

Unedited Event Transcript

Book Launch: Banking's Final Exam: Stress Testing and Bank-Capital Reform

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Adam Posen: Good afternoon, everyone. Welcome back to the Peterson Institute for International Economics. I'm Adam Posen, the Institutes President. And it's my great pleasure today to be host for the book launch for Morris Goldstein's, *Banking's Final Exam, Stress Testing and Bank Capital Reform*.

Now Morris, as many of you know, has been affiliated with the Institute for more than twenty years. He came here with a huge bang from the Fund, IMF, where he'd had a distinguished career including as deputy director of the research department for seven years. And Fred Bergsten recruited him, and Morris came in and basically wrote the first Basel Capital Standard for Banks.

And as with a blurb we subsequently got from Vice Chair Fisher, it was an example that we always hold up as how a little book, well targeted, well timed, can have a big impact. And Morris has done many things since, including published works on the Asian financial crisis, on predicting emerging market crises, on banking issues.

But so now if Morris had that much impact with a little book, you have to wonder how much impact he'll have with this one. This is in weight terms, the biggest book we're publishing this year. But also, in substantive terms it is to be commended as one of the breakthrough books we are proud to publish this year.

And we're delighted that Morris' family is here with us. And many of them, and many old friends of both Morris and of the Institute, this is a sentimental occasion because, of course, Morris has been working on these issues for much of his professional lifetime. And we are seeing incredible pressures on the world financial system, with it being truly unclear.

Whether you go towards more reform, or back, what does that even mean. And Morris has done the heavy lifting, as our colleague Bill Kline independently in his way, and we'll be releasing his book in a few weeks,

to talk about what reform really should mean and how to do it. So we are delighted to have Morris here. We are delighted to publish this book and thank you all for joining us.

As befits both Morris' reputation and insight, but also the quality of this book, we're delighted to have two extremely knowledgeable and insightful, and practical discussants of Morris' book. First is of course, Tom Hoenig, currently the vice chair of the Federal Deposit Insurance Corporation.

He's been there since April 2012. He is also the president of the International Association of Deposit Insurers, which is not an association that I generally get a lot of mail from, but I think it's probably an association that is indeed the precise prime target for this book. The good, well meaning, intellectually sound, regulators and supervisors who want to prevent the next banking crisis and keep the banks functioning well.

We're also delighted to have Giovanni Dell'Ariccia, who's deputy director of the IMF's Research Department. A very creative researcher, very practical, who currently supervises the macro financial division in the IMF's research department.

He's had a distinguished career at the Fund. And in particular has done some, he and his colleagues have done some incredibly good modeling of what the impact on the world economy, and what the impact on future risks would be if changes in bank capital, and he's going to share with us some insights from that work, taking advantage of Morris' proposals to make those points.

So we have a terrific program today, as is our wont. Morris will speak and then I'll just ask each discussant in turn to come up, no further introduction. Then our three speakers will come up here and we'll have on the record discussion with the distinguished audience. Morris, thank you for all your contributions, and congratulations on Banking's Final Exam.

Morris Goldstein: Thank you, Adam. Good afternoon, and thank you all for coming. This is a fat book, about a contentious subject in finance. It would not have been completed without the help of colleagues, friends and family. Adam Posen and Mark Noland lent their whole hearted support for this project right from the beginning.

Without implicating them in any of the book's policy prescriptions, Stan Fisher, Tim Geitner, Charles Goodhart, Tom Hoenig and Phillip Turner read and commented on two earlier versions of the manuscript. They also put me in contact with specialists who illuminated topics, about which I was less familiar.

Colleagues both at Peterson and outside offered extremely helpful suggestions on an earlier draft. In each tailor provided superb research assistance. Chuck Morrison and Chris Neregaher were invaluable in helping me to understand better, a host of thorny data issues about U.S. banks.

Steve Weisman, Madona Devasahayam and their colleagues in Peterson's Publication Department performed their magic in transforming the manuscript into its final form. Last but not most important, my family endured the time I spent writing this book with considerable understanding.

I say understanding because this was a period during, which I had previously pledged to be retired. For anyone who sent a gift at my retirement dinner celebration, I regret to inform you that there will be no refunds, mis-selling or not. Anyway, to and for all of the above, I am most grateful for your help.

As the title suggests, my book is about stress testing and bank capital reform. Stress tests are exercises designed to determine whether a bank or group of banks will remain adequately capitalized even in a severely adverse economic scenario. The most famous stress test, called the Supervisory Capital Assessment Program, or SCAP for short, was conducted by U.S. authorities in May 2009. Near the worse of the '07 to '09 financial crisis.

