



*Conference Proceedings*

16<sup>th</sup>  
ANNUAL  
HYMAN P. MINSKY CONFERENCE  
ON THE STATE OF THE U.S. AND  
WORLD ECONOMIES

*Global Imbalances: Prospects for the  
U.S. and World Economies*

*April 19–20, 2007, Blithewood, Annandale-on-Hudson, New York  
A conference of The Levy Economics Institute of Bard College*

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*The proceedings consist of submitted papers by the speakers  
and summaries of session participants' presentations.*

## Foreword

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I am delighted to welcome you to the 16th Annual Hyman P. Minsky Conference on “Global Imbalances: Prospects for the U.S. and World Economies.”

Last year, the U.S. trade deficit climbed to a record \$763.6 billion. The effect of petroleum goods has significantly contributed to the growing trade deficit over the past few years, but the deficit began to narrow in 2006. Between 2005 and 2006, the trade deficit increased with countries such as China (15 percent), OPEC (13 percent), Mexico (29 percent), and Japan (7 percent), and decreased with countries such as Canada (7 percent), South Korea (16 percent), and Great Britain (35 percent). Trade with the Eurozone remained unchanged despite the decline of the dollar relative to the euro.

The U.S. residential real estate market with its explosive growth in the subprime mortgage market represents contemporary evidence that fits Minsky’s financial instability hypothesis: stability is destabilizing. Risk reduction creates its own risk, as people feel euphoric and are encouraged to assume more debt.

Any improvement in the current account balance linked to a cut in the federal budget will only come about if the fiscal restriction causes a recession. The balance between saving and investment in the economy as a whole is not a satisfactory concept because it lumps the government and private sectors together even though these two sectors are driven by different incentives.

The accounting identity within the Institute’s macro model divides the U.S. economy into three sectors: the current account balance (external financial balance) is equal to the government balance plus the private sector balance (net saving). In 2006, the private sector balance was minus 3 percent of GDP and the government balance was minus 2.4 percent of GDP, so the current account balance was minus 5.4 percent of GDP.

The Levy Institute’s latest Strategic Analysis report, titled *The U.S. Economy: What’s Next?* (April 2007), analyzes projections by the Congressional Budget Office (CBO) based on its January 2007 annual report. The U.S. budget deficit between now and 2010 was assumed to grow at an average annual rate of 2.85 percent. According to the Levy Institute’s macro model, however, the CBO’s assumptions are wildly implausible if viewed as predictions. Based on likely changes in the financial balances of the three major sectors of the U.S. economy, output growth will slow down almost to zero sometime between now and 2008 before recovering toward 3 percent in 2009–10, and unemployment will start to rise significantly.

The CBO’s projection for the U.S. budget deficit is based on its (optimistic) average growth rate for the U.S. economy. If the CBO growth rate holds true, the current account balance will improve significantly due to a large positive response of export volumes to dollar depreciation, while the large private sector deficit will continue. This result is highly implausible, given the multifaceted implosion of the housing

market. Personal debt relative to GDP cannot continue to accelerate, while net lending has been falling rapidly since the beginning of 2006. Based on the Levy Institute's assumption of stabilizing household debt, the private sector net saving rises substantially, the current account balance improves more decisively than that implied by the CBO growth rate, and there is a small but significant rise in the budget deficit.

The Strategic Analysis report considers two alternative scenarios in the context of policy responses: (1) a further substantial depreciation of the dollar (perhaps 30 percent); and (2) expansionary fiscal policy. These scenarios, however, are unlikely in light of long lags between changes in the exchange rate and changes in real exports and imports, the inflationary consequences of the U.S. dollar's great fall in value, and the fact that currency depreciation is no longer a straightforward policy instrument; moreover, a further increase in the budget deficit (to 4.6 percent of GDP in 2010) is contrary to the present intention of the Bush administration and the Democratic Congress. According to Levy scholars, however, government policy will adjust, as it did in the 2000–03 period, and allow the current account deficit to reexpand, indefinitely postponing a rebalancing of the world economy. Thus, fiscal policy is the major alternative to keep the expansion on track, implying a significant rise in the public sector deficit (e.g., an additional increase of 3.2 percent of GDP, or \$540 billion).

The long-term fix that permits full employment without massive imbalances in trade is unlikely to happen without international cooperation and major structural changes in China and Japan that allow those countries to sustain high employment without running monstrous trade surpluses. I do not foresee a decoupling of the U.S. economy from the rest of the world. A decrease in the U.S. current account deficit must be matched by reductions in current account surpluses or increases in deficits elsewhere. It is therefore necessary to formulate a global strategy for managing global imbalances that can perhaps be achieved with discussions on a multilateral basis.

The presenters at this year's conference are top policymakers, economists, and analysts. They are uniquely qualified to offer their insights and policy guidelines on these issues. I trust you will enjoy their presentations. As always, your comments and suggestions are welcome.

I look forward to seeing you again at future Levy Institute events.

Dimitri B. Papadimitriou

*President, The Levy Economics Institute, and Jerome Levy Professor of Economics, Bard College*

# Program

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**Thursday, April 19**

**10:00–10:45 a.m.**

**WELCOME AND INTRODUCTION**

Dimitri B. Papadimitriou, *President, Levy Institute*

“Global Imbalances: The U.S. and the Rest of the World”

**11:00 a.m. – 12:45 p.m. SESSION 1**

**The State of the U.S. and World Economies**

*Moderator:* Dimitri B. Papadimitriou, *President, Levy Institute*

Lakshman Achuthan, *Economic Cycle Research Institute*

“Monitoring Windows of Vulnerability, or, How to Stop Crying Wolf”

Robert W. Parenteau, *RCM*

“Financiers Gone Wild: Entering a Minsky Moment for the U.S. Household Sector”

**12:45–2:30 p.m.**

**SPEAKER**

Wolfgang Münchau, *Financial Times*

“Can the European Economy Decouple from the United States?”

**2:45–4:15 p.m.**

**SESSION 2**

**Monetary Policy in the U.S. Economy**

*Moderator:* Greg Hannsgen, *Levy Institute*

Torsten Slok, *Deutsche Bank Securities, Inc.*

“Lessons from the Great Inflation and Disinflation”

Robert Z. Aliber, *University of Chicago*

“Four Global Asset Price Bubbles in 20 Years—A Historic Anomaly or the Wave of the Future?”

**4:45–6:15 p.m.**

**SESSION 3**

**Financial Instability in a Global Economy**

*Moderator:* W. Ray Towle, *Levy Institute*

Korkut A. Ertürk, *Levy Institute and University of Utah*

“From the Glut of Savings to the Glut of Dollars”

Jan A. Kregel, *Levy Institute and University of Missouri–Kansas City*

“Mutual Economic Policy Interests and Global Imbalances: Developed and Developing Countries in a Globally Integrated Trade and Financial System”

L. Randall Wray, *Levy Institute and University of Missouri–Kansas City*

“Stabilizing the Unstable Economy, Revisited: Extending Minsky’s Analysis to the Open Economy”

**Friday, April 20**

**9:30–10:15 a.m.**

**SPEAKER**

James K. Galbraith, *Levy Institute* and *University of Texas at Austin*  
“The Cult of Zero”

**10:30 a.m. – 12:15 p.m. SESSION 4**

**The Macroeconomic Prospects for the U.S. Economy**

*Moderator: Ajit Zacharias, Levy Institute*

James W. Paulsen, *Wells Capital Management*

“Economic and Financial Market Outlook”

Robert J. Barbera, *ITG*

“Who Is the Heir Apparent to Alan Greenspan? Hu Indeed!”

James E. Glassman, *J. P. Morgan Securities, Inc.*

“The 2007–2008 Outlook . . . Growth without the Steroids”

**12:15–2:00 p.m.**

**SPEAKER**

Frederic S. Mishkin, *Federal Reserve Board*

“The U.S. Economic Outlook”

## Speakers

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### WOLFGANG MÜNCHAU

*Financial Times*

#### Can the European Economy Decouple from the United States?



Dimitri, thanks for that very kind introduction, and also thank you for your very kind invitation to take part in this conference.

It was Stephen Hawking who said, with every formula you put into a piece of text, you halve the readership. That is the reason you won't see any mathematics accompanying my comments.

One thing they teach you at journalism school, which I also attended when I was young, is to distrust metaphors. It's one of the very useful things they teach you at journalism school. The reason you should distrust metaphors is, they may sound funny the first time you hear them, but as you pursue them, you run into difficulties.

The area that I want to talk about, decoupling, is a typical area where metaphors abound. We talk about when America sneezes, the rest of the world catches a cold—very tired, heard it a hundred times. And we talk about economic locomotives. I still remember the time when Germany was supposed to be an economic locomotive, in the late 1970s, and we know now it didn't quite work out that way. I suspect the decoupling metaphor also relates to the locomotive. The question is, is it such a sensible idea to decouple from a locomotive? And that's when you run into difficulties with this particular metaphor, because if the locomotive stalls, and you decouple, what do you do? Overtake it? It's not a perfectly sensible or clear thing. Some of the confusion we've had in the debate about decoupling also rests on the assumption that we're not quite clear what we want to decouple from.

So I'd like to rest my assumption on the scenario that Dimitri and his colleagues have worked out. It is this kind of scenario in which we like to frame this discussion, because it doesn't really make sense to decouple from an optimistic or a mild slow scenario. Our business economic cycles are not perfectly synchronized.

So the issue arises, what happens if there is a fall in U.S. economic growth, a rebalancing of the current account deficit? It is this situation where the question becomes interesting. And the question is, can the world, Europe in particular, decouple from an America that goes into hard landing?

My view is that it cannot. But first, let's make the case for decoupling.

Those who argue in favor of decoupling start by making a trade argument. I was reading the *Financial Times* this morning, and there was one analyst making exactly that point, arguing why the

European stock markets are going to perform well. The argument is that the Eurozone as a whole is trading less with the United States than with the U.K. That's quite a statement to make, both for imports and exports. And it's true: we trade less with the United States than with the U.K., and our trade relationship with Russia, with the Middle East, is also strong. Iran is a very big trading partner for Germany in particular, as is China. So there is a structural change from, say, the '70s or the 1980s.

Another argument with which I have some sympathy is that we've had a regime shift in the Eurozone. In the 1990s, we were all independent economies, each with our own monetary policy, our own fiscal policy. Sure, the exchange rates were linked through the exchange rate mechanism, and indirectly the monetary policies were linked, because everyone followed the Bundesbank at the time. But still, when a shock hit Europe, there were some problems with specific countries. Having moved to a single, large monetary union, which has characteristics similar to the United States' in macro terms—it's large and, even though it's more open than the United States, it's closed relative to what it used to be—we're somewhat more resistant to external shocks than we once were.

A third argument is the robust economic performance of the Eurozone. Today we saw the release of Germany's Annual Economic Growth Forecast by the Five Institutes, which gave one of the most optimistic assessments that I can remember. In the autumn, they predicted a 2007 growth rate of 1.4 percent. Now they predict an average 2.4 percent, and one of the institutes predicts 3 percent. That's just for Germany; it's a bit less for the Eurozone as a whole. So this is an incredible shift, not only in terms of economic growth, but also in terms of its rapidity. We see almost daily the publication of confidence indicators that show that things are getting better, after a fairly long period of very low economic growth at the beginning of this decade. And quite astonishingly, the Bundesbank, which has never been particularly optimistic, is now saying this is actually for real: this is an economic recovery. We're at the beginning of a long-cycle recovery. It's not a 2007 or 2006 phenomenon, or one that's going to slow down. We expect this performance, a gross rate in the 2 to 3 percent range, to last for a number of years.

I'm going to talk in a minute about why these expectations have shifted. I'm slightly more skeptical about the outlook here. I must admit that I never expected it to be as good as it is, so you may not trust my judgment on this; but I still believe there are some fundamental structural issues. I'm going to talk about these in a minute.

The fourth argument made by proponents of the decoupling theory is that there has also been a regime shift in terms of the economy as such—we've had economic reforms in those countries, and Germany in particular has improved its competitiveness quite dramatically. The latter statement is true; the former is less true. If you actually tally the economic reforms, if you count them, it is a very large number. But if you look at France, for example, there were hardly any economic reforms that would have shifted the country toward a more productive, more competitive level. The labor market reforms that France tried to implement were of the wrong kind; they failed politically. That was last year. It's a very controversial subject, France. The narrative in French politics, as we all have heard in the last month, is very much an anti-capitalistic one, even the remarks by those who are supposedly liberal in the European sense of the word.

