assets of the median U.S. household, he notes, and most homeowners cannot diversify away from the risk of home ownership.

Hannsgen regards the neoclassical theory of consumption as a prescriptive blueprint for an economy with liberalized financial markets. He focuses on the effects of the theory on housing assets and describes a modern-day version of Friedman's theory, which emphasizes that human wealth is not always liquid but all nonhuman wealth is treated equally (including housing). Housing is considered to be equivalent to financial assets and other forms of capital, and to be as liquid as a bank account (e.g., home equity credit), so consumption is a function of permanent income.

The history of housing finance has been a steady march toward "perfect" capital markets, observes Hannsgen. However, when the savings and loan industry was allowed to lend in

markets other than home mortgages, a highly regulated industry with virtually guaranteed profitability and a narrow, fixed, mission became a dynamic part of the financial sector and a truly national market (and probably contributed to the savings and loans crisis). Profit rather than home ownership and security became increasingly important. Current reform measures continue to use the homogeneity thesis as a principle of government finance (e.g., efforts to eliminate the home mortgage interest deduction). The old barriers to exchanging houses like any other goods are being broken down and the theory may be responsible for a self-fulfilling prophesy, says Hannsgen.

In terms of consumption behavior, Hannsgen reviews recent studies suggesting that new developments in mortgage finance have reduced the importance of liquidity constraints as financial markets deregulate, and that housing wealth has contributed to personal consumption expenditure growth. Thus, the liquidity and homogeneity theses are more accurate today than they were 30 years ago.

Hannsgen suggests that the current blueprint—the theory of perfect capital markets—may not be delivering the expected results and that it may not be advisable to eliminate liquidity constraints. Modes of home valuation entail individual behaviors that affect public (state) policies, social capital, and social benefits that have positive externalities. The distinctness of the goods of home ownership warrants treating housing as a special good and justifies policies designed to favor that good, he says.

There are indications that consumption theory is not accurate despite the reality of high liquidity. Agents are violating a key tenet of consumption theory: the "no-Ponzi" condition (i.e., the present value of debt in the infinite future is zero). People tend to start from current needs and project into the future, rather than start from the infinite future and work backward in order to stay solvent over the long term. Ponzi finance among households, however, is encouraged (e.g., the evolving profit-driven financial system supports a short-term view by pushing variable rate mortgages). It is ironic, says Hannsgen, that an economic theory that depends on long-term solvency conditions to obtain coherent dynamics is breeding the conditions for a period of widespread bankruptcies.

Gibson's Paradox II

GREG HANNSGEN

Working Paper No. 448, May 2006

www.levy.org/pubs/wp_448.pdf

Gibson's paradox is that interest rates and price levels are positively correlated. One possible implication is that raising interest rates would be the incorrect response to inflation. Research Scholar Greg Hannsgen extends both his model and empirical investigation of Gibson's paradox in Working Paper No. 410, which is summarized in the Winter 2005 *Summary* on pages 29–30. His findings confirm that an increase in inflation increases the central bank's tendency to raise rates, which only exacerbates the original inflationary problem, and that some form of local cycle exists in inflation-output-interest rate space.

The author's previous findings showed that aggressive monetary policy can destabilize both output and inflation. In this working paper, Hannsgen combines monetary policy (the interest rate) as a function of central bank target variables, such as inflation and the output gap (a relatively new way of modeling policy formation), with the cost-push effects of interest rates used in previous formal models by other economists (e.g., L. Taylor and A. K. Dutt). A second novel addition is the positing of a Minskyan effect of interest-rate changes on output. Hannsgen also added several new features to his model that increased its complexity (i.e., a system of three nonlinear differential equations in three variables).

In the model, prices are driven by costs, and there are two factors of production: labor and bank loans. The demand side of the model features an "acceleration channel"—the rate of change of the interest rate affects output. Thus, it is assumed that part of real aggregate demand (or sales) is a linear function of output and part is a function of the real interest rate and the rate of change of the interest rate.

The Gibson effect has a tendency to destabilize the equilibrium point. Under certain (weak) assumptions, the model fits locally into a well-known "genus" of cycles, as shown by the Hopf bifurcation theorem. If three conditions hold, the only unknown is whether the local cycle is stable or unstable. That is, the local cycle may take the form of a stable orbit or a "corridor of stability." If a cycle does not exist, very low or very high values of the sensitivity of policy to inflation guarantee instability.

The implication of the analysis is that one must be aware of possible perverse effects in implementing monetary policy.

The key causal chain is that an increase in inflation increases the central bank's tendency to raise rates, which only exacerbates the original inflationary problem.