By now there is widespread agreement that the scenario results and bank recapitalizations generated by the SCAP mark the critical turning point in that crisis. Further rounds of supervisor led U.S. stress tests have been conducted annually by the Federal Reserve between 2011 and '16.

Similar tests have been conducted in the EU over the same period. I argue that these EUI tests taken as a group have been less effective than the U.S. tests. Bank capital is the self-insurance that banks maintain against unexpected losses. There is agreement that the amount and quality of capital that large banks held just before the '07 to '09 crisis was grossly inadequate.

In response, bank capital reforms were undertaken domestically via the Dodd Frank Act of 2010 in the U.S. and internationally via the Basel Three Agreement. The central question I address in this book is the following.

Given that we now have a regular stress testing regime in place, and given that banks have now met the minimum capital requirements of Dodd Frank and Basel Three, can we be confident that the largest U.S. banks are now safe enough to avoid large taxpayer bail outs in a future severe crisis.

I answer to that question in the negative. No, the largest U.S. banks are not yet safe enough. Over the next 25 minutes or so I'll give you a summary of how I get to that conclusion. I will also outline a bold reform program for bank capital and stress testing that would fix the problem without endangering the macro performance of the U.S. economy.

Consider what it means to pass a bank stress test. A bank passes the quantitative part of the test, if its capital ratio does not fall below a prespecified minimum ratio called the hurdle rate. Not only in the baseline scenario but also under the more adverse scenarios.

The capital hurdle rates in these tests are usually set at the minimum regulatory standard. For example, in the 2016 stress test, notice the comprehensive capital analysis and review, or CCAR for short, one of the key hurdle rates was four percent for the tier one leverage ratio. But what if this four percent hurdle rate is way below the capital ratio that would maximize net social benefits for the U.S. economy.

What if the risk weighted measures of bank capital are used for other hurdle rates are not the indicators that best distinguish sick from healthy large banks. What if the contagion effects of shocks to the U.S. economy that were so evident and problematic during the global and economic financial crisis of '07 to '09 are not yet adequately captured and simulated, even the test of really adverse scenario.

And what if the expected social loss is stemming from an insolvency of a very large bank holding company like JP Morgan Chase, with its almost 2.5 trillion in consolidated bank assets, are much larger than those from a smaller bank holding company like Zion's Bank Corp. with less than 60 billion in total assets. And this even after imposing a capital surcharge for systemic importance on JP Morgan.

If those suppositions are correct, then the fact that all 33 bank holding companies passed the quantitative part of the 2000 CCAR test would hardly be grounds for complacency. In this book I examine these four suppositions and find that each of them has strong support.

The rest of my talk is in two parts. First I summarize my main findings about the U.S. and EUI stress tests conducted over 2009 to '16. And second, I summarize my findings about why we still need bold bank capital reform, and what reform that should take.

Chapter nine of the book is a postscript where I give my preliminary reaction to the Trump Administration's financial deregulation plans. If we have time during the Q&A period, perhaps we can get into a discussion at least a bit. But I won't hold you in suspense.

I am not a man who Tweets. But if I did my Tweet would be the following. Trump Financial Deregulation Pan, sad and very bad. Because the number of minutes I can speak is tightly controlled, while the number of words per minute is not, I plan to speak pretty fast.

Before I get to the beef there is one preliminary for non-specialists, a brief note on the measurement of bank capital ratios may be helpful. An numerator is a measure of bank capital. A key factor to keep in mind. Equity is better than debt for absorbing losses. Common equity is regarded as the highest quality of capital because it doesn't have to be repaid, it doesn't require payments of dividends or interest, and it stands last in line in insolvency or bankruptcy proceedings.

In denominator, the capital ratio is a measure of bank assets. In this book I refer to two measures, risk weighted assets and unweighted total assets. For risk weighted assets, one is multiplying each category of bank assets by a risk weight, and then calculating the weighted average. Risk weights typically fall between zero and a hundred percent, but it can exceed a hundred percent for some very risky assets.

For unweighted total assets, there are no risk weights. Each asset is given the same weight. So consider the following simple example. Suppose that a bank has five dollars in high quality capital, and two kinds of assets. \$50 dollars in cash and \$50 dollars in loans to commercial and industrial firms. Its total assets are thus \$100 dollars.

Suppose further that the regulatory risk weight on cash is zero, while that on loans is a hundred percent. Then the banks risk weighted assets would be \$50 dollars, calculated as zero percent times \$50 dollars of cash plus a hundred percent, times \$50 dollars of loans. Its risk weighted capital ratio would then be ten percent. Five dollars of capital, the numerator, divided by \$50 dollars of risk weighted assets in the denominator.