Germany had one significant reform. This was the welfare reform of two years ago, which made it slightly more difficult to claim welfare forever. But the labor market is actually more rigid, in terms of its legal foundations, than it was 10 years ago. If you look at hiring and firing laws, 10 years ago there were no restrictions on companies with up to 10 employees; that cap has since been lowered to five



employees. So on the labor market side, if anything, the rules have gotten tougher, and it is very difficult to make the case that the improvement in economic performance had anything to do with economic reform policies, or anything that goes under the title of economic reform policies.

The reasons for the improvement in the economy were actually to do with something that happened in the private sector. As my colleague Samuel Britten wrote in what I thought a very good column in the *Financial Times* two weeks ago, this was done without the government. This was done by employers and employees negotiating different salaries. We've had an adjustment through cost cutting in industry that has led to an improvement in competitiveness, and therefore an export boom that has had fairly extraordinary proportions.

Now let me make the case against this outlook.

First, on trade: I think trade is not the issue. It is true, the Eurozone is trading less with the United States than with the U.K. But the main transition channel for Europe today I would probably not see as trade. There is some research I've seen that the main transition channel to Asia may be trade, but to Europe it probably isn't. The main transition channel to Europe is the financial sector. There was an interesting article in the latest IMF economic outlook quoting research on the movement in U.S. stock prices, its impact on European prices, and vice versa. The conclusion is that the United States actually has a very strong impact on European stock price movements. So if a downtrend happened in the United States that was associated, followed, or caused by an equity crash, that would immediately have implications for Europe as well.

Another market, which we talked about in our last session, is the credit market, the market for credit derivatives. We saw in the episode in early March, when credit spreads widened, it *immediately* translated to a similar readjustment of prices in the Eurozone, even though there is no subprime crisis in the same sense in Europe—it was basically a herd instinct. So if we have any of these crises that are a part of your real scenario, we would expect that the financial sector would probably not be as exuberant as it is today, and that would be a mechanism of transmission.

The next point is property. There is no causal link between the U.S. property market and the European property market, yet the statistics show that property prices in the United States and Europe actually move in almost perfect correlation with each other. The reason is twofold. There would be one-directional shocks, I would expect, small implications from property funds, reduced demands. But the main factor is common shocks. Global monetary policy has moved in certain ways. You've had a reduction in interest rates in the United States that has partly been responsible for the rise in house prices, the rise in interest rates having been partly responsible for the subsequent fall in house prices; and a similar movement in Europe, but with a delay. European interest rates have not yet peaked. It is possible that U.S. interest rates *have* peaked, and we would expect a similar outcome in Europe. We've already seen a reduction in house price inflation in those countries, Spain in particular, but not yet a crash. But we're still early in the game, so with higher interest rates to come, and a longer period of higher interest rates, I would not be surprised if several of the European housing markets were to shadow the same development.

Also, the geography is actually quite similar to the United States'. We have our coastal markets, with our West Coast—the U.K., Ireland, and Spain—showing very extreme housing price inflation. We also have this big thing in the middle, with almost flat housing prices over the last 15 years. And, using some imagination, the east of Europe, sort of our East Coast—no water, though—has been having an

incredible house price movement, and with very similar characteristics. Poland, Hungary—we've experienced some madness there, especially since in Hungary last year, 99 or 98 percent of mortgage lending and mortgages were denominated in foreign currencies. Most of those foreign currencies were Swiss francs, because Switzerland had the lowest nominal interest rates. Now the Swiss have started to raise interest rates, from zero-point-something to one-point-something, but even that is a significant increase. We could see more to come in the years ahead, but there is a discussion now of the tightening of monetary policy in Switzerland, too. So there is a risk. There's a big risk for Hungarian mortgage lenders, or rather, for Hungarian banks. The Hungarians were quite clever enough not to have their own banks but to use foreign banks, so that if any banking crisis happened there it would be usually Austrian banks that would go bust.

But we see there is a similar problem that has arisen in Europe with regional property markets. We've seen significant bubbles in regional markets, and these bubbles have been fairly extreme; in Spain we've seen price rises of close to 20 percent. There is an interesting statistic collated by the European Commission, according to which all property-related spending in Spain—and this is in a very wide sense, including public spending, and private house buying, naturally—account for 18 percent of GDP, against an average in Europe of about 8 percent. Even in Germany during the postunification period that number only got up to 14 percent. So if Spain ever reverted to that mean, that 18 percent of housing-related investment of GDP would have to be reduced down to an average of 8 or 9 percent.

Now, there are specific issues in Spain. One is immigration, and there are certain related pathologies in the rental sector. If you're an immigrant from Northern Africa you cannot rent a house, because you don't have references; but it's very easy for you to get a mortgage: you just need to fill out a form and sign your name. It is a factor that has contributed to this craziness. And also, the fact that Spain has very good weather means that a lot of Northern Europeans have bought homes there. But Spain has become so expensive that they're looking for other places now, so this is not a sustainable development either.

Another parallel regime is the subprime mortgage situation. We don't actually call it a subprime mortgage sector in Europe, but Spain has got one. It's very difficult to get numbers on this. We've tried, but it's not that easy. They certainly don't collect data as well as you do here. But certain Spanish banks have engaged in very similar lending practices. The same is the case in the U.K. or in Ireland. So, as the situation rides out in the United States, we do not know what the full implications are of the subprime mortgage crisis, but if—and this is the scenario on which I started—if there is a problem, if there is an increase in credit spreads, if there is contagion to other parts of the credit market, I would be very surprised if that contagion didn't travel to those markets in Europe as well. There is absolutely no chance that we could decouple from here.

I was quite surprised when I read the German Institute's extremely optimistic economic assessment and the reports of the newspapers: they didn't even mention the exchange rate. While I don't believe we're going to have an exploding euro, as some of the forecasts last year or two years ago suggested, we've observed a strengthening now to 1.36. It's the highest historic level against the dollar. We'll probably get some more appreciation in the months to come. There is an expectation that the euro still has some way to rise against the dollar; at least, this cannot be excluded. In our experience, this usually has an effect on our export performances, after a certain delay. And I would have expected the most recent increase, from about 1.28 to 1.36, to have had an effect on growth, with some delay. So

that seems not to have been a factor in those very optimistic calculations, and I would expect that we will probably get reports of falling exports in Germany and elsewhere in Europe as of the second part of this year onward.

The typical European response is to be complacent until the moment we start to panic, and this is the case now. Since we have good economic growth, no one cares about the rising euro. You probably heard that the German finance minister, who would have been the host at the G7 summit in Washington last weekend, decided to go on safari in Africa instead, and sent his deputy in his place. Now, how more complacent can you get? It's simply not a big issue, except in France, where this is currently playing into the election campaign. Outside France, it is not an issue because politicians take the view that the economy is doing well. But once the economy starts to do worse and the euro strengthens, I can absolutely guarantee you that the Germans will be the first to raise the issue of exchange-rate management, and they may have a bit less credibility at the next G7 meeting when they try to do so.

I would like to come back to the question of reforms, and this also plays into the exchange rate. We've said, and I think Robert Parenteau was sort of saying, that there would be a policy response, obviously, if the United States adjusted its account balances, and one way to mitigate the impact would be to make the rest of the world consume more, to shift its economy from producing goods for export to consumption.

While that is true in theory, I would think that it would be very difficult, both for Germany and also for China. What are we likely to see? The German economic boom was based on cost cutting. It's quite an astonishing thing, and we should think about it: a large economy that tries to improve its competitiveness vis-à-vis its growth rate by cutting costs. Now, it worked; we've seen that there has been a pickup in economic growth. The question is, is this a sustainable strategy in the long run, when you base your economic strategy on wage moderation? Germany has actually managed in one or two of these years to have a slight fall in nominal wages. This is quite a rare thing in economics, that an economy managed to achieve a 0.1 point fall in nominal wages. The way this is possible is because of the way its wages are structured. There's basic pay, and bonuses, and Christmas pay, and so on. They were able to cut the extra bits to get a slight decrease in the average.

But there has been an extraordinarily long period of wage moderation in Germany that has now seemingly come to an end, but not really. Germany is still improving its cost competitiveness relative to others, even though there is now a pickup in wage settlements. But relative to France, Italy, the U.K., and many other countries, German wages are still growing at a lesser rate. What Germany didn't do—this is the point I was trying to make in the beginning in terms of economic reforms—was deregulate the services sector. The service economy is pretty much dead, so if we ever had to switch from exports to services, if that were what was required, it wouldn't happen. So the only thing that sustains the Germany economy, and the Eurozone economy at large, is the export sector. Once that breaks away—and under your scenario it probably would have to break away—then the question is, is this sustainable? So when the U.S. adjusts according to the structure that you have suggested, rebalancing the current account with a depreciation of the dollar—not a sharp drop, but a continued depreciation of the dollar—that scenario would make it very difficult for Germany, and for the Eurozone as a whole, to adjust in the absence of some radical reforms and services, which I don't see happening now or in the foreseeable future.

The final point is policy. Obviously, if there were a shock—say, a recession in the United States—policy could be used to mitigate interest rates. The European Central Bank (ECB) could cut interest

rates, the governments could raise deficits. That response would probably be very slow. As we talked about before, the ECB would probably not cut interest rates from the present level of close to 4 percent to 1 or less on the grounds that there was such a shock; if at all, it would cut slowly. It would probably do the right thing, but it would do it too late. Fiscal policy is very lethargic in the way it responds to these events. A fast tax cut is almost impossible in many of those economies. So we would probably see that policy would not react sufficiently fast enough, as it failed to in the last economic downturn, when fiscal policy was still procyclical and monetary policy change was too slow.

All of these factors—the spillover of stock markets, the credit markets, property, the effect on the exchange rate, the inability to shift from an export-led growth model to a consumption-based growth model, the policy responses—lead me to the conclusion that, if the American economy were to have a hard landing or go into a recession—I’m not saying this is the most likely scenario; it may well not be the most likely scenario—if that were to happen, then the Eurozone economy would not decouple, or whatever metaphor you like to use. It would have a similarly difficult period.

Thank you very much.

**JAMES K. GALBRAITH**

*The Levy Economics Institute and University of Texas at Austin*

**The Cult of Zero**



Dimitri, thank you very much. And let me say, it's a real pleasure, as always, to be here. I'm sorry that I was not here for the first day of the conference yesterday; but I am a working professor, so I had to carry out my class duties until one thirty yesterday afternoon, and then take the available plane from Austin to Albany in order to get here by eleven last night.

I have been trying to get a feel for some of the conversation that's already gone on in the conference, and I will be at least touching on it in the course of my remarks this morning. But I want to start on a slightly different note.

For 30 years I have marveled at the enduring appeal of a certain broad class of economic policy doctrines that promise very high returns on exceptionally modest intellectual

investments, policy miracles wrought by very little thought and even less work. And what I have in mind, of course, is that quartet of doctrines—monetarism, supply-side economics, deregulation, and balanced budgets—that emerged in the early 1980s as Reaganomics, and that, having proved largely unsaleable on the home market, was later repackaged for export as the Washington Consensus.

It would be beating four dead horsemen, if you can forgive an unforgivably mixed metaphor, to point out that as economic policy, none of those doctrines has survived very well into our own time. Monetarism—in the strict sense a formula for the collapse of global banking—was abandoned in 1982. And then after that, the stable money demand function on which equations rested also collapsed, and the monetarists went off to do other things.

Supply-side economics maintained the existence of significant substitution effects on the savings, consumption, and labor-leisure tradeoffs in response to the implicit price presented by taxation. The tax price of work and savings was indeed duly lowered, and nothing happened. Savings did not go up. The rich did not work any harder than they'd worked before. And in fact all that happened was, those taxes went down, and the income distribution accordingly adjusted.

My friend Bruce Bartlett, my Republican counterpart on the Joint Economic Committee 25 years ago, now writes that the term "supply-side economics" should be retired. And indeed, no doubt its work is done. But that only raises the question, do you pay a pension to a corpse?

Deregulation had a bright beginning with trucking and the airlines, but crashed and burned when it was applied to banking. The central problem, as Minskyans know, is that there is a fractal boundary between sustainable and Ponzi finance, and it's easy to slip from one to the other without recognizing, at first, that you have done so. That, combined with my father's insight that large organizations are relatively easy to subvert from within, the phenomenon that the original whistle-blower in the savings and loan cases, my former colleague at the University of Texas and now Randy Wray's colleague at the

University of Missouri, William K. Black, has christened “control fraud”—the problem of fraud committed by those who are in control. And that, of course, was the essential phenomenon of the savings and loan crisis, made possible by the rush to deregulation in the banking sector in the early 1980s. Meanwhile, as was vividly brought home to me yesterday, users of the airlines pine for those days when you traveled far less and jets flew empty.