The Minskyan System, Part I: Properties of the Minskyan Analysis and How to Theorize and Model a Monetary Production Economy

ERIC TYMOIGNE

Working Paper No. 452, June 2006

www.levy.org/pubs/wp_452.pdf

In the first of a three-part study, Eric Tymoigne, University of Missouri–Kansas City, reviews the theory of Hyman P. Minsky in order to understand the dynamics of Minsky's financial instability hypothesis and model his theoretical framework. In response to critiques by some authors, it is necessary to clarify how Minsky developed his theory and what causes financial instability, he says.

Tymoigne groups the main organizing principles of Minsky's theory into 12 elements. The first element is the nature of the capitalist system, which is a monetary production economy. Money is the center of economic decisions, competition is an essential ingredient, and the race for profits is the source of productivity and instability (uncertainty). He notes that Minsky recognized the inherent flaw of the financial structure and the maturity mismatch between assets and liabilities on the balance sheets of both enterprises and banks that lead to inflation, unemployment, and a rise in inequality. He also notes that a central aspect of the Minskyan system is accounting for non-productive financial activities.

The second element is that decisions are based on conventional (rational) judgments, and consensus stabilizes the decision-making process and determines the state of long-term expectations that are used to determine the level of economic activity, as well as the normal margins of safety when activities are externally funded. In Minsky's framework, the normal margins of safety loosen during periods of prolonged growth (e.g., overly optimistic projections).

The third element is financial innovation by large banks and enterprises that is subsequently diffused to the rest of the economy. According to Minsky, financial innovation is a counterpart to productive innovation and should be promoted by regulatory authorities. The unlimited a priori constraint on financial innovation is a potential source of instability.

The fourth element is the creation of IOUs, which is a leveraging process that provides money now for money later. The value of money is maintained by the need to make payments to banks and the Treasury by debtors and taxpayers. The role of the reflux mechanism (spending and borrowing of liquid savings) is very important and directly related to the weakening process of the financial structure (e.g., speculative and Ponzi structures). The money supply is partly endogenous and exogenous due to different procedures of IOU injections between the private and public sectors.

The fifth element is the role of bankers, who are an essential component of the system at all stages of the economic process and who need to be managed. Banks are profit-maximizing, highly leveraged, speculative enterprises, because the maturity of debts is much shorter than the maturity of assets. Banks may promote either stability or instability due to their structural organization.

The sixth element is the cost of external funds. The change in the relationship between the amount of cash outflows and inflows is essential for the financial instability hypothesis and for modeling the flow implications of debt instruments.

The seventh element relates to the cash-box condition (an economic unit has to have enough [nominal] cash inflows or cash to meet its [nominal] cash outflows) and margins of safety, which determine the expected liquidity and solvency of an economic unit. All economic activities involve income, balance sheet, and portfolio transactions. The notion of “position making” (meeting balance-sheet commitments with portfolio transactions) is central to the Minskyan approach.

The eighth element relates to the accumulation process. Minsky used Kalecki’s equation of aggregate profit to explain the determination of aggregate income. Both relative prices and financial structure are central in determining the investment level. The circularity of a capitalist economy is part of the internal flaw of the capitalist economic system and the frustration of expectations by macroeconomic forces is essential in explaining the dynamics of the Minskyan system.

The ninth element is the financing and funding process that supports all economic activities and involves a flux (via monetary creation) and a reflux of money. All economic agents may have refinancing needs, and money is never neutral because it satisfies the process and calms economic agents in the face of uncertainty. (Minsky’s theory does not rest on the loanable funds theory.)

The 10th element relates to fragility, instability, and crisis. Financial fragility is associated with overindebtedness and relates to the structure of financial positions of private economic units and the presence of built-in stabilizers. Both endogenous and exogenous factors affect economic stability (full employment at stable prices). Normal variations in cash inflows within a fragile financial system may lead to crisis or recession because the turning point is determined endogenously.

The 11th element is the role of the boom period (when cash inflows cannot grow as fast as balance-sheet commitments without generating inflation) and the creation of crisis when price expectations are not realized. The boom precipitates the turning point, and profits are related to problems of an “inflation barrier” and unproductive economic activities that are funded externally (e.g., takeovers, mergers, and conglomerate expansions). An important implication for modeling Minsky’s theoretical framework is that economic growth will not weaken the financial position of private units if growth is based on government spending that injects safe assets into the balance sheet of private units.

The 12th element concerns the impact of the preceding 11 elements on inflation and employment. Tymoigne highlights two points: (1) full employment equilibrium is not the natural outcome of a free market economy; and (2) inflation does not necessarily have monetary origins. According to Minsky, full employment and economic growth are independent goals. The best policy package is a stabilization policy coupled with an employer-of-last-resort program, an income policy, and socialization of investments related to private needs. Psychological and social factors, profit-seeking behavior, and competition for monetary accumulation have the tendency to promote instability. These observations are important for modeling because they provide a framework to test and compare policy alternatives on an economic system.