In contrast, its unweighted capital ratio, known as the leverage ratio, would be only five percent. Composed of the same five dollars of capital in the numerator, but \$100 dollars of total assets in the denominator. In reality, there are huge numbers of regulatory risk weights including risk weights obtained from the internal models of banks themselves.

You might think that the risk weighted measures of bank assets would almost be better than the unweighted ones since there are large differences in the fall rates among the different bank assets. But this is not so. Risk changes over time and regulatory risk weights can be inflexible, especially when supervisors or banks themselves do not want to acknowledge that risk has increased.

The maintenance of a zero risk weight for sovereign bonds during a sovereign debt crisis is a case in point. In addition, evidence reviewed in this book shows that large banks have sometimes manipulated the risk weights from their internal models to lower the reported risk weighted assets, and thereby artificially inflate their risk weighted capital ratios.

So with that brief introduction, let me get on to stress tests and bank capital. On stress tests, stress tests are here to stay. Whereas bank capital requirements are backward looking and rigid in design. Stress tests address tail risk and forward looking scenarios.

These scenarios can be custom tailored to meet the specifics of a country's risk profile. Whereas the setting of regulatory capital ratios has been heavily dependent on the low historical probability of banking crises, stress tests employ the less demanding, but more often revealing standard that adverse risk scenarios have to be severe but plausible.

This permits stress tests to consider a wider set of crisis vulnerabilities. Stress tests also provide a simple and understandable metric with which to evaluate the capital adequacy of banks. Namely, a comparison to what the capital ratio would be under adverse conditions with a capital hurdle rate.

And the reputational damage associated with failing a stress test under a public spotlight and thereby upsetting plans for the dividends and share buy backs, serves as an incentive not to allow capital to fall too low.

If certain weaknesses of stress tests can be remedied, their influence is likely to increase even further relative to other bank supervisory tools. The most successful stress test over '09 to '16 was the 2009 SCAP in the U.S.

So far, stress testing has been more successful as a crisis management instrument than as an early warning or crisis prevention mechanism. On the whole, the set of the EUI stress tests received poorer reception by markets than the U.S. tests.

There are good reasons for the poorer reception of EU tests. They include lack of authority in the '09 to '11 test to compel rather than just recommend recapitalization for under capitalized banks. A weak supporting crisis management cast, which produced an anemic recovery from the '07 to '09 crisis.

Outside estimates of short falls that were considerably higher than official estimates emanating from the stress tests, likely overstatement of cash flow ratios as a result of loan loss provisioning and low credit write downs, and a failure in the '11 exercise to specify capital targets in terms of absolute amounts rather than a ratio.

In addition, the leverage ratio test was not introduced until the 2016 test. Thereby allowing large German, French and Dutch banks with high risk weighted capital ratios below leverage ratios to fare much better on the test than they should have.

Banks participating in stress tests should account for a substantial part of the banking systems assets. If the country's financial system is not bank dominated, a way needs to be found to assess how fragilities in the non-bank sector and that systemically important non-banks could affect the banking system.

Bank supervisors should continue to develop their own suites and models both to guard against model risk from a particular model or two, and to validate the reasonableness of models used by banks in bank run tests.

Test coordinators must have the political independence to be able to call the results as they see them. If instead, markets perceive that the tests are rigged to produce an overly optimistic or politically convenient outcome, publication is likely to do little to bolster confidence.

The quality of capital contained in the hurdle rate matters, especially in a crisis. During the worst of the global financial crisis, the only capital ratio that market participants were interested in were those that had tangible equity in the numerator.

Disclosure of bank by bank results is essential for obtaining the market discipline effects of stress tests. All U.S. tests except the 2011 CCAR and all EUI tests, except the initial 2009 tests have included bank by bank results.

Linking the results of stress tests with remedial actions to correct under capitalization is crucial. The innovation of the U.S. CCAR to embed the stress tests in a capital planning process of banks is a good one.

Bank supervisors need a mandate to temporarily suspend dividend payments, share buy backs and parts of executive compensation when capital hurdle rate's and stress tests are not achieved, as well as the will to enforce that mandate.

If severely under capitalized banks are unable to raise enough capital from private markets, and the decision is made not to close them, enough public funds need to be available to make public recapitalization feasible. Otherwise, it will be difficult to make stress test results credible because market participants will reason that the stress test architects are low balling the capital shortfalls to match the small amount of recapitalization resources.

Official stress test estimates of capital shortfalls will be less credible when outside estimates of these shortfalls are consistently much larger. When the gap between official and private shortfall estimates is large, officials should address the main reason for this discrepancy. It is troubling that stress tests perform so poorly in the run up to the worst economic and financial crisis since the Great Depression.