Of the quartet, the doctrine of balanced budgets is perhaps the most enduring, in part because it faded so fast from the original portfolio of Reagan policies in 1981–82—so fast that it never shared in the general discredit of that program, but was rather taken up by the other side, by the Democrats in their always desperate search for a smidgen of economic respectability.

And then there was the actual influence in the late 1990s of the achievement of a balanced budget—indeed, a budget surplus and full employment—which persuaded many of the virtue in the old adage, *Don't look a gift horse in the mouth*. Note: that's the third equine metaphor so far in this talk, and I will try to stop.

In the Bush years, deficits and unemployment returned, catching many of the same people uncomfortably between the urge to take an easy shot at a loathsome administration and the residual awareness left over from so long ago, from education in first principles, that in a recession expansionary fiscal policy is not necessarily a bad thing.

As I mentioned earlier, the four horses of Reaganomics—excuse me, there I go again—were later rendered into an export product of uncertain edibility called the Washington Consensus, and with no happier results. In 1997, in one of his good deeds, Jeff Sachs, then head of the Harvard Institute for International Development, excoriated the IMF for making the Asian crisis far worse than was necessary by applying doctrines of monetary and fiscal rigor to a situation that required a much more Keynesian exercise of lender-of-last-resort function. In 1998, the experiment of neoliberal globalization ended in Russia. In 2001 or so, it ended in Argentina. And over the years since, Latin America has been working largely unhindered by brickbats from a somewhat chastened economics profession on a new social model with decidedly unorthodox components.

The experience of Malaysia and Korea, of Russia, Argentina, and also China—which never played by the Washington Consensus rules in the first place—leaves no doubt that successful economic policy in a postcrisis environment is a pastiche of broken rules. Which is not to say that anything goes, but it is to say that the right rules are not nearly so well defined and not nearly so well understood as the given ones. And, of course, having oil at a high price also helps.

And yet, these simple formulae have an enduring power. They grip the imagination, find a basis in our sense of the ideal, despite the fact that the theory behind each and every one of them is in tatters, that the empirical record is worse than disappointing, and that in some cases, the transmutation of monetarism to inflation targeting being an example, they retain no examined or coherent foundation whatever. One has to ask why.

My best answer is that they are all rooted in a great Mayan mystical invention, the number zero, and in the somewhat later conception that zero is the middle of the real line. Thus we are presented with a number of simple ideals that are quite easy to get hold of and rather hard to purge from consciousness: zero deficits in the public accounts, zero interference in the free market, zero taxation on savings and investment, and zero excess growth of the money supply, leading to zero or 2 percent inflation. (Two percent is not significantly different from zero.)



In 1982, in an appearance before the Joint Economic Committee, the Claremont economist John Rutledge testified: “You may have wondered why God put zero in the middle of the numbers. It’s because it’s the optimal rate of inflation.” This remarkable insight prompted the chair, Congressman Henry Reuss of Wisconsin, to intervene. He said, “To cross-examine on that, is zero also the optimal rate of unemployment?” Rutledge responded, “No, I would not say that.” Reuss: “Did God switch signals on that one?” Rutledge’s response was actually pretty good; I have to give him credit. He said, “No, God never made a target for unemployment so far as I know, in the King James version anyway.”

For the purposes of this discussion, I’ll call the primordial appeal of that line the Cult of Zero, and suggest that until we recognize it for what it is, a cult, we will be bedeviled by policymakers and also a few economists who cling to it like drowning men to bits of driftwood after a shipwreck.

Zero, of course, is not the middle of the real line; there is no middle to the real line. And once one recognizes that, the idea that a zero budget deficit—or for that matter, its fraternal twin, a balanced current account—represents a desirable or even a sustainable position in itself simply disappears. The equilibrium current account might be zero under a gold standard with no discovery, but not in a credit economy where one country supplies the reserve asset. The equilibrium in that case is simply whatever the creditor community wants to hold at a given configuration of interest rates and alternative assets. I’ll return to that point, which is, of course, central to the discussions, as I understand them, that you’ve been having, both yesterday and those coming up later on today.

But first I want to dispose of the two micro-zeros: zero taxes on saving and zero intervention in free markets. They’re even more subtle. There are various ways to deal with them, but let me try to dispose of them together. I put it to you that if free markets were perfectly efficient, then one of the things they would accomplish would be the full allocation of the return to saving to the saver, in which case saving would be a private good and not a public good. Then there would be no case for promoting it for tax or other public policy.

Conversely, if saving is desirable—and I’m not saying that it is; I’m a Keynesian, after all—then the market is underprovided, and the case for pure *laissez-faire* collapses. This can be said without even broaching the Keynesian skepticism over the virtue of private saving *per se*—and I certainly share that skepticism—or the Galbraithian case (Galbraith père, once again) against the existence of bona fide price-adjusting markets in most fields of economic activity.

That leaves the goal of zero inflation, or price stability, beloved of central bankers. Henry B. Gonzales, who was not beloved of central bankers, used to say that zero inflation is found in only one place, and that is the cemetery.

But I’ll make a different case: while actual monetarism lasted only about 18 months, maybe two years, before bringing on the debt crisis, it begat a number of consequences with which we are still grappling today and with which we have not come to grips fully, I think, as an intellectual matter: the high dollar, the revival of the dollar reserve system, the chronic and growing trade deficit—cheap imports is part of that; outsourcing is part of that—and therefore, I would argue that that two-year period was pivotal in changing the structure of the system. It engendered the permanent demise of inflation. If one looks at a chart of innovations to the inflation rate after 1982, the point is plain: there aren’t any. There are sharp movements in the inflation rate through the 1970s, and after 1982, there are none at all. Inflation as such disappeared from the system, and it has not returned, despite highly variable monetary policy—measured, for example, by movements in the yield curve—in the intervening

generations. Moreover, if one looks for evidence of inflation targeting—that is to say, of the Federal Reserve’s actually responding to evidence of rising inflation, looks for this in the statistical record—there isn’t any good evidence of that, either. So it’s one thing to say that the Fed is responding to inflation or to the threat of inflation, and another thing to find any systematic record of it.

The much better hypothesis—perhaps I shouldn’t go there, but I will—is that the Fed tightens in advance of years divisible by four when there is a Democratic incumbent, and loosens in years divisible by four when there is a Republican incumbent. One is therefore tempted to take seriously Chairman Ben Bernanke’s recent hint that the Fed actually sets about, or is going to set about, targeting not actual inflation, but expected inflation, putting another term, if you like, in between the policy and the ultimate objective, a low inflation rate.

But that, as I noted in a piece in the *Guardian* shortly after he said it, if the expectation is stable, which it appears to be, and if the target equals the expectation, it would not make sense to target anything other than a stable expectation at whatever rate the public happens to hold; then no deviation would ever be observed and inflation would drop out of the Taylor equation altogether. For practical purposes you would have a Fed not with a dual mandate, but a single mandate, which is only to target unemployment. Whatever weight it may be putting on inflation notionally, if the deviation is always zero, it has no practical impact on policy.

This would not, in my view, be a bad thing. If I could only persuade them to target at full employment rather than some arbitrarily chosen, concocted, and eternally resurrected NAIRU, or non-accelerating inflation rate of unemployment, then I could hang up my spurs as a Fed basher. And central bankers, perhaps, could hang up their spurs as inflation fighters.

At full employment, we’ve discovered, budget deficits do tend to disappear but the current account deficit does not, leaving the two issues of sustainability on which this conference has been, I think, quite rightly focused. One is the sustainability of private household debt acquisition discussed yesterday and the associated problem of asset bubbles, an obvious issue for a long time and now unfolding clearly in the lower trenches of the housing market. And the other is the sustainability of foreign acquisition of U.S. bonds and therefore of the dollar, a topic that will be taken up in considerable detail later on this morning.

I want to talk more about the second than the first. About two years ago, I wrote a piece on the dollar, titled “Apocalypse Not Yet,” and gave my view that the system, while fragile, nevertheless served the interests of its major participants, and particularly the United States, on one side, and the major creditors, Japan and China, on the other, and therefore it would not necessarily collapse of its own internal dynamics; that the greater risk was that it might be badly shocked from the outside, and the major participants would then come to see their interests in terms different from what they do presently or did at that time.

Therefore, it is not, I argued, a question of the reaction to someone’s yelling *Fire!* in a crowded theater. It is, rather, a theater that really isn’t crowded at all, one with a few spectators sitting in the front row, rather overweight, rather sleepy, and not watching the show with an enormous amount of interest. And when they hear someone yelling *Fire!*, what do they do? They look over their shoulders and smell for the smoke, and if it doesn’t seem to be an imminent disaster, they turn back around and settle into their seats, and the show will go on. In other words, it’s a system with much more inertia than we’re accustomed to thinking of when we think about the animal spirits of foreign-exchange speculators, insofar as it applies to the anchor of a global financial system—which is to say, the international dollar.



Quite recently, I noted that Clive Crook, formerly of the *Economist* and now with the *Atlantic*, makes a very similar argument, which only suggests to me that the apocalypse may be closer today than it was two years ago.

But ultimately, the issue of international unsustainability, I would suggest, does not turn on numerical questions. Just because a number is historically unprecedented does not mean that it can't remain unchanged at least for quite a while. The issue, again, has to be whether the system serves the purposes of the participants. And I want to talk for a little bit about one participant whose motivations, I think, bear a certain degree of scrutiny, and that is of course China, obviously a country with a great deal of interest in this discussion insofar as it now holds well over a trillion dollars of U.S. securities as reserves.

And the question has to be, why is it doing that? What's the point? I take the view that the Chinese are doing this not so much because they have decided to or because they want to, but because it is incidental to a larger set of purposes that they have. What is the major policy challenge facing China today? It is not something that arises on the international scene at all. It is, rather, the transformation of that country from a substantially rural peasant population to a substantially urban and substantially middle-class population, entailing a vast internal migration and an enormous project of internal construction and reconstruction, something that can only be accomplished over a very long period of time in a climate of comparative isolation from the financial instabilities of the global marketplace.

The Chinese are largely funding that construction out of their own internal savings; but the limitations of the former system of central planning have led them to place a fair amount of emphasis also on the development of export industries, not so much because they need the money, although they do use the money to a substantial extent to finance imports of food and fuel; but also because the world market is one that provides standards of quality, of practice, and sources of technology that the domestic market cannot provide. And so it makes sense to use that external market as a kind of magnet to focus a great deal of manufacturing activity in China on the goal of selling to the outside.

There's a tremendous amount of excess production in the Chinese system, partly because firms do not go bankrupt when they lose money; instead, they simply get new loans from a banking system that is itself insulated from external pressures by the fact of state ownership and by the previous system of capital control. So one has to say of a system in which quality improves, real wages rise, because the prices of wage goods are in a state of continual decline in China. In addition to that, one has the public entities—municipalities, provinces, townships, and villages—which do a great deal of public investment and housing construction, financed by their own access to these similar sources of state credit.

This is a system that serves Chinese interests so long as it enables them to maintain, in a highly dynamic environment, the social stability that almost collapsed and destroyed the regime in 1989 and that today is mostly threatened by the imbalances between the city and the countryside, causing the new government to, in some sense, take steps to lessen the urban bias of the policies of the previous government, including the reduction of taxation on the countryside and the beginning of an extension of social welfare policies to the countryside. Their preoccupation is ensuring that this process continues, and that the equilibrium of the Chinese transition does not get disrupted to the point where it becomes unmanageable from a political point of view.

As part of that, they face the problem of exchange rate management and the management of inflow of foreign capital, of which there is a great deal. You only need to go to Shanghai for it to become

clear that there is a great deal of it. You can see it in the high-rises that face you opposite the Bund. And what the Chinese Central Bank of course does is sterilize that inflow, and that is the primary source—not the only source—of the rise in reserve holdings. Another source, of course, is the expansion of Chinese textile exports as China has replaced other third world countries as a central platform for the export of textiles to the rest of the world.

The bottom line here is that anything that disturbs this equilibrium could spell trouble. One possible source of disturbance would be the ongoing process of financial liberalization, should it be taken to the point where it leads to the same phenomenon that it led to in every other case that we can look at, whether you're looking at Korea or Argentina or any other country; that is to say, financial crash. That seems to me a serious risk, and one which Chinese policymakers would be well advised to take seriously.

I had a role in advising them on this matter 12 years ago when I was acting as the chief technical advisor to the State Planning Commission of China on macroeconomic matters. And I realized that in the air, something in the static electricity of the moment, suggested to me that they were about to do something rash, and that I needed a heavier hitter than I was myself to talk them out of it. So I called up another stalwart of the Levy Institute, Bob Eisner. And I said, "Bob, have you ever been to China?" And he said no. I said, "Well, how about at the U.N. rate and business-class airfare?" He said, "Sounds good, but is there a catch?" I said, "Of course there's a catch. You have to talk them out of liberalizing the capital account." And he said, "Okay, I'll do it."