The dynamics of the capitalist system are set in the way economic activities are financed and funded, and on the psychological, sociological, and macroeconomic elements affecting the decision process. According to Minsky, if one adopts a free market economy, one must also adopt a big government. Full employment and financially robust policies are central policy goals because they promote social equity and financial stability that are not provided by a capitalist market system. Fiscal and monetary policy should discard fine-tuning, as well as growth-oriented policies, since these procedures lead to stagflation.

The Minskyan System, Part II: Dynamics of the Minskyan Analysis and the Financial Fragility Hypothesis

ERIC TYMOIGNE

Working Paper No. 453, June 2006

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Minsky formulated his financial instability hypothesis based on the 12 elements presented in *The Minskyan System, Part I* (see page 44). Minsky's essential conclusion—that market mechanisms cannot lead to a sustained, stable-price, full-employment equilibrium—leads to: (1) the anti-laissez-faire theorem (a “big” government is essential for innovation and finance in a free market economy); and (2) the performance theorem (a free market economy has a tendency to generate economic depressions).

In this second of a three-part study, Eric Tymoigne, University of Missouri–Kansas City, focuses on the dynamics at the root of the endogenous financial weakening of capitalist economic systems: financial leverage and conventional expectations. Expected and actual cash flows, which lead the dynamics, are reviewed in the context of investment decisions by entrepreneurs.

The expected external funding of new economic activities depends on two important factors: borrowing power and the difference between expected and current leveraging ratios. Tymoigne notes that flow-leveraging ratios and cash-flow margins are inversely related and have inverse implications for economic activity. For example, a lower cash commitment is equivalent to a higher cash flow margin, which means that an economic unit is more liquid and is good for investment.

According to Minsky's theory of the business cycle, the leading element is a convention about the appropriate use of leveraging: over a period of prolonged expansion, the leveraging ratio always goes up, reflecting a loosening in the conventions for “viable” economic projects. This tendency is rooted in the psychological and social factors that determine economic decisions. A change in the state of long-term expectations (e.g., cash commitments) significantly affects production and employment, if the financial positions of economic agents are fragile.

In order to explain why the growth rate of profit is lower than the growth rate of cash commitments over the business cycle, Tymoigne outlines the forces that weaken the economy. The forces decrease the rate of growth of aggregate gross profit

(e.g., elements of the aggregate profit equation, such as reduced investment and consumption, declining trade balances, or a reduction of government deficits) and increase the rate of growth of cash commitments (the unit cost of external funds and the level of outstanding liabilities are affected by the interest rate differential and rising interest rates, the nature of banks, and tighter monetary policy). Cash commitments ultimately grow at a higher rate than does aggregate profit, because of the combination of expanded use of external funds to finance activities and the shortening of maturities due to rising interest rates and financial innovations. Tymoigne also outlines a number of additional factors (e.g., deliberate choice, income losses, rising labor costs, higher refinancing costs, and declining asset prices) that contribute toward a dependence on refinancing needs. These factors have a tendency to become more prominent as the economy moves toward full employment in a free market system.

Tymoigne identifies several positive-feedback loops, in the relationship between productive and financial variables, that help to explain the financial-weakening process. He places these feedback loops in four categories: cash flow, flow, stock, and expectational. He also identifies factors that limit the weakening process. The factors include entrepreneur and lender risk, a financial-innovation barrier, the paradox of leverage (funding limits frustrate expectations), and the role of government. There are behavioral, economic, political, and logical explanations for the financial weakening of the economy, but, because of built-in stabilizers, the weakening is not necessarily automatic, says Tymoigne. It is impossible to predict the downturn of a business cycle, and many different channels can generate a crisis. What matters, according to Tymoigne, is not the cause of the crisis, but the process that leads to the possibility of crisis.

Tymoigne notes that Minsky claimed that his own hypothesis was empirical (in spite of possible evidence to the contrary from other studies). He also notes that Minsky's theory should not be restricted to investment funding, because the main problem is in the financial sector, not the productive sector. Since banks always leverage their positions, they have the potential to be a great source of instability. The federal government can also be a source of instability, if it is obsessed with “sound” fiscal principles. For example, economic crises have followed budget surpluses.

Tymoigne, specifying that Minsky's theory must be tested in nominal terms, finds that interest rates only partially explain the change in the cost of external funds. He recognizes that an

economy's fragility may not be visible, and that the debt-equity ratio may be misleading. Therefore, there should be a more detailed analysis of balance-sheet structures, he says. In order to derive a financial obligation ratio for each sector, cash commitments should include all outflows related to financial contracts, and the analysis of fragility should include a sensitivity analysis.

Modeling must account for the weakening of the actual and expectation levels, concludes Tymoigne. He recommends creating models that have shifting behavioral parameters.