Two corrective actions are called for. First the authorities need to draw heavily on early warning models of banking crisis and integrate them into stress tests in the exercises. These dual threshold models find that banking system vulnerability is greatest when there is both an abnormally rapid rise of growth and credit to the non-financial private sector, and an abnormally rapid rise in real property prices.

Second, the modeling of the financial sector during a crisis needs to include enough feedback contagion, and amplification effects that is seemingly moderate shock to the banking system can reduce the kind of real economy and bank capital effects observed in a severe crisis.

Current stress tests models do not incorporate enough elements of the leverage cycle, enough shifts in expectations, enough funding problems, enough fire sales, enough interaction between the bank and non-bank financial sectors, and enough adaptation by agents.

These analytical issues are not a technical side show. In stress test modeling, they are the main event. Even the most advanced stress testing programs admit that they are in the early stages of dealing with this difficult challenge. Until they get farther, true capital shortfalls are likely to be underestimated.

When stress tests indicate that a bank is undercapitalized, the capital target should be expressed in terms of the absolute amount of capital that should be raised. If instead supervisors allow banks to choose how they will achieve the higher capital ratio, there is a good chance the banks will opt to make most of the adjustment by cutting back on loans, engaging in fire sale of assets and de-risking, all with the aim of reducing risk weighted assets.

The problem is that these methods of lowering the denominator of the capital ratio will not be the low cost option for the macro economy, that will be contractionary. All stress tests should contain a leverage ratio test.

Almost all of the largest banks that ran into trouble during the global financial crisis had risk weighted capital measures that allowed them to be classified as well capitalized on their last report, while leverage ratios were simultaneously pointing to very thin capital conditions. Tom Hoenig has done a lot of work in highlighting that.

The story was similar in Europe. This situation could be avoided in the future by requiring a leverage ratio test. U.S. stress tests have contained a leverage ratio test since 2011. The EUI test added only one in 2016.

I next move to bank capital reform. None of the approaches to estimating optimal capital ratios is comprehensive on its own to provide a good guide. Better therefore, to combine the insights from all these approaches to reach a sensible judgment call and the preferred answer.

My call is that the optimal weighted average leverage ratio for U.S. banks should be in the neighborhood of fifteen percent, with the eight G-SIBS in the fourteen to eighteen percent range. Other large banks with 50 billion or more in total assets in the eleven to thirteen percent. And small banks at ten percent.

The consensus in official circles is for a much lower leverage ratio. For U.S. banks minimum leverage ratios are in the four to six percent range, the minimum for Basel III is three percent. Actual leverage ratios for the eight U.S. G-SIBS and U.S. gap terms currently stand at about eight to nine percent.

The official consensus is wrong. It underestimates the benefits of higher capital, and overestimates the cost. The consensus relies almost exclusively on observed losses incurred by banks, with particular attention rightly devoted to the '07 to '09 crisis.

The consensus ignores counterfactual losses. By counterfactual losses, I mean the losses that banks would have suffered in the global crisis had there not been such a massive and multifaceted array of government interventions.

Without those interventions, including widespread government guarantees, public capital injections to banks, and measures to aid the asset backed securities markets, not just super easy monetary policy and expansionary fiscal policy, bank losses would have surely been much higher. Alan Blinder there has done a nice book with Mark Zandi on counterfactual losses.

A proper treatment of the counterfactual for U.S. banks would include not only the effect of the U.S. crisis measures but also those of other G-20 governments, since those foreign interventions also helped reduce U.S. bank losses.

IMF data indicate that observed peak credit write downs by U.S. banks during the global crisis amounted to more than eight percent of their total assets. Counterfactual losses would have been much bigger. The counter

factual is highly relevant because G-20 leaders have pledged publicly not to repeat this extraordinary set of government interventions during any future crisis.

Another common practice is to assume that after suffering losses during the upswing of the cycle, banks can run their capital down very close to zero. This assumption ignores the fact that banks typically maintain capital ratios considerably above the regulatory minimum at the bottom of the cycle, reflecting market pressures to do so.

The right question is therefore, how much capital would banks need to sustain the losses experienced during the upswing of the cycle and still have enough capital to meet market pressures at the bottom?

The consensus measures bank losses during the global crisis using an income statement approach rather than a balance sheet. Using that income as the prepared measure of losses leads to a lower estimate of the optimal capital ratio, because credit losses are offset against bank revenues. And those revenues usually do not stay negative for long in a surviving bank, even in a severe crisis.