So he came over and we had a meeting with basically all of the top policymakers from the Chinese ministries, the universities, and the People's Bank. And Bob did a very effective job in persuading them that this would not be a prudent thing to do at that time, in 1995. In 1997, of course, they appreciated that having the defenses in place, the fact they had not dismantled them, protected them from being affected by the Asian crisis, and Chinese growth was able to continue for a substantial period of time. Whether it will continue in the face of the commitments they've currently made under the WTO is to my mind a very interesting question. I'm hoping that those commitments are not taken as seriously internally as they appear to be taken by the outside world. But I don't know that for a fact.

So that's one area where one has, I think, a serious risk of disruption to the dynamic stability of the system in which we are strongly implicated, because it involves the accumulation of U.S. assets, and therefore the sustainability of the current account position of the United States.

And the other large worry, the thing that sometimes disturbs my sleep, is the possibility of a political upheaval that would call into question the sustainability of the symbiotic relationship that presently exists between the United States and China. China, of course, is intent on securing, on a commercial basis, through long-term contracts, its access to external supplies of energy, of oil and natural gas; and in particular, it has a developing relationship on that score with Iran. Should there be an attack on Iran that seriously disrupted China's access to energy supplies, I don't know what the response would be or what repercussions it might have on the sustainability of global financial relations or the bilateral financial relationship between China and the United States. But it is not a risk I would want to run.

Should the Taiwanese be encouraged (something I don't think likely), provoked, inspired, or otherwise induced to consider that it was within its interests to issue a declaration of independence, that would lead to a war over the Taiwan Strait. As I say, I don't anticipate that happening, because I think the parties on both sides of the strait are really quite sensible on this matter; but if it did happen, then

that, too, could easily lead to a chain of events that would bring the present relationship that exists between the United States and China to an end.

China does not entirely control these eventualities. In fact, the two that I mentioned, it doesn't really control at all. But we know who does. So I'll just conclude on this question of financial sustainability with the inevitable and immortal words of Pogo: "We have met the enemy and he is us."

Thank you.

**FREDERIC S. MISHKIN**

*Federal Reserve Board*

**The U.S. Economic Outlook**



Thank you for inviting me to participate in this conference and offer my views on prospects for the U.S. economy. I should note that the opinions I will express today are my own and not necessarily those of my colleagues on the Federal Open Market Committee (FOMC).

We are now almost five and a half years into the current economic expansion. A slow start in 2002 was followed by three years of strong gains in real (that is, inflation-adjusted) economic activity and a substantial decline in unemployment. Initially, monetary policy was very accommodative as the FOMC focused on providing support for the recovery and avoiding an unwelcome disinflation. From early 2003 to early 2006, real gross domestic product (GDP) rose at an annual rate of 3.5 percent—well above consensus

estimates of its underlying sustainable rate—and the unemployment rate declined to 4.75 percent.

Since the spring of 2006, however, the expansion of the U.S. economy appears to have been undergoing a transition to a more moderate and sustainable pace. Although such a transition will no doubt be marked by some bumps in the road, it represents a desired macroeconomic rebalancing that over the longer run can help ensure sustained noninflationary growth. One of the fundamental factors underlying the deceleration in real activity is the lagged effect of the FOMC's removal of monetary policy accommodation between June 2004 and June 2006. Another source of the rebalancing is the substantial correction in housing markets that has been under way since last spring as the unrealistic expectations about home price appreciation that fueled the extended boom in home building have been unwinding.

Looking ahead, the most likely outcome for the coming quarters is, in my judgment, a continued moderate rate of economic expansion accompanied by some easing of pressures on resources. With inflation expectations contained, I would expect such an economic environment to foster a gradual slowing over time in the rate of core consumer price inflation. However, the actual path for economic activity and inflation could, at times, be uneven; and as is the case for all forecasts, it involves a number of risks and uncertainties on both the downside and the upside.

Turning first to the prospects for economic activity, two particular areas have emerged recently that have heightened uncertainty about the near-term outlook. The first area is housing: where do we stand in the housing adjustment, and what effect will recent developments in subprime lending have on that adjustment? The second area is business investment: how should we interpret the incoming data showing that business spending on equipment and software has been weak this year?

Regarding the housing adjustment, new single-family homes were started at an average annual rate of a bit under 1.2 million units in the first three months of this year—a pace roughly one-third

below the unsustainable peak in new construction reached in mid-2005. At the beginning of the year, the ongoing cutbacks in starts of new homes, together with a lowered but fairly steady pace of home sales, were beginning to reduce the elevated backlog of new homes for sale. However, a further weakening in sales of new homes in January and February reversed some of the progress in reducing those inventories. As a result, cutbacks in new residential construction may well persist for a while.

More recently, developments in the subprime mortgage market have raised some additional concern about near-term prospects for the housing sector. The sharp rise in delinquencies on variable-interest-rate loans to subprime borrowers and the exit of a number of subprime lenders from the market have led to tighter terms and standards on such loans. While these problems have caused undeniable hardship for many families and communities, spillovers to other segments of the mortgage market or to financial markets in general appear to have been minimal. Variable-interest-rate loans to subprime borrowers account for a bit less than 10 percent of all mortgages outstanding, and at this point the expected losses are relatively small. Moreover, because most subprime mortgages are securitized, the risks associated with these loans are spread widely. Banks and thrift institutions that hold mortgages are well capitalized, and exposures of individual banks to possible subprime losses do not appear to be large. On the whole, some borrowers may find credit more difficult to obtain, but most borrowers are not likely to face a serious credit constraint.

Indeed, I should note some positive news for the housing sector. Sales of existing homes strengthened a bit during January and February, and the Mortgage Bankers Association index of applications for home purchase suggests that demand has been fairly steady through early April. Also, mortgage rates are still at historically low levels, and mortgages to prime borrowers and fixed-rate mortgages to all classes of borrowers continue to show low rates of delinquency.

The second major area of concern in the near-term outlook, and one that perhaps could pose noticeable downside risks, is business investment. Real outlays for new equipment and software weakened in the final quarter of 2006, and the recent data on orders and shipments of nondefense capital goods suggest that the softness in demand has extended into early this year. Part of the weakness can be clearly traced to a decline in demand for investment goods that are used heavily in residential construction. In addition, demand for goods used by the motor vehicle industry also has softened of late. But, demand for other types of non-high-tech business equipment also appears to have slowed recently, raising more fundamental questions about business views on the current and prospective environment for capital spending.

To be sure, the pace of output has moderated, which typically would lead to some deceleration in capital spending. But the magnitude of the recent pullback seems to be greater than would be expected. Adding to the puzzle has been a weakening in demand for non-high-tech equipment even as financial conditions for investment have remained generally favorable. In particular, business balance sheets are strong, and although profits have slowed, profit margins remain elevated. Interest rates and credit spreads are relatively low, and firms appear to have ample ability to raise funds at a reasonable cost.

The unwillingness of businesses to invest might be due to concerns about the prospects for long-term productivity growth and the expected rate of return on capital investment. Moreover, businesses may be anticipating a more pronounced deceleration in sales than would be consistent with the moderate expansion that I am expecting. Respondents to the Blue Chip Economic Indicators survey suggest

that the recent reluctance to invest reflects greater uncertainty about the outlook for sales and earnings. If so, the continuation of a moderate economic expansion is likely over time to restore confidence and lead to a firming in business investment.

Not all of the recent news on business spending has been to the downside, however. Demand for high-tech equipment appears to have picked up early this year after leveling off in the final quarter of 2006. Demand for computers, which was likely boosted by the introduction of the Windows Vista operating system, seems to be advancing at a healthy pace. Technological innovations—such as circuitry that boosts computer performance and lowers energy consumption—appear to be generating demand to upgrade equipment in data centers. In addition, major U.S. cable companies are forecasting a step-up in capital spending, and telecommunications carriers are planning a further expansion of fiber-optic networks.

Although questions related to the prospects for housing and business spending appear to have widened the range of uncertainty about the near-term outlook, developments in other areas appear to support a continued moderate rate of economic expansion. Monthly gains in employment, while down some from last year's pace, remain solid; the average monthly increase in nonfarm payrolls over the first three months of this year was about 150,000, compared with about 190,000 in 2006. To date, job cutbacks have been centered in industries related to residential construction and manufacturing, with no indication—either from the monthly labor market reports or the weekly unemployment insurance data—of widening weakness.

In addition, the incoming information on consumer spending has been consistent with a moderate pace of demand. The steady labor market has been generating income; and despite the ups and downs in energy prices, real disposable income has been trending up at about a 2.75 percent rate since early 2006. In addition, household credit quality remains generally favorable. As is the case for prime mortgages, delinquency rates on consumer loans are low. And despite the deceleration of house prices, the ratio of household net worth to disposable income is still elevated.

Economic activity also should be supported by fiscal policy, which is likely to remain mildly stimulative this year. At the federal level, that stimulus is likely to continue to come from defense spending rather than from other outlays, which are expected to change little in real terms. Although defense outlays tend to be volatile from quarter to quarter, the available and expected appropriations should keep real defense spending on a moderate uptrend. At the state and local government levels, the economic expansion in recent years has broadly restored fiscal health. Many of these governments have been spending at a moderate rate while also building their rainy-day funds, and this year they appear poised for further hiring and more construction spending.

On the international trade front, recent readings on economic activity abroad have been positive, which suggests that the demand for U.S. exports of goods and services will continue to be solid. Prospects for further economic expansion in Europe and Japan appear good in the near term. And despite indications of moderation in some countries, the overall pace of economic activity in emerging economies, including China, appears to be strong.

Turning now to the inflation outlook, in February the 12-month change in core personal consumption expenditure (PCE) prices was 2.4 percent, and in March the year-over-year change in the core consumer price index (CPI) was 2.5 percent. Each of those readings was higher than the corresponding

result for early 2006. Increases in market rent and in owners' equivalent rent account for much of that acceleration. Prices of consumer goods in both the PCE and CPI measures have been relatively flat for the past two years, while prices of services other than energy and shelter have been rising at about a 3 percent rate. My forecast of a gradual slowing in inflation reflects my view that making further progress in lowering inflation is desirable. Although I expect that core inflation will drift down, I recognize that achieving further reductions in inflation may take time. In the near term, the recent rebound in prices for gasoline and other petroleum-based goods is likely to put upward pressure on the costs of many nonenergy goods and services. Moreover, the evolution of shelter costs, which have boosted core inflation over the past year, is difficult to predict. Here, my expectation is that as the supply of rental units increases and the market for owner-occupied housing stabilizes, the rise in rent will slow.

Other concerns about prospects for inflation are related to developments on the supply side of the economy. Since last fall, the jobless rate has been hovering around 4.5 percent, a relatively low level by historical standards, and it fell to 4.4 percent this past month. With the labor market that tight, I am not surprised that our business contacts have been reporting shortages of workers in some occupations—both skilled and unskilled, depending on the region—and some associated wage pressures. To date, various measures of worker compensation are giving mixed signals on whether wages are accelerating. The narrowest measure, the average hourly earnings of production or nonsupervisory workers, shows a noticeable pickup in wage inflation from 3 percent in 2005 to around 4 percent more recently; another measure, hourly compensation in the nonfarm business sector rose in 2006 at close to 5 percent, also faster than a year earlier. But the employment cost index has been rising at a moderate 3 percent rate for the past two years.

Whether a pickup in nominal labor compensation will lead to upward pressure on inflation will depend on several factors. Importantly, an acceleration in compensation might be offset by higher labor productivity; indeed, during most of this expansion, strong gains in labor productivity have checked the rise in unit labor costs. And, with profit margins wide, businesses might accommodate increases in labor compensation without passing them on to consumers in the form of higher prices. In these circumstances, gains in nominal compensation for workers would translate into gains in real compensation.

So how is labor productivity doing? During the first three years of the current expansion, output per hour in the nonfarm business sector rose 3 percent per year; in the past two years, it has decelerated to 2 percent. I suspect that this slowdown does not represent a fundamental weakening in the longer-run trend, but is rather a normal cyclical transition from an above-trend rate of increase to a more sustainable rate. Of course, I also recognize a potential downside risk to the outlook for productivity, especially given the weakness in business investment that I noted earlier. Nonetheless, averaging through the entire expansion to date, the underlying rate of productivity advance still seems to be close to the 2.5 percent rate that has prevailed since the mid-1990s.