The Minskyan System, Part III: System Dynamics Modeling of a Stock Flow–Consistent Minskyan Model

ERIC TYMOIGNE

Working Paper No. 455, June 2006

www.levy.org/pubs/wp_455.pdf

In this third of a three-part study, Eric Tymoigne, University of Missouri–Kansas City, formulates a post-Keynesian/Minskyan model based on his analysis of Minsky's framework, as outlined in Parts I and II (see pages 44 and 46). The model emphasizes the importance of conventional decision making in the determination of investment. The model consists of three sectors (household, firm, and banking) and two assets (capital assets and demand deposits), and uses the tools of system dynamics and a stock-flow table in order to show the flow and stock implications of the model. The accounting framework is presented in terms of the balance sheet of each sector. Consistency is verified when the sum of all flows and stocks—for each sector and across sectors—is zero. Since Minsky's theory emphasizes the mismatch between assets and liabilities (due to maturity differentials), Tymoigne explicitly accounts for this relationship in his model (e.g., the gestation period of new capital goods is assumed to be twice the maturity of long-term loans).

Tymoigne's model contains a productive side that explains how production, employment, consumption, investment, prices, and profits are determined at the aggregate level; and a financial side that deals with the methods through which economic activity is financed and funded (e.g., the payment of investments and cash commitments, and the determination of normal cash-flow margins). The model also accounts for other important characteristics of the Minskyan system—such as the importance of conventions and the cash-box condition (firms

cannot spend more money than they have)—that determine the amount of cash commitments that can be serviced. (In the model, interest payments are serviced first, and short-term debts are serviced before long-term debts.) The model excludes some elements, such as the determination of interest rates and maturities, the propensity to hoard, an explanation of production and its effect on the investment decision, and the role of the treasury.

Tymoigne uses two different models (one in which the unit cost of external funds is fixed, and another in which the central bank affects short-term interest rates) and conducts several simulations to analyze and verify specific dynamics of the Minskyan framework. Expectations in terms of profit and risk are central to the dynamics of the Minskyan model, and initial conditions are crucial factors in the dynamics of the economic system. A change in the state of current expectations (e.g., shocks) can cause the economy to shift from depression to expansion, or vice versa, thus proving that expectations can dramatically affect the behavior of the economic system.

Based on several simulations, Tymoigne concludes that it is possible to have processes of expansion, recession, stagnation, and recovery that are generated endogenously via the introduction of monetary policy. But, he notes, the central bank is inefficient in stimulating a recovery by acting on interest rates—the recovery will occur only when the simplification process (in which nonperforming outstanding debts are eliminated from the system) is almost over. He also concludes that banking systems are greatly affected by whether or not loans are refinanced.

An important result of Tymoigne's model is the endogenous verification of Minsky's financial instability hypothesis, assuming one includes a central bank that uses interest rates to try to manage the economy. Other elements of Minskyan thought that Tymoigne verifies include the importance of maturity matching (assets and liabilities) in the stability and dynamism of an economic system, and the role of the simplification process in a free market economy. The financial side of the capitalist economic system affects the behavior of the rest of the system.

Tymoigne's analyses imply that interest rate policies are ineffective and promote business cycles. He suggests that the central bank abandon these policies and concentrate, instead, on other goals, such as liquidity and stability of the system. He further notes that these goals could be achieved by promoting

maturity matching, creating financial instruments that meet the needs of borrowers, defining the normal margins of safety, and shortening or eliminating the simplification process. The central bank should implement a permanently low interest rate so that an additional disturbance is not added to the payment system, says Tymoigne.

INSTITUTE NEWS

New Research Associates

JACQUES SILBER is a professor of economics at Bar-Ilan University, Israel, who specializes in income inequality and poverty, as well as discrimination and segregation in the labor market. At Bar-Ilan he chaired the Department of Economics from 1993 to 1995 and was a member of the Academic Executive Committee from 1998 to 2000. He has held various visiting teaching positions at the University of Connecticut; University of Southern California; University of California, Los Angeles; University of Geneva; University of Nice–Sophia Antipolis; Université du Maine; University of Aix-Marseille; Universitat Autònoma de Barcelona; the MILE Program at the University of Bern, Switzerland; University of Coimbra, Portugal; and Christian-Albrechts-University at Kiel, Germany. He was also a research scholar at Yale University and a visiting scholar at the World Institute for Development Economics Research in Helsinki and at the International Poverty Centre in Brasilia.

Silber is the author of more than 80 papers and articles that have been published in international academic journals, including *Quarterly Journal of Economics*, *Review of Economics and Statistics*, *International Economic Review*, *European Economic Review*, and *Economics Letters*. His books include *Handbook on Income Inequality Measurement*, with a foreword by Nobel laureate Amartya Sen (Kluwer Academic Publishers 1999), and *The Measurement of Segregation and Discrimination in the Labor Force*, coauthored with Yves Flückiger (Physica-Verlag 1999). He is editor in chief of the *Journal of Economic Inequality* and of a book series, *Economic Studies in Inequality*, *Social*

Exclusion and Well-Being (both published by Springer). He has also edited special issues of the *Journal of Econometrics*, *Research on Economic Inequality*, and *Economica*.

Silber holds degrees in international relations from the Institut d'études politiques, in demography from the Institut d'études démographiques, and in economics from the Faculté de droit et de sciences économiques, Université de Paris. He also holds master's and Ph.D. degrees in economics from the University of Chicago.

BRANKO MILANOVIC is the lead economist in the World Bank Research Department, a unit dealing with poverty, income distribution, and household surveys. He is also a senior associate at the Carnegie Endowment for International Peace in Washington, D.C., and an adjunct professor at The Paul H. Nitze School of Advanced International Studies, John Hopkins University, Washington, D.C.

Milanovic's research focuses on the methodology and empirics of inequality, poverty, and social policy in transition economies, and on globalization and inequality. His recent publications include *Worlds Apart: Measuring International and Global Inequality* (Princeton University Press 2005); *Income and Influence: Social Policy in Emerging Market Economies*, coauthored with Ethan Kapstein (Upjohn 2003); "True World Income Distribution, 1988 and 1993: First Calculations Based on Household Surveys Alone," *Economic Journal* (2002); and *Income, Inequality, and Poverty during the Transition from Planned to Market Economy* (World Bank 1998).

Milanovic holds a Ph. D. in economics from the University of Belgrade, Serbia.

New Levy Institute Book

The Distributional Effects of Government Spending and Taxation

DIMITRI B. PAPADIMITRIOU, ed.

Houndmills, Basingstoke, and Hampshire, U.K., and New York, N.Y.: Palgrave Macmillan, 2006

This book focuses on the distributional consequences of the public sector. It examines and documents, both theoretically

and empirically, the effects of government spending and taxation on personal distribution, that is, on families and individuals. In addition, it investigates the relationship between the public sector and the functional distribution of national income. In this respect, three sides of government activity are encompassed: the beneficiaries of government expenditures such as schools, highways, and police and fire departments; the beneficiaries of government transfer programs; and the bearers of the tax burden.

The book also analyzes government activity on the federal level and looks at the distribution of both the costs and benefits of a single government program such as Social Security. A key feature is the empirical studies of other countries, including countries of the European Union, Poland, Australia, and South Korea, as well as comparative studies among a set of countries.

The chapters of this volume were selected from papers delivered at Levy Institute seminars and conferences aimed at finding policy options to pressing economic problems.

Upcoming Event

Conference: Employment Guarantee Policies: Theory and Practice

October 13–14, 2006

Blithewood

Annandale-on-Hudson, New York

Registration and program information are posted on the Levy Institute website, www.levy.org.

The focus of this conference is on government policy initiatives that can create a safety net through public service employment for individuals who are ready, willing, and able to work but find themselves in an economic environment that does not offer employment opportunities. Our premise is that unemployment and involuntary “inactivity” are *structural macroeconomic problems* of both developed and developing economies. The negative effects of unemployment reach beyond the immediate economic losses to individuals and their families and to the potential growth of the economy. Joblessness is often accompanied by poor health and psychological problems, deprecia-

tion of human capital, social exclusion, and overall lack of motivation for future work.

Protracted periods of unemployment lead to multidimensional poverty, deterioration of communities, erosion of decent job conditions, and intolerance along racial and gender divides. There appears to be a connection between the right to work and the role of government in guaranteeing employment, and this ought to be part of the public policy dialogue.

In this conference, academics and policy analysts will present research findings and exchange views on:

- Past and current country-level experiences of employment guarantee programs
- Public service employment and price stability
- Public job creation programs that can substitute for unpaid work disproportionately carried out by women and children
- Feasibility of implementing public service employment programs
- Improving the design and effectiveness of existing programs
- Designing tools for policy and impact analysis, including time-use surveys and economic modeling
- The effects of public service employment in promoting gender equality and pro-poor growth

Access to employment is important for all countries in that employment can be a contributing factor in ameliorating poverty and social exclusion and in promoting economic development. For some countries, achieving the Millennium Development Goals provides a timely opportunity to assess the impact of employment guarantee schemes to date and to analyze their potential impact for the future.

PUBLICATIONS AND PRESENTATIONS

Publications and Presentations by Levy Institute Scholars

RANIA ANTONOPOULOS *Research Scholar*

Presentations: “Inflation Targeting, Full Employment Schemes, and Gender: Theory and Policy” and “Inflation Targeting and Its Alternatives,” GEM-IWG 4th International Intensive Course, Knowledge Networking Program in Engendering Macroeconomics and International Economics, Salt Lake City, Utah, June 18–30; “Hidden Vacancies: Unpaid Work, Gender, and Employment Guarantee Schemes,” GEM-IWG 7th International Conference on Gender, Macroeconomics and International Economics, Salt Lake City, Utah, July 2–3.