More fundamentally, I believe that long-run inflation expectations remain a key determinant of the path of inflation. But what are the current expectations for long-term inflation? Unfortunately, that is not an easy question to answer. The results from the Survey of Professional Forecasters, readings on household opinion such as the Reuters/Michigan survey, and the spread between standard Treasury securities and Treasury inflation-protected securities—taken together—suggest that long-term inflation expectations are currently around 2 percent, although this guess is far from certain.



Given my estimate of the current level of long-run inflation expectations as well as the likelihood of some easing of resource pressures in labor and product markets, I expect that core inflation will slow to around 2 percent over the next couple of years. Although I believe that inflation expectations will play a primary role in determining the course of inflation, I want to emphasize that neither economists nor policymakers understand the expectations-formation process very well. However, one aspect of expectations formation that we have come to regard as crucial is the credibility of monetary policy. Consistent with its dual mandate to foster maximum sustainable employment and price stability, the Fed must therefore continue to respond aggressively to shocks that have potentially persistent adverse effects on both inflation and real activity. And we need to monitor long-run inflation expectations closely to avoid losing credibility with the markets.

In closing, I want to emphasize that the Federal Reserve will continue to play its part in ensuring the longer-run health of the economy by implementing policies designed to achieve its dual mandate. As you know, since last June the FOMC has left its target for the federal funds rate at 5.25 percent. I recognize that uncertainties surrounding the economic outlook have increased recently, and I remain concerned that the persistence of inflation at the recent elevated rate could have adverse consequences for economic performance. However, I continue to believe that the current stance of monetary policy is likely to foster sustainable economic expansion and a gradual ebbing in core inflation. As always, future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth as implied by incoming information.



## Sessions

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### SESSION 1

#### *The State of the U.S. and World Economies*



Lakshman Achuthan, Robert W. Parenteau, and Dimitri B. Papadimitriou

**MODERATOR:**

**DIMITRI B. PAPANIMITRIOU**

President, The Levy Economics Institute

**LAKSHMAN ACHUTHAN**

Economic Cycle Research Institute

**ROBERT W. PARENTEAU**

RCM

Although there is sustained global expansion and the world's major economies are growing in a synchronous fashion, **LAKSHMAN ACHUTHAN** also recognized the presence of global imbalances. He stated that we are in the middle of a very big shift in economic history: the entry of India, China, and the former Soviet bloc into the global market economy. While some new entrants to the global capitalist system are prospering, the losers seem to be the vast middle classes in America and Europe, where job security is a real issue. In Achuthan's view, we have returned to the unemployment situation observed by Jerome Levy a century ago, and we still have not figured out how to maintain full employment and a favorable balance of trade.

Achuthan noted that the late Senator Daniel Patrick Moynihan stated that our greatest accomplishment in the 20th century was taming the business cycle (declining cyclical volatility). Problems

persist, however, such as an inability to predict recessions so that policymakers can take preemptive action. He also noted that forecasters systematically make large errors relating to economic cycle turning points even though the leading indicator data relating to turning points is known. Typical leading index approaches fail because they are oriented toward the past, with underlying assumptions that cyclical leading indicators vary by country and time period. However, there is a viable alternative to data fitting that succeeds at predicting recessions in real time.

The first cyclical leading indicator data in the United States was collected about 1938 at the request of the Secretary of the Treasury. In 1950, Jeffrey Moore constructed the first list of leading indicators (i.e., sensitive commodity prices, average manufacturing workweek, commercial and industrial building contracts, new incorporations and orders, housing starts, stock prices, and business failure liabilities) in an attempt to understand the basic drivers of the business cycle. Using data before 1938, Moore found that the average lead before a peak or trough was four months. Achuthan subsequently found that the same leading indicators that correctly predicted the turning points in the post–Civil War period also predicted the turning points in the second half of the 20th century in spite of structural changes. Moreover, his model held for 10 major economies abroad, including the G7 countries and structurally diverse economies such as Germany, South Korea, New Zealand, India, and China.

Achuthan’s long leading and coincident indices for the United States from 1919 to the present showed that a recession is triggered when weaknesses in the endogenous drivers of the business cycle combine with an endogenous shock to the economy. For example, the market crash in 1987 was not coincident with collapsing indices, as the cyclical vulnerability was not present to knock the economy into recession. In 1990, however, the indices turned down and were followed by a shock—Iraq’s invasion of Kuwait—that triggered a recession. Since the leading indices are not turning down in 2007, a recession or hard landing forecast right now would be crying wolf. The way to stop crying wolf is to resist the temptation to forecast by analogy (i.e., the present resembles earlier periods) or to proclaim a new paradigm or parameter drift.

Using growth rates to highlight economic slowdowns rather than recessions, Achuthan showed that the long leading index leads the weekly leading index by about one quarter on average, and that the weekly leading index leads the coincident index by a couple of quarters. There is a sequential relationship in the economic cycle when there is a pronounced, pervasive, and persistent decline or upturn in the long leading index. Presently, the coincident index appears to have bottomed out, while the leading indices have turned upward. Achuthan hoped that his work would help policymakers to smooth out the business cycle.

**ROBERT W. PARENTEAU** observed that Minsky and John Maynard Keynes are largely ignored by the economic mainstream, yet they diagnosed systemic vulnerabilities both theoretically and in real time, and designed institutions and proactive policy responses that would improve the economic system. According to Minsky, there is an endogenous dynamic that transforms an economic system from a robust financial structure into a fragile one. Parenteau cautioned not only against crying wolf but also against dealing with fairy tales (the Goldilocks economy) and “investment porn” (passive institutional investments in indexes rather than companies).

Four key macrofinancial questions were posed to determine if we are approaching a “Minsky moment” (an episode of financial instability and recession): (1) Is U.S. household deficit spending on a sustainable trajectory? (2) Is the U.S. economy headed for a soft or hard landing? (3) Is the new financial architecture an efficient risk distributor or an incentive distorter? and (4) Are intelligent responses based on coherent or incomplete macro and policy frameworks? The first question is answered by focusing on household financial imbalances in terms of conventional debt trap equations. The second involves an examination of six decoupling arguments that supports the soft-landing camp. In terms of the third and fourth questions, Parenteau noted that we have replaced a bank-centered financial system with an institutional investor-oriented system, and that the Levy Institute is one of few places where there is a coherent policy framework concerning the macro issues.

U.S. household sector expenditures are at a secular 50-year high despite the decay in the household income share of nominal GDP. The household sector was a net saving sector historically but is now a deficit spending sector, in spite of the bursting of the New Economy bubble. Parenteau reviewed the probability of perpetuating deficit spending (e.g., selling existing assets or issuing new liabilities) to determine whether this pattern was sustainable. According to Evsey Domar’s debt-trap equation, there is a condition to support an explosive rise in the household debt-to-income ratio (e.g., strong appreciation of assets and the replacement of one asset bubble with another), but since the housing boom has gone bust, the household deficit spending trajectory is unsustainable. The real rate of home price appreciation seems to have mattered a lot to the household financial balance, and we are facing a dramatic reversal of this balance.

Parenteau outlined and debunked six decoupling arguments by the consensus that support the view that the U.S. economy is headed for a soft landing: the decoupling of (1) housing construction from home prices, (2) the housing market from housing-related finance, (3) consumer spending from housing, (4) capital spending from the consumer, (5) corporate profits from expenditure growth, and (6) the global economy from U.S. economic momentum. He noted that home price appreciation and housing starts have already peaked, and only one-third of the normal correction related to the housing share of the economy has taken place. Therefore, it is premature to expect that housing will not be a drag on the U.S. economy in the second half of 2007. Moreover, loan delinquency rates have risen for both subprime and prime adjustable rate mortgages. Furthermore, the housing slowdown has discouraged homeowners from using their homes as ATM machines.

Parenteau also noted that there has been a deceleration of the nominal retail sales growth rate (from almost 8 percent to 2.5 percent) and a decline in sales tax receipts, and the retail sector is already shedding employees. These profiles are remarkably similar to those prior to the last recession, and it is undeniable that the consumer is pulling back. There is no delinkage between consumer expenditures and housing construction, and the household financial balance bears a unique resemblance to mortgage equity withdrawals. In addition, CEO confidence indicators are declining; companies are shrinking their share base (and raising their own share prices), and are unwilling to engage in capital spending. We are on the verge of negative year-over-year retail sales and industrial production, which is consistent with the profile of the last recession. With both capital and consumer spending decelerating, it will be hard to avoid a hard landing.

Although profit margins are near all-time highs, Parenteau pointed out that they tend to increase when the personal saving rate out of wages falls, so profit margins are tied to household deficit spending. He also pointed out that there is a mistaken correlation between the fiscal and trade balances. The real twin of the trade balance is the household financial balance (i.e., household purchases of goods from abroad).

Parenteau noted both the qualitative change in the financial structure (the new financial architecture) and the corruption of the private credit allocation mechanism. There has been a redistribution and repackaging of risk, and a reduction of incentives for credit analysis. Although there is a very efficient risk-distribution system, there is a very inefficient risk-estimating system. For example, the securitization of mortgage loans by banks reduces their incentive to be gatekeepers with respect to credit (i.e., “Not on my balance sheet”) and increases their interest in volume and fees. Moreover, the diversified nature of securitized debt packages reduces the incentive of institutional investors to analyze the creditworthiness of individual loans. Furthermore, the proliferation of credit default swaps allows further distribution of default risk away from the credit originators. In this world, no down payment, low documentation, and option adjustable rate mortgages can proliferate.

Parenteau observed that financiers are overreliant on quantitative methods and suggested that seemingly hedged positions are really unhedged, and that there has been an increase in the overall incentive to take risk. He concluded that the changing asset class correlation structure appears ripe for financial instability. Too much capital is chasing too few deals. An excess of liquidity stems from the broker-dealers and the investment banks through leveraged instruments, not from the Federal Reserve. The Fed, however, introduces an element of moral hazard when it pursues asymmetric policies toward asset bubbles and does not help to contain the risk of the new financial architecture. In Parenteau’s view, we are in fact entering a Minsky moment, and if a recession unfolds, the easing of interest rates by the Fed will be less effective this time around. We will have to rely on a fiscal solution and encourage domestic demand-linked growth in the rest of the world, but this kind of growth is not on the agenda. The Levy Institute macro-model framework is one of the few coherent ways that is available to consider what policy directions are needed to contain the damage.

## SESSION 2

### *Monetary Policy in the U.S. Economy*



Torsten Slok



Robert Z. Aliber

#### **MODERATOR:**

#### **GREG HANNSGEN**

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#### **TORSTEN SLOK**

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#### **ROBERT Z. ALIBER**

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Drawing on a project with colleague Peter Hooper, **TORSTEN SLOK** presented an analysis of inflation in terms of trends and volatility, the implications of inflation stabilization, and the causes of the great inflation and disinflation eras. He noted that the Phillips curve has broken down and that the output gap has become less important. He also noted that the world is in a low inflation environment, which is creating surprise bubbles that require a state reaction. The question is whether the low inflation environment is permanent, or could the great inflation era arise again?

Slok reviewed the history of inflation and observed that it has been outside the Fed's comfort zone (between 1 and 2 percent year-over-year) since 2004. He also observed that U.S. inflation has been much higher in the past, and that global inflation trends and volatilities have fallen dramatically since the 1980s. Low inflation and volatility matter in terms of the anchoring of expectations, the inflation risk premium, and real interest rates. Inflation expectations have been anchored at a low level for

the past decade. Real interest rates have also trended lower since the 1980s. However, the economic growth picture suggests that interest rates should go down, but the inflation picture suggests that interest rates should go up.

The U.S. consumer has been very resilient. The personal saving rate continued downward in spite of a recession and in response to an increase in the household wealth-to-income ratio. However, what would happen if the saving rate returned to historical levels? Slok expected that the wealth effect would not be as severe as the turnaround in 2000, so he was not worried about the well-being of the U.S. consumer.

The causes of the great inflation and disinflation eras were accommodative monetary policy in the face of inflationary demand and supply shocks, combined with monetary tightening and behavior consistent with rules-based policy. Slok noted that deviations from the standard Taylor rule over time indicated major policy mistakes in the 1970s, but that monetary policy has become better at understanding the economy, particularly over the last 10 years. A review of the trend core PCE inflation and policy rate deviations from the Taylor rule suggests that these deviations (and policy mistakes) were related to the trend in inflation.

Rising inflation and volatility could come from political, demographic, and global factors. Barney Frank, an opponent of inflation targeting, believes that the Fed should hold interest rates down to allow wages to rise. This position is an echo of the Wright Patman era (1964–75) when interest rates were held at a low level and employment increased, but inflation went up. However, Federal Reserve Chairman Ben Bernanke has gotten Frank to acknowledge that real rather than nominal wages matter. Slok believed that Bernanke might settle for something less than a formal inflation target.