PHILIP ARESTIS *Senior Scholar*

Publications: *Alternative Perspectives on Economic Policies in the European Union* (with M. C. Sawyer), London: Palgrave Macmillan, 2006; “Understanding Economic Growth: New Directions in Theory and Policy” (with J. McCombie), introduction to special issue, *International Review of Applied Economics*, Vol. 20, No. 3, July; “Monetary Policy in the Euro Area” (with G. Chortareas), *Journal of Post Keynesian Economics*, Vol. 28, No. 3, Spring; “Innocent Frauds in Greenspan’s Last Testimony” (with W. Mosler), *Journal of Post Keynesian Economics*, Vol. 28, No. 3, Spring; “Has Inflation Targeting Had Any Impact on Inflation?” (with A. Angeriz), *Journal of Post Keynesian Economics*, Vol. 28, No. 4, Summer; “Technical Efficiency and Financial Deepening in the Non-OECD Economies” (with G. Chortareas and E. Desli), *International Review of Applied Economics*, Vol. 20, No. 3, July; “Is There a Role for Capital Controls?” (with J. Ferreiro and C. Gómes) in L-P. Rochon and S. Rossi, eds., *Monetary and Exchange Rate Systems: A Global View of Financial Crises*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; “Interest Rates and the Real Economy” (with M. C. Sawyer) in C. Gnos and L-P. Rochon, eds., *Post-Keynesian Principles of Economic Policy*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; “The Case for Fiscal Policy” (with M. C. Sawyer) in P. G. Berglund and M. Vernengo, eds., *The Means to Prosperity: Fiscal Policy Reconsidered*, Oxford: Routledge, Taylor, and

Francis Group, 2006; “Reflections on the Experience of the Euro: Lessons for the Americas” (with M. C. Sawyer) in M. Vernengo, ed., *Monetary Integration and Dollarization: No Panacea*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; “Alternatives for the Policy Framework of the Euro” (with M. C. Sawyer) in W. Mitchell, J. Muysken, and T. V. Veen, eds., *Growth and Cohesion in the European Union: The Impact of Macroeconomic Policy*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; “Fed Policy Brings Economy Back to the Risks of 2000: Letter to the Editor” (with E. Karakitsos), *Financial Times*, June 20; “Macroeconomic Policy and the European Constitution” (with M. C. Sawyer), *International Papers in Political Economy* (New Series), 2006.

Presentations: “New Consensus Monetary Policy: Theory and Evidence,” “Can the Euro Area Play a Stabilizing Role in Balancing the Global Imbalances?” and “Macroeconomic Policies in the EMU,” University of Castilla-La Mancha, Albacete, Spain, April 24–25; “New Consensus Monetary Policy: Theory and Evidence,” Central European University, Madrid, Spain, April 26; “Economic Policies in the New Consensus Macroeconomics,” Instituto Estudios Fiscales (IEF), Madrid, Spain, April 27; “Europa no hace lo suficiente para corregir los desequilibrios mundiales,” interview with Emilio Fernandez published in *La Tribuna De Albacete*, Spain, April 30; “The Bank of England Monetary Policy and the New Consensus Macroeconomics: An Assessment,” International Colloquium, University of Bordeaux, France, May 5; “A Critical Appraisal of New Consensus Macroeconomics,” University of Paris, France, May 9; “Fiscal Policy Within the New Consensus Macroeconomics Framework,” conference, Recent Developments in Fiscal Policy, Treasury auditorium, HM Treasury/Government Economic Service, June 2; “The Monetary Policies of the Bank of England and the ECB” and “Central Bank Independence and Democracy,” Banche Central E Principio Democratico conference, Instituto Italiano di Scienze Umane, Università degli Studi di Napoli Federico II, Naples, Italy, June 27; “The Monetary Policies of the Bank of England and the ECB,” Facoltà di Scienze Economiche e Aziendali, Università Degli Studi del Sannio, Benevento, Italy, June 28.

CLAUDIO H. DOS SANTOS *Research Scholar*

Publications: “Keynesian Theorising during Hard Times: Stock Flow–Consistent Models as an Unexplored ‘Frontier’ of Keynesian Macroeconomics,” *Cambridge Journal of Economics*, Vol. 30, Issue 4, July; “Distribution and Growth in a Post

Keynesian Stock Flow–Consistent Model” (with G. Zezza) in *Economic Growth and Distribution: On the Nature and Causes of the Wealth of Nations*, N. Salvadori, ed., Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006.