Slok outlined the implications of the aging baby boomers that could unanchor inflation: slower growth of the labor force and potential output, a massive increase in Social Security and health care costs, and higher interest rates. There will be huge fiscal implications, such as rising medical costs, that will weigh on the budget and eventually affect inflation. In addition, global factors could cause the inflation trend and volatility to increase. These factors include the growing trade imbalances between the United States and other countries, the rapidly growing U.S. net external debt, China's soaring foreign exchange reserves, and higher inflation and bubble (asset and stock) markets in China. A reversal of the globalization trend would generate even higher inflation in the United States through import prices. Although U.S. import prices from Asia have restrained inflation, the effect is small and diminishing.

In Slok's view, the globalization era that provided inexpensive products from Asia and had huge benefits for U.S. inflation is probably over. He concluded that inflation and disinflation are monetary phenomena, that the current inflation trend and volatility are near a low point, that the longer-term risk for inflation and interest rates is largely to the upside, and that the current low and stable inflation expectations do not afford complacency at the Fed.

**ROBERT Z. ALIBER** noted that the last 35 years have been the most tumultuous in monetary history. He proceeded to review the sequence of asset price bubbles and financial collapses from the point of view of Hyman P. Minsky. The period included the collapse of many national banking systems, the widest swings in exchange rates, the greatest increases in price levels, and much larger deviations from purchasing power parity under floating as compared to pegged currencies.



Aliber outlined four asset price bubbles: Japan, as well as three Scandinavian countries, in the 1980s; Thailand and associated countries in the mid-1990s; U.S. and other global stocks in the latter half of the 1990s; and residential real estate in most Anglo-Saxon countries, plus Ireland and Spain, today. The Japan bubble affected Hawaii, Korea, and Taiwan through the income transmission mechanisms, and Japanese banks set up branches and subsidiaries in the United States and Europe in order to buy loans and avoid pressures toward appreciation of the yen. The Thailand bubble ended with the Asian financial crisis in 1997 that was the flip side to the Asian financial bubble. The U.S. bubble pulled up stocks in most of the OECD countries, but the timing and magnitude of the residential real estate bubble has not been led by the United States.

Japan imploded at the same time as the consolidation of Brady bond bank loans to developing countries, so the traditional recession there did not result in depreciation of the yen. Rather, the buildup of industrial capacity in Japan during the bubble period resulted in a shift to the right of the export supply function, an appreciation of the yen, and a hollowing out of the Japanese economy when Japanese firms began to source in South Asia. The implosion of the Asian bubble and the depreciation of Asian currencies diverted funds into the United States from abroad. According to the accounting identity, the adjustment was in terms of consumption spending (the invisible hand) that led to an increase in U.S. asset prices and a reduction in the U.S. saving rate. Thus, the future adjustment process that will occur when the U.S. economy slows is a frightening one, Aliber said.

Three things operating in the U.S. residential real estate bubble included the change in Fed policy (negative real interest rates), innovation in the mortgage market, and speculative purchases. In terms of the global phenomenon in residential real estate, the generic features include a high rate of economic growth and a current account deficit (except Japan). Countries with an asset price bubble have been importers of foreign funds, which increase asset prices and decrease the current account balance. The output effects of the asset price bubble in British housing are actually felt in Spain, said Aliber.

Until recently, the uniqueness of the last 35 years includes declining real interest rates, much longer economic expansions, and less frequent recessions. One explanation for longer expansions is that all countries with increasing current account deficits had appreciating currencies, which increase the supply of goods and put downward pressure on domestic prices. Another explanation is that lower inflation in a period of floating exchange rates allowed central banks to be more relaxed in their efforts to maintain a very low price level than in a period of pegged exchange rates. Aliber noted that almost all bubble episodes, including the developing-country debt crisis in the 1970s, involved Ponzi finance. He therefore questioned why current lenders have failed to think about the adjustment process, since most endgames result in a hard rather than a soft landing.

### SESSION 3

#### *Financial Instability in a Global Economy*



W. Ray Towle and Jan A. Kregel



L. Randall Wray

#### **MODERATOR:**

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##### **KORKUT A. ERTÜRK**

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##### **L. RANDALL WRAY**

Senior Scholar, The Levy Economics Institute, and University of Missouri–Kansas City

**KORKUT A. ERTÜRK** noted a systemic relationship between the economies of the United States and Asia. He also noted that it was difficult to determine causation related to the accounting identities. From the point of view of the surplus side of sector-balance equations, the collapse of investment during the Asian crisis was caused by the private savings glut, and the trade surpluses reflected the private sector surpluses. The Asian countries ran trade surpluses as the ultimate protection against the threat of another currency crisis, and these surpluses were the source of the funds directed toward the United States. These imbalances created an endogenous system of liquidity and reduced the fear of a currency attack, which was an important constraint on a rise in domestic spending.

A rise in domestic spending in Asian countries can take the form of more private investment, an increase in consumption, or a wave of investment and infrastructure expansion. Ertürk hypothesized



that the glut of savings would turn into a glut of dollars as the trade surpluses disappeared. Using Kaldor's two-sector construct of a world economy (a balance between manufacturing goods and raw materials), along with liberalized capital flows, he expected an unsustainable situation and instability because of imbalances in capital flows, currency valuations, and growth rates. A stable adjustment is questionable because monetary policy and banks in the United States are becoming irrelevant in terms of the credit creation mechanism. The new liberal regime was kept intact because of its deflationary bias with respect to developing countries and the fear of a currency crisis. However, excess liquidity has reduced the possibility of a currency crisis, so the buildup of reserves in Asian countries has outrun its usefulness. Therefore, an important constraint against a domestic spending increase in Asia is becoming less of an issue. The question is, which component of domestic spending will increase?

If trade surpluses disappear, then the financial climate in the United States will worsen because of inflationary pressures resulting from a depreciating dollar, the difficulty in financing the current account deficit, and the higher interest rates necessary to counter the inflationary pressures and attract foreign savings. This is not a winning scenario, said Ertürk. He recommended something in the form of special drawing rights or a new basket of currencies as the reserve currency to replace the dollar. This approach, if taken now rather than when things begin to unravel, would be in the best interests of the United States because it would give this country more power and input in terms of the details of the arrangement.

**JAN A. KREGEL** used Hyman P. Minsky's framework to analyze current global imbalances and to determine the probability that the imbalances would be corrected in the medium term. He noted that the stability of the financial structure derives from the balance sheets of firms, banks, households, and the rest of the world, and that imbalances pertain to how the rest of the world interacts with the United States. The policy actors in the system are the balance sheets of central banks and governments. Kregel also noted that different balance sheets have dominated the international system since the time of Minsky. Households and the rest of the world have become more important, and there has been a marked difference between assets and liabilities. He further noted that Minsky's financial profiles are really profiles of the expectations of bankers, investors, and households about incomes and liabilities, and that there has been a shift toward a speculative Ponzi accounting system.

Kregel reviewed the statistical accuracy of balance sheets and the new financial architecture, and observed an uncertainty about the financial structure or exposure of firms. Moreover, banks no longer have assets, and there are no measures that accurately account for leverage and exposure. The Fed has virtually no way of influencing the banks and the amount of credit generated in the system, except by influencing the expectations of private capital markets. In addition, balance sheets can change radically as a result of exchange rate fluctuations, and there is uncertainty about the accuracy of government agencies accounting for the effects of transnational corporation subsidiaries. Furthermore, a large proportion of knowledge-based goods (a major U.S. export) never gets recorded in the balance of payment statistics (e.g., chip-producer designs transferred over the Internet). In sum, we really do not have a clue what our position is in terms of international imbalances, said Kregel.

Currently, balance sheets tell us that finance dominates domestic production. However, it is obvious that U.S. corporations are investing outside the United States and that international finance dominates trade today. Chinese households are engaged in excess saving, while U.S. households are engaged in excess

consumption. After the Asian crisis (1996–97), there was a very strong expansion in net capital flows into the United States in the form of foreign direct investment (FDI) and purchases of government securities from Asia and Latin America. After dollar devaluation against the euro, the Europeans returned and bought U.S. corporations (a factor that stabilizes the exchange rate).

In terms of medium-term stability, Kregel made three basic points: (1) imbalances are normal; (2) they are part of the development process; and (3) they are almost always between countries at different levels of development. Current imbalances, however, are different in terms of their much larger size (due to capital account liberalization) and in terms of their geographical or horizontal distribution of production. They are also different because of various development policy decisions or preferences between countries, so it is unlikely that market mechanisms or exchange rate adjustments would eliminate imbalances. Rather than financing development in terms of positive net resource flows (from developed to developing countries), negative net resource flows have been the dominant pattern throughout the postwar period.

Net negative resource flows (trade surpluses) can be generated by positive rates of expansion or debt deflation. The developing countries in Asia and Latin America, as well as Europe, have moved toward negative net resource flow policies in order to support domestic employment. Stability in China depends on extremely rapid employment growth, while Europe has chosen price stability in the form of export-led growth by compressing domestic demand and wages. There is mutual interest in Europe, Asia, and the OPEC countries to continue export-led policies (and excess savings) and, in essence, to vendor-finance their own exports (i.e., lending abroad in order to maintain their export surpluses). Otherwise, China loses political control, Europe stops growing, and the United States falls into recession.

A review of the so-called bilateral balance between China and the United States distorts the problem. Since China has an increasing deficit with the rest of Asia, eliminating the U.S. deficit with China would directly impact China's ability to import from the rest of Asia. Moreover, the United States has a deficit with Europe comparable to that with China, and it has imbalances with virtually every region. Since trade flows are determined by financial flows, any adjustment has to come from finance. And since most exchange rates are fixed (with the exception of Japan, Europe, and the United States), an exchange rate adjustment will have to occur between the U.S. dollar and the euro. The potentially negative impact of euro appreciation on the foreign production earnings of European companies means that they, along with Asia and Japan, will have to vendor finance and that their current accounts will become dominated by debt service repayments.

According to the tenet of Evsey Domar, all negative net resource flow policies are Ponzi financing schemes. Since all regions continue to support the U.S. trade imbalances, fragility increases as the rate of increase of financial outflows falls below interest rates. Eventually, the system shifts from fragility to instability and the risk increases that any small change will collapse the system. Although the United States will always be able to meet its external claims (because U.S. capital flows are denominated in U.S. dollars), it may not be able to do so at a stable exchange rate. The interesting thing about a depreciation of the U.S. dollar is that it improves the U.S. balance of payments and encourages more FDI flows. Rather than a sharp collapse in the dollar, there may be a sharp disruption in the balance sheets of both households and financial institutions operating in the global market.

**L. RANDALL WRAY** summarized one of Minsky's main themes: Innovation is endogenous; it responds to profit opportunities and stretches liquidity, which increases fragility. This process leads to intervention by institutions that constrain endogenous instability by acting as ceilings and floors. In the 1960s and 1970s, Minsky added three important concepts to his work: (1) the financial theory of investment and the Keynesian investment theory of the cycle; (2) the Kalecki view of profits (investment creates profits); and (3) the financial instability hypothesis (apparent stability changes expectations and behavior in a way that generates fragility). The policy problem is to devise institutional structures and measures that attenuate the thrust to higher inflation, more unemployment, and slower improvements in the standard of living, without increasing the likelihood of a deep depression. The 1975 and 1982 recessions did not become depressions because of the role of big government and the Treasury (i.e., the budget deficit helped to maintain income and profits).

Wray extended Minsky's approach to more recent examples where the growth of government drove profits and expansions without investment (the budget surplus of the Clinton years was an anomaly and driven by private sector deficits). His current work focuses on money-manager capitalism and the real estate bubble, which resembles a Minsky and Ponzi finance event. Having learned from the savings and loan fiasco, banks and mortgage lenders sell securitized mortgages in order to earn the fee income and avoid having mortgages on their books. Some of the financial innovations and new frontiers in lending include subprime, interest-only, and home equity loans. The result is that the mortgage security market (\$6.5 trillion) is larger than the Treasury market. Debt is growing many times faster than income, and, despite historically low interest rates, the financial obligations ratio will climb rapidly as mortgages are reset. The explosion of debt arises as innovations increase the availability of credit (which increases asset prices) and "good" managers take on more debt. The Clinton boom and the shallow Bush recession led to a revised view of economic growth, from stability to a virtuous cycle of innovation plus competition, leading to rising leverage ratios and increasing credit availability and asset prices, which fuel more innovation.