DIANE ELSON *Senior Scholar*

Publications: “Women’s Rights Are Human Rights: Campaigns and Concepts,” in L. Morris, ed., *Rights: Sociological Perspectives*, London: Routledge, 2006; *Monitoring Government Budgets for Compliance with CEDAW*, New York: UNIFEM, June; “Gender Equality, Public Finance, and Globalization” in J. Boyce, S. Cullenberg, P. Pattanaik, and R. Pollin, eds., *Human Development in the Era of Globalization*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., July 30.

Presentations: “International Financial Architecture: A View from the Kitchen,” Seminario de Economía Fiscal y Financiera, Instituto de Investigaciones Económicas, Universidad Nacional Autónoma de México, Mexico City, April 26; “Public Expenditure with a Gender Focus,” Comisión de Equidad y Género, Cámara de Diputados, Mexico City, April 26; “Gender-Aware Visions of the Economy,” “Gender and Fiscal Policy,” and “Gender Analysis of Public Expenditure,” Instituto de Investigaciones Económicas, Universidad Nacional Autónoma de México, Mexico City, April 27–28; “Macroeconomic Policy and Employment Generation: Gender Dimensions,” UN Department of Economic and Social Affairs, Development Forum on Productive Employment and Decent Work, New York, May 8; “Trade Liberalization and Women Workers,” conference on Action Research on Women Workers and Globalization, Manchester Metropolitan University, United Kingdom, June 16; “Gender and Macroeconomics—New Issues,” IAFFE 15th Annual Conference on Feminist Economics, Sydney, Australia, July 7–9; “Unpaid Work: Creating Social Wealth or Subsidizing Patriarchy and Profits,” Research School of Social Sciences, Australian National University, Canberra, July 11; “Budgeting for Women’s Rights,” ACT Council of Social Service, Canberra, July 13; “Unpaid Work: From Recognition to Transformation,” Hawke Research Institute, University of South Australia, Adelaide, July 21; “Gender Analysis of Government Budgets,” Japan Chapter of International Association for Feminist Economics, Ochanomizu University, Tokyo, July 29; Keynote address, “Investing in Poor Women to Achieve the Millennium Development Goals,” UNDP, Tokyo, July 31.

CAREN A. GROWN *Senior Scholar*

Publications: “Introduction” and “Trade Liberalization and Reproductive Health: A Framework for Understanding the Linkages” in *Trading Women’s Health: Trade Liberalization and Reproductive Health in Developing Countries*, C. Grown, E. Braunstein, and A. Malhotra, eds., London: Zed Books, 2006; “Gender Equity and Globalization: Macroeconomic Policy for Developing Countries” (with S. Seguino), *Journal of International Development*, May 30.

Presentations: “Putting Women at the Center of Development,” International Women’s Day Conference, Simon’s Rock College of Bard, Great Barrington, Massachusetts, March 3–4; “Women Workers in the Global Economy,” Columbia University, New York, March 10; “Gender Equality, Poverty, and the Millennium Development Goals,” Cornell University, Ithaca, New York, March 31, and New School for Social Research, New York, May 3; “Quick-Impact Initiatives and Financing Requirements for Achieving Gender Equality in Asia and the Pacific,” ADB Forum on Gender and Development, Asian Development Bank, Manila, Philippines, May 29–31; “Gender Issues in Taxation” and “Millennium Development Goals and PRSPs,” GEM-IWG 4th International Intensive Course, Knowledge Networking Program in Engendering Macroeconomics and International Economics, Salt Lake City, Utah, June 18–30; “Financing Requirements for Achieving Gender Equality in Low-Income Countries” and “Gender and Public Finance: New Directions and Research,” IAFFE 15th Annual Conference on Feminist Economics, Sydney, Australia, July 7–9.

DIMITRI B. PAPADIMITRIOU *President*

Publications: “Thinking the Unthinkable: Can Trade Protection Be Benign?” (with W. Godley and G. Zezza), *The Milken Institute Review*, Second Quarter, 2006; “Government Effects on the Distribution of Income” in *The Distributional Effects of Government Spending and Taxation*, D. B. Papadimitriou, ed., Houndmills, Basingstoke, Hampshire, U.K. and New York, N.Y.: Palgrave Macmillan, 2006.

Presentations: Interview with David R. Francis regarding the current account deficit, *The Christian Science Monitor*, March 14; interview with Greg Robb regarding the economy, the federal reserve, and the war, MarketWatch.com, April 5; panelist at the AFL-CIO and the U.S. Business and Industry Council conference, “Trade Summit 2006: Crisis and Opportunity,” National Press Club, Washington, D.C., July 12.