Bernanke implies that the world is more stable due to better monetary management, globalization, information technology, rising profits, and declining corporate leverage, as well as securitization and derivatives that ensure against risk. According to Wray, this view is a radical suspension of disbelief that "it" (the Great Depression) can happen again and that increased leverage ratios are not risky. This view is based on low volatility, narrow corporate bond spreads, declining business failures, underpriced stocks, the resurrection of Irving Fisher's tenets that asset prices can only go up, and the campaign to increase competitiveness and efficiency by reducing regulation at the peak of Ponzi financing.

A few cracks are beginning to appear in the system: tightening credit for mortgages, rising mortgage delinquencies, and falling house prices. Although things are different today, Minsky's agenda for reform is still worth considering, said Wray. The solution is not free market ideology, more competition, and less regulation. The current macro challenges are a very large trade deficit that has to be matched by budget deficit injections, growing inequality, a continuing budget shift toward transfers (e.g., Social Security), and barriers to work. There is a fiscal squeeze because the growth of tax revenue is climbing at a rate that is three times faster than income, and this channel is draining more income out of the already burdened household sector.

Minsky argued for a high wage and consumption economy, but we are moving in the opposite direction, observed Wray. An aging society, rising defense spending, consumption financed by debt, and high investment increase markup and inflation. That is why Minsky wanted to shift income to wages and promote high consumption, because these things are not inflationary. For example, eliminating the payroll tax and taxes on seniors who want to work would be deflationary. Moreover, the government, as the employer of last resort, would offer a perfectly elastic demand for labor at a minimum wage by hiring everyone who could not get a job in the private sector.

Wray concluded that the U.S. private sector is fragile and Ponzi, and he noted that it does not matter who owns the debt (domestic or foreign creditors). The U.S. government cannot be Ponzi because its debt is in floating dollars and can always be serviced. There is a need to allow retrenchment of the private sector toward a balanced budget and perhaps toward net positive savings—that is, changing the stance of fiscal policy to allow for a more relaxed budget deficit. Since the United States continues to run a significant current account deficit, it needs a budget deficit that offsets the deficit in the current account and allows the private sector to balance its account or run a surplus in order to restore positive net financial wealth.

## SESSION 4

### *The Macroeconomic Prospects for the U.S. Economy*



James E. Glassman, Robert J. Barbera, James W. Paulsen, and Ajit Zacharias

#### **MODERATOR:**

#### **AJIT ZACHARIAS**

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#### **JAMES W. PAULSEN**

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Conventional investment wisdom over the past few years has assumed a major economic slowdown, but the world economy continues to grow in excess of 5 percent per year. **JAMES W. PAULSEN** outlined four exceptions related to the current recovery cycle: (1) excess liquidity won't go away; (2) bond yields won't go up; (3) stock prices are up but earnings are rising faster than stock prices; and (4) this is a G25 rather than a G7 recovery (a new world order). We have never produced a recession without taking away excess liquidity and raising bond yields, Paulsen said. Moreover, the most unique aspect of this recovery is that it has not produced confidence.

In the past year, housing and automobiles made up 9 percent of the U.S. economy and declined by 10 percent in real terms. These items have been getting 99 percent of the media attention while the remaining 91 percent of the economy has been accelerating, with an annual real GDP growth rate of 4.3 percent. By the fall, the Fed will either ease or tighten interest rates,

depending upon what happens with housing. The evidence suggests that housing has bottomed out, Paulsen said, so in his view the Fed will tighten.

The housing news is about what has already happened. The reason people are worried is that housing and real consumption spending were in lockstep with each other from 1970 to the mid-1990s. It is possible to liquidate housing without lowering consumption because these two indicators have been negatively correlated in the last decade. Both housing and jobs were once correlated with consumption, but housing is no longer correlated because of mortgage equity withdrawals, which have absolutely no relationship with personal consumption. Thus, there is no reason to suspect that the decline in net equity withdrawals will kill consumption, although it does appear to be dragging down housing. This could lead to a unique situation where housing is liquidated without lowering consumption.

Fed policy can do three main things: raise short-term interest rates, hope to raise long-term interest rates, and restrict liquidity. Since the Fed has pursued only one of these courses (raising short-term interest rates), monetary policy can still stimulate this economic cycle. Moreover, short-term interest rates remain comparatively low (5.25 percent), and they are not overly restrictive. According to Paulsen, the Fed continues to raise interest rates until something blows, so the catch is that the system has to experience some pain before any gain is realized (e.g., a rise in 10-year Treasury bond yields). He noted that there have been some exceptions to the relationship between the growth of nominal GDP and liquidity. In the 1970s, for example, liquidity grew much faster than the economy and resulted in the biggest inflationary blow-off in U.S. history. In the 1980s and 1990s, liquidity grew slower than the economy and resulted in the most hyperactive price-competitive corporate environments since the Great Depression.

In the past decade, liquidity has been growing faster than the economy. Prices are rising and chasing little yield. The real risk is an overheated situation because of our monetary stance. Although there is unlikely to be an inflationary blow-off comparable to the 1970s, there is a massive resource bind around the globe, which could lead to a brief yet nasty cyclical inflationary period in the United States. Paulsen noted that there has been significant policy stimulus in terms of growth in the U.S. money supply, a decline in the trade-weighted dollar index and the 10-year Treasury bond yield, and an increase in the mortgage bankers' refinancing applications index. He also noted that there have been three major global merger-and-acquisition (M&A) cycles in the last three decades that have been predicated on debt (leading to the savings and loan crisis), equity (the dot-com meltdown), and cash. The cash-based M&A cycle will end in the liquidation of cash by inflation and the destruction of the real purchasing power of cash (e.g., a lower dollar).

Real GDP world output is increasing in the sixth year of an economic recovery at a much higher rate than the U.S. economy, while the Fed has been tightening for two and a half years. These events are a radical transformation from past cycles. Emerging countries now account for 51 percent of global GDP, and they are expected to comprise two-thirds of world GDP in 20 years. The United States is losing its economic leadership position, which could also be followed by a loss of political and military leadership. We did this to ourselves, said Paulsen, because of our trade deficit for the past 15 years. As a result, emerging market dollar-based consumption has exceeded U.S. consumption for the past five years, so our fear in 1999 that the U.S. consumer would be the sole locomotive for world growth is no longer valid. Our quest, therefore, is to get the emerging market consumer to come to our shores by



contracting the trade deficit and devaluing the dollar. The biggest loser as a result of our trade policy has been manufacturing, but in the next two decades it could become the biggest winner.

**ROBERT J. BARBERA** stated that Minsky's insights have stood up relative to developments in the macroeconomic community, and that his work, particularly the 1975 book *John Maynard Keynes*, is the best road map for negotiating one's way through the business cycle. Barbera also stated that practicing economists should codify the few things that they truly know because the next major monetary policy decision will be made in China. These things include the notions of a downward-sloping IS curve (the inverse relationship between interest rates and levels of national income/investment) and a short-run Phillips curve (the inverse relationship between wage rates/inflation and unemployment) in association with the Taylor rule. The Fed funds rate over the past 10 years can be roughly explained by these two notions. However, the Fed funds rate has been more volatile than the Taylor rule would suggest. According to the Minsky addendum to the rule, violent changes in expectations about future cash flows require a radically different interest rate at (business) turning points. The business cycle has a financial overlay in which exaggerated changes in the Fed funds rate are now the rule rather than the exception.

The Minsky model is very important because monetary policy officials in China have an exclusive fascination with prices rather than asset prices. These officials do not appreciate the consequences of excessive prices nor do they take the needed adjustments. For example, Japan let asset price excesses run for a long time, and paid the price of no growth for 15 years. The mismatch of monetary and fiscal policy in the United States in the mid-1980s produced a skyrocketing dollar and very large external imbalances. When the Fed eased interest rates in the second half of the 1990s, they anticipated that a large decline in interest rates would result in a decline in the dollar and a narrowing of the trade deficit. What happened is that the dollar fell against the European currency but not against the Chinese currency, so the trade deficit continued to rise dramatically. Unlike the imbalances of the mid-1980s, current imbalances are manufactured largely by policy decisions made in Asia, not the United States. These imbalances, therefore, will adjust in the opposite direction based on Asian policy decisions, so the heir apparent to Alan Greenspan is Chinese President Hu Jintao.

The above conclusion is based on a review of the U.S. inflation rate and its component parts over the last 10 years. Energy and food represent 23 percent of the U.S. consumer price index (CPI), and China is driving energy and food prices. Core goods represent 22 percent of CPI and prices have been falling because we buy most of our goods from China, courtesy, for example, of Wal-Mart. Core goods prices are significantly lower than core services prices and are slightly negative (year-on-year). Owners' equivalent rent (23 percent of CPI) is driven by the boom-and-bust housing cycle, which is affected by China and the rest of Asia. Asian countries bought U.S. bonds worth \$3 trillion in order to steady the dollar, and the resulting very low long-term interest rates created an enormous housing boom. Thus, the only part of the CPI that is insensitive to Asia is core services (32 percent).

Barbera observed that the last several business cycles looked less like swings in wages and prices and more like the Minsky model. The asset bubble in 2000 burst, and the resulting 2001 recession wrecked the tech sector and included a much more significant decline in business equipment investment relative to other cycles. Housing was not affected by the recession, and it created a second asset inflation that is in the midst of unwinding. The interest rate structure of the past 10 months (e.g., the

two-year Treasury note) is very low relative to the Fed funds rate and reflects the liquidity from Asia (e.g., the willingness of the Japanese to borrow yen and buy dollar-denominated assets because there appears to be no currency risk).

Barbera observed that the appreciation of the renminbi would enfranchise 400 million Chinese who live in the cities and earn approximately \$5,000 per person per year, but it would be a real problem for the 700 million Chinese who live in rural areas. Thus, the tactic of China after the Thai baht crisis was to keep the dollar steady, but that strategy is generating excesses and asset prices are soaring. China has a volatile economy that is no longer command-based. We have to square that circle, Barbera said.

**JAMES E. GLASSMAN** focused on global imbalances, the state of the U.S. economy, recession risks, and the end of an era of asset-driven demand in the United States. He mentioned three great moments of our time: the Fed's (Paul Volker's) high interest rate policy, the economic and financial liberalization of the U.S. economy, and the awakening of China and India.

According to Glassman, global imbalances have nothing to do with the United States. Rather, they reflect an economic miracle unfolding in Asia. The developing countries are saving their surpluses because they feel vulnerable to an open capital market. The U.S. trade deficit has been deteriorating because its key trading partners (Europe and Japan) have been growing too slowly. This situation, however, is changing as the growth rates of the United States' trading partners increase and the U.S. trade deficit stabilizes. The great fear has been the bursting of the housing bubble, which would damage households across the United States, but we have been looking for bubbles in all the wrong places, said Glassman. The bubble was on Wall Street and then in the pricing of subprime mortgage debt, which has affected home building businesses more severely than the broad real estate market.

Glassman outlined the need to reconcile four trends: (1) the balance sheets of the household sector (household net worth is at a very high level, wealth is concentrated, and house prices have flattened but not crashed); (2) home builders are in a recession (housing starts are sharply lower); (3) credit is being repriced and credit spreads are back to a zone that represents the best of times (the problems in the subprime mortgage market are fairly confined); and (4) low and falling unemployment suggests that the economy is doing better than the numbers suggest.

The mispricing in the subprime mortgage market is mostly hitting new home builders. Since the resale housing market rose the most in the West, the West is the region experiencing the biggest declines; the rest of the country is experiencing very modest declines. In contrast, new home sales at the low end of the market are down sharply across the country as a result of credit conditions. Contrary to our fears, the real estate market is not having a broad systemic impact, and the historical link between housing and national recessions in the United States is not indicative of the current situation: a mispricing of credit. That is why the home building business is correcting and unlikely to trigger a broad recession.

Glassman noted three other things to consider regarding the likelihood of recession. First, the developing world is growing rapidly and could grow fast for decades, and global growth is at its fastest pace since the early 1970s. Second, corporate profits are at record levels, while labor income is at its lowest level since 1970 (there is no need to worry that tight labor markets and costs will cause inflation). Third, we are at the end of an era. It is not normal that consumer spending has been growing



half a point faster than income for the past 20 years. The great asset boom was reflected in the U.S. economy (an equity market and financial asset power), the opening up of the world economy, and the great disinflation. We are now entering an era of more normal gains in asset and real estate markets, and interest rates are no longer declining because inflation has declined enough. Since stable interest rates do not allow an increase in leverage (debt), household savings will improve. Therefore, demand growth in U.S. consumer spending will be more in line with income. This result is reflected in the markets, and is the reason why real interest rates, on average, are low.



Among the conference attendees were a number of students from the Bard College Economics Program.

## Participants

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**LAKSHMAN ACHUTHAN** is managing director of the Economic Cycle Research Institute (ECRI), an independent organization focused on business cycle research and forecasting. He plays a key role in helping corporate strategists, asset managers, and policymakers regularly use cyclical forecasts in their decision-making processes. He is also the managing editor of ECRI's forecasting publications and regularly participates in a wide range of public economic discussions. Achuthan is a member of *Time* magazine's board of economists as well as the New York City Economic Advisory Panel, and serves as a trustee on a number of nonprofit boards. He is coauthor of *Beating the Business Cycle: How to Predict and Profit from Turning Points in the Economy*, 2004.

**ROBERT Z. ALIBER** taught international finance at the Graduate School of Business of the University of Chicago from 1965 to 2004. While there, he developed the Program of International Studies in Business and the Center for Studies in International Finance. He has been a consultant to the Board of Governors of the Federal Reserve System and to other U.S. government agencies, as well as to the World Bank, the International Monetary Fund, and research institutes and private firms. He has written extensively about international monetary and exchange rate issues, and has lectured throughout the United States and abroad.

**ROBERT J. BARBERA** is executive vice president and chief economist at ITG, with responsibility for ITG's global economic and financial market forecasts. He has spent the last 25 years as a Wall Street economist, earning a wide institutional following. Barbera was chief economist and director of economic research at Lehman Brothers, and prior to that was chief economist at E. F. Hutton. From mid-1994 through mid-1996, he was cochairman of Capital Investment International, a New York-based research boutique. Before arriving on Wall Street, Barbera served as a staff economist for Senator Paul Tsongas and as an economist for the Congressional Budget Office; he also lectured at M.I.T. Currently, he is an adjunct professor of economics at Johns Hopkins University. Barbera holds both a B.A. and a Ph.D. from Johns Hopkins.

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P. Arestis and M. Sawyer, eds., *A Handbook of Alternative Monetary Economics*, 2007. Ertürk received a Ph.D. in economics from New School University.

Senior Scholar **JAMES K. GALBRAITH** is a professor at the Lyndon B. Johnson School of Public Affairs and the Department of Government at the University of Texas at Austin. He is also director of the University of Texas Inequality Project. A focus of his research is examining issues pertaining to employment and inequality, especially determinants of global inequality. His books include *Unbearable Cost: Bush, Greenspan, and the Economics of Empire*, 2006; *Inequality and Industrial Change: A Global View* (with M. Berner), 2001; *Created Unequal: The Crisis in American Pay*, 1998; *Macroeconomics* (with W. Darity Jr.), 1994; and *Balancing Acts: Technology, Finance, and the American Future*, 1989. Galbraith received a B.A. from Harvard University and a Ph.D. in economics from Yale University. He also studied economics as a Marshall Scholar at King's College, Cambridge University.

**JAMES E. GLASSMAN** is a managing director and senior economist with JPMorgan Chase & Co. He works closely with the firm's chief investment officer, commercial banking interests, and government relations groups. He also publishes independent research on the principal forces shaping the economy and financial markets. Glassman's views are widely cited in the financial media, where he is a frequent commentator on economic policy issues. From 1979 through 1988, he served in a number of areas in the Research and Statistics and Monetary Affairs Divisions at the Federal Reserve Board in Washington, D.C. In 1988, he joined Morgan Guaranty, and in 1993, Chemical Bank, which, through mergers with Chase Manhattan, J. P. Morgan, and, most recently, Bank One, is now called JPMorgan Chase & Co. Glassman earned a bachelor's degree from the University of Illinois, Champaign-Urbana, and a Ph.D. in economics from Northwestern University.

**GREG HANNSGEN** is a research scholar and member of the Levy Institute's macroeconomic modeling team, conducting research on macroeconomics, money, and social economics. His publications include "Minsky's Acceleration Channel and the Role of Money," *Journal of Post Keynesian Economics*, 2005. He is also the former editor of the *Report* and many other Levy Institute publications. Hannsngen received a B.A. in economics from Swarthmore College, an M.A. in public affairs from the University of Minnesota, and M.A. and Ph.D. (2002) degrees in economics from the University of Notre Dame.

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*Economy*, 1973 and 1975; *Theory of Capital*, 1976; *Origini e sviluppo dei mercati finanziari*, 1996; and *International Finance and Development* (with J. A. Ocampo and S. Griffith-Jones), 2006. Kregel studied primarily at the University of Cambridge, and received his Ph.D. from Rutgers University. He is a life fellow of the Royal Economic Society (U.K.), an elected member of the Società Italiana degli Economisti, and a distinguished member of the Asociación Nacional de Economistas de Cuba.

Federal Reserve Board Governor **FREDERIC S. MISHKIN** took office on September 5, 2006, to fill an unexpired term ending January 31, 2014. Before becoming a member of the Board, Mishkin was Alfred Lerner Professor of Banking and Financial Institutions at the Graduate School of Business, Columbia University, from 1999 to 2006. Prior to that, he was A. Barton Hepburn Professor of Economics (1991–99) and professor (1983–91) at the Graduate School of Business. He was also a research associate at the National Bureau of Economic Research (1980–2006) and a senior fellow at the Federal Deposit Insurance Corporation’s Center for Banking Research (2003–06). In addition to Columbia University, he has taught at the University of Chicago, Northwestern University, and Princeton University. Mishkin served the Federal Reserve System in several roles before joining the Board. From 1994 to 1997, he was executive vice president and director of research at the Federal Reserve Bank of New York and an associate economist of the Federal Open Market Committee. He was editor of the Federal Reserve Bank of New York’s *Economic Policy Review* and later served on that journal’s editorial board. From 1997 to 2006, he was also an academic consultant to and served on the Economic Advisory Panel of the Federal Reserve Bank of New York. Mishkin has been an academic consultant to the Board of Governors and a visiting scholar at the Board’s Division of International Finance. His research focuses on monetary policy and its impact on financial markets and the aggregate economy. He is the author of more than fifteen books and has published numerous articles in professional journals and books. He has served on the editorial board of the *American Economic Review* and has been an associate editor at the *Journal of Business and Economic Statistics*, the *Journal of Applied Econometrics*, and the *Journal of Economic Perspectives*. He is currently an associate editor (member of the editorial board) at the *Journal of Money, Credit and Banking*, *Macroeconomics and Monetary Economics Abstracts*, *Journal of International Money and Finance*, *International Finance*, and *Finance India*. Mishkin has been a consultant to the World Bank, the Inter-American Development Bank, and the International Monetary Fund, as well as to numerous central banks throughout the world. He is a former member of the International Advisory Board to the Financial Supervisory Service of South Korea, and has served as an adviser to the Institute for Monetary and Economic Research at the Bank of Korea. Mishkin holds a B.S. and Ph.D. in economics from the Massachusetts Institute of Technology. In 1999, he received an honorary professorship from the Peoples (Renmin) University of China.

**WOLFGANG MÜNCHAU** is associate editor of the *Financial Times* and its European economic columnist. Together with his wife, economist Susanne Mundschenk, he recently founded [www.eurointelligence.com](http://www.eurointelligence.com), a macro Internet site for the euro area, offering daily comment and analysis. Münchau was one of the founding members of *Financial Times Deutschland*, the German-language business daily, where he served as deputy editor from 1999 to 2001 and as editor-in-chief from 2001 to 2003. He was economics correspondent of the *Financial Times* ahead of the start of economic and monetary union

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**DIMITRI B. PAPADIMITRIOU**'s areas of research include financial structure reform, community development banking, fiscal and monetary policy, employment policy, and the distribution of income, wealth, and well-being. He heads the Levy Institute's macro-modeling team studying and simulating the U.S. and world economies. In addition, he has authored and coauthored studies relating to Federal Reserve policy, fiscal policy, employment growth, and social security reform. Papadimitriou is president of the Levy Institute and executive vice president and Jerome Levy Professor of Economics at Bard College. He has testified on a number of occasions in committee hearings of the U.S. Senate and House of Representatives, was vice-chairman of the Trade Deficit Review Commission of the U.S. Congress (2000–01), and is a former member of the Competitiveness Policy Council's Subcouncil on Capital Allocation. He was a Distinguished Scholar at the Shanghai Academy of Social Sciences in fall 2002. Papadimitriou has edited and contributed to eight books published by Macmillan and Edward Elgar and is a member of the editorial board of *Challenge*. He is a graduate of Columbia University and received a Ph.D. in economics from the New School for Social Research.

**ROBERT W. PARENTEAU** is chief U.S. economist and investment strategist at RCM, an investment management company of Allianz Global Investors. He employs macroeconomic insights to drive U.S. equity and global balanced portfolio strategy. In this effort, he guides the global and domestic asset allocation, sector, factor, and industry selection decision making of RCM portfolio managers and equity analysts. He earned a B.A. in political economy with honors at Williams College in 1983. His dissertation identified how labor market dynamics undermined the Keynesian policy consensus. He completed a chartered financial analyst degree in 1989 and then served as a regular lecturer for all three levels of the Security Analysts of San Francisco CFA preparation course until 1999. In 1999 and 2000, he presented several papers at the Levy Institute's annual conference on financial structure that applied Hyman P. Minsky's financial instability hypothesis to the late 1990s technology bubble. He further explored the macrodynamics of financial imbalances in papers presented at the Political Economy Research Institute (2001), the seventh and eighth International Post Keynesian Workshop (2002 and 2004), and the Eastern Economic Association proceedings (2005). Versions of his papers were published as chapters in L. R. Wray and M. Forstater, eds., *Contemporary Post Keynesian Analysis*, 2004; and G. A. Epstein, ed., *Financialization and the World Economy*, 2005.

**JAMES W. PAULSEN** is chief investment strategist at Wells Capital Management. An investment management industry professional since 1983, Paulsen develops investment strategies that assist in the management of separate institutional account assets as well as mutual and collective investment funds. He joined Norwest Investment Management, Inc., which later became part of Wells Capital Management, as chief investment officer in 1997. Previously, he was senior managing director and chief investment strategist for Iowa's largest independent asset manager, Investors Management Group, Des



Moines. Earlier, he was president of SCI Capital Management in Cedar Rapids, Iowa. Paulsen is often quoted in the national press, including the *Wall Street Journal*, *Barron's*, and the *New York Times*. *BusinessWeek* named him Top Economic Forecaster for 2001, and *BondWeek* has twice named him Interest Rate Forecaster of the Year. For more than 20 years, he has published his own assessments of national and global economic trends through his newsletter, *Economic and Market Perspective*, which was named to *Money* magazine's list of "101 Things Every Investor Should Know" in 2004. Paulsen earned his bachelor's and doctoral degrees in economics from Iowa State University.

**TORSTEN SLOK** is a senior member of the global economics team at Deutsche Bank Securities, Inc. Before joining the firm in 2005, Slok was on the staff of the Organisation for Economic Co-operation and Development in Paris in the Money and Finance and Structural Policy Analysis Divisions. He previously worked for the International Monetary Fund as part of the group responsible for writing the semiannual *World Economic Outlook* reports, and in the regional division overseeing China, Hong Kong, and Mongolia. He has published numerous journal articles and reviews on economics and policy analysis. Slok studied at Princeton University and the University of Copenhagen, and holds a Ph.D. in economics.

Resident Research Associate **W. RAY TOWLE** is the editor of the Summary and other Levy Institute publications. His research interests include macroeconomic forecasting, international financial systems, regional economic development, balanced budgets, and deregulation. Previously, he was a consultant, writer, and editor in Canada and New York, and he has an extensive background as an energy economist. He received B.Sc. and M.A. degrees from the University of Alberta, an executive M.S. degree in finance from the Zicklin School of Business at Baruch College, City University of New York, and a Ph.D. from the University of London, England.

**L. RANDALL WRAY** is a senior scholar working on projects in the areas of monetary policy, employment, and social security. He is examining the population that has not benefited by the economic expansion of the 1990s—especially low-skilled, prime-age males who are not counted as officially employed because they are out of the labor force. Wray's most recent research focuses on the rapidly rising incarceration rates of this segment of the population and on proposals to make increased use of prison labor. With President Dimitri B. Papadimitriou, he is assessing the effect of demographic shifts—specifically, the aging of the population—on the labor market in light of the current slow growth in labor force participation rates and based on different ranges of productivity growth. They also are continuing their work on the appropriateness of existing price indexes as targets for monetary policy and will apply their findings to OECD countries. Wray has published widely in journals and is the author of *Understanding Modern Money: The Key to Full Employment and Price Stability*, 1998. He is a professor of economics and senior research associate at the Center for Full Employment and Price Stability at the University of Missouri–Kansas City. He received a B.A. from the University of the Pacific and an M.A. and a Ph.D. from Washington University in St. Louis.

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These proceedings were prepared by

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