JOEL PERLMANN *Senior Scholar*

Presentations: Comments on *The Immigrant Threat* by Leo Lucassen at 'Author Meets Critics' session, European Social Science History Conference, Amsterdam, March 23; "Discipline and Dissent in Ben Gurion's Labor Party, 1932," European Social Science History Conference, Amsterdam, March 24; "Racializing and Deracializing the Immigrant, 1898–1912," Immigration conference, Ben Gurion University of the Negev, Israel, May 23.

EDWARD N. WOLFF *Senior Scholar*

Publications: *Does Education Really Help? Skill, Work, and Inequality*, Oxford: Oxford University Press, 2006; "Skills, Computerization, and Income Inequality in the Postwar U.S. Economy" in *Research on Economic Inequality: Dynamics of Inequality and Poverty*, J. Creedy and G. Kalb, eds., Elsevier (JAI) Press, Vol. 13, 2006.

Presentations: "Recent Trends in Living Standards," conference, Economic Inequality and the Prospect of Democracy: Global Perspectives, William Paterson University, Wayne, New Jersey, April 13; Carnegie-Rochester Public Policy Conference, "The Retirement Wealth of the Baby Boom Generation," Rochester, New York, April 21–22; "Estimating the World Distribution of Household Wealth" and discussant of "Wealth Distribution in OECD Countries" by M. Jantti and E. Sierminska, UNU-WIDER project meeting, Personal Assets from a Global Perspective, Helsinki, Finland, May 4–6; "Inheritances and Wealth Inequality," workshop, The Transmission of Inequality, Russell Sage Foundation, New York, May 8; "Household Wealth and the Measurement of Economic Well-Being in the United States," European Society of Population Economics 20th annual conference, Verona, Italy, June 22–24.

L. RANDALL WRAY *Senior Scholar*

Publications: "International Aspects of Current Monetary Policy" in *The New Monetary Policy: Implications and Relevance*, P. Arestis, M. Baddeley, and J. McCombie, eds., Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; "When Are Interest Rates Exogenous?" in *Complexity, Endogenous Money and Macroeconomic Theory: Essays in Honour of Basil J. Moore*, M. Setterfield, ed., Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; "To Fix or to Float: Theoretical and Pragmatic Considerations," chapter in L-P. Rochon and S. Rossi, eds., *Monetary and Exchange Rate Systems: A Global View of Financial Crises*, Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006;

"Currency Sovereignty and Policy Independence: The Case of Argentina," *Economic and Political Weekly*, Vol. XLI, No. 19, May 13–19; "Demographics and Social Security," *Review of Political Economy*, June; "Keynes's Approach to Money: An Assessment after 70 years," *Atlantic Economic Journal*, Vol. 34, No. 2, June; "Argentina's Jefes Program: Lessons of an Employment Guarantee," *Economic and Political Weekly*, Vol. XLI, No. 23, June 10–16; "Flexible Exchange Rates, Fed Behavior, and Demand Constrained Growth in the USA" in *International Review of Applied Economics*, Vol. 20, No. 3, July; "A Review of Theories of Financial Disturbance: An Examination of Critical Theories of Finance from Adam Smith to the Present Day, by Jan Toporowski," *Journal of Economic Issues*, XL, No. 3, September.

Presentations: "Extending Minsky's Classifications of Fragility to Government and the Open Economy," *Fragilidad financiera y el desarrollo económico: Un homenaje a Hyman Minsky*, National Autonomous University of Mexico (UNAM), May 11–12; "Extending Minsky's Classifications of Fragility to Government and the Open Economy," Interdisciplinary Summer School, University of Missouri–Kansas City, June 18–24; "Flexible Exchange Rates, Central Bank Behavior, and Demand-Constrained Growth: The Case of the United States," University of Rome La Sapienza, June 27; "Keynes's General Theory after 70 Years" and "Keynes's Approach to Money after 70 Years: What Can Be Recovered?" conference, International Economic Association, Siena, Italy, July 3–6; "Employer of Last Resort: A Case Study of Argentina's Jefes Program," "Keynes's Approach to Money: An Assessment after 70 Years," "The Twin Deficits and Sustainability of the U.S. Expansion," and "Basel II and Financial Instability: A Minskyan Approach," University of Paris–South, July 10–13.

GENNARO ZEZZA *Research Scholar*

Publications: "Distribution and Growth in a Post Keynesian Stock Flow–Consistent Model" (with C. H. Dos Santos) in *Economic Growth and Distribution: On the Nature and Causes of the Wealth of Nations*, N. Salvadori, ed., Cheltenham, U.K.: Edward Elgar Publishing Ltd., 2006; "Thinking the Unthinkable: Can Trade Protection Be Benign?" (with W. Godley and D. B. Papadimitriou), *The Milken Institute Review*, Second Quarter, 2006.

Presentation: "Different Approaches to Stock-flow Norms," Developments in Economic Theory and Policy, third international conference, Bilbao, Spain, July 6–7.

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