But in severe crisis conditions when many banks are failing or close to failing, market participants will find it difficult to know which banks will survive long enough to earn those positive revenues over the next year or two.

Put in other words, they don't know which banks are going concerns, and which are gone concerns. The appropriate assumption for measuring losses during the worst crisis since the Great Depression is to use the balance sheet.

The consensus fails to incorporate a key insight. The capital ratio that the economy needs to sustain a healthy rate of bank lending is higher than the capital ratio needed to absorb losses. The consensus assumes that output losses in a crisis are mostly temporary and do not have a large negative effect on potential output.

But during the global crisis, the negative effect on potential output in advanced economies was about as large as the effect on actual output. The higher the output cost of a banking crisis, *ceteris paribus*, the higher the optimal capital ratio.

The consensus uses historical databases on the unconditional annual probability of a systemic banking crisis to drive its estimate, the benefits of higher capital ratios. The probability is typically assumed to be in the range of two to five percent. With such a low probability, it does not take

much capital before the reduction in the probability of a crisis induced by higher capital hits zero.

The rub is that the historical probability of a crisis may not be a good guide to future probabilities. The low historical probability of large losses at large U.S. banks in 1986 to 2005 provided a way too optimistic forecast of the losses experienced by those banks during '07 to '09.

Nor does the average historical probability fully capture the rise of the U.S. shadow banking system, with its large stock of uninsured, runnable short-term liabilities, and the potential adverse spillover effects on the banking system of another run on these shadow banks.

Setbacks to the crisis management arsenal have also taken place in the wake of the crisis. Here former U.S. Treasury Secretary Geitner underlines that of the 21 financial crisis tools used during the '07 to '09 crisis, 12 of them could not be activated today. Likewise, monitoring fiscal policy tools are more constrained today than they were in '07.

A sensible guide for crisis prevention is to hope for the best, but prepare for the worst. A poor substitute is to hope for the best, but prepare for the global average. At the heart of the banking industries' opposition to much higher requirements is the assertion that higher bank capital will depress bank lending and thereby reduce output and employment.

This assertion is increasingly at odds with the best empirical evidence, as well as with the appraisals of senior supervisors. I cannot emphasize this enough. Better capitalized banks lend more, not less than weakly capitalized ones.

The consensus' view of the effective higher capital requirements on banks overall funding cost sits on shaky ground. Most studies either failed to allow for any Modigliani Miller offset, or if they do focus too much on the cost of new equity and not enough on the cost of raising new debt financing.

Focusing on the effect of higher capital and debt funding costs makes sense because that is the denominate form of financing for banks. One important new BIS study reports that all else equal, a one percentage point increase in the leverage ratio was associated with approximately a four basis point reduction in the average cost of debt funding.

The author has then used this estimate along with data on the average bank, to calculate the overall increase in the cost of bank funding from a one percentage point increase in the leverage ratio. The answer is three basis points.

Using their estimates and assuming that eighty percent of the increase in funding costs are passed on to bank customers, implies that an 800 basis point increase in the G-SIB leverage ratio from where we are now, about eight percent to sixteen percent would yield an increase in G-SIB bank lending rates of only twenty basis points.

Since G-SIBS represent about sixty percent of total consolidated bank holding company assets, the increase in overall bank lending rates will be lower still, about twelve basis points.

Adding in modest increases in minimum leverage ratios for large non G-SIB banks and for smaller banks raises the increase in overall bank lending rates to only 14 percent. The consensus assumes a much bigger increase.

It's useful to compare my estimated twenty basis point increase in G-SIB bank funding costs to the estimated bank funding effects of too big to fail subsidies. According to the IMF, the annual too big to fail subsidy for U.S. SIB's was roughly 15 basis points in normal periods, rising to 75 basis points for a distressed SIB.

As these subsidies are funded by the government, elimination of them should not count as a social cost. To translate any increase in bank funding costs into increases in bank lending rates, the consensus almost always assumes full pass through.

The argument for doing so is that failure to pass on fully the increase in funding costs would induce resources to leave the banking industry with adverse consequences for growth. However, beyond a certain threshold, which U.S and EU financial systems have already passed, a larger banking and a larger financial system becomes a drag on economic growth, not a spur to it.

Recent evidence is not kind to the full pass through assumption. Cicchetti examines the effect of Basel III capital increases, using data from fifteen large economies. He stresses that contrary to the predictions of the pessimist, there was no ballooning of interest margins.

Increases in minimal capital requirements that are phased in gradually and that could be funded largely by retained earnings are less costly than increases implemented more quickly and then funded by new equity issuance.

A useful rule of thumb employed by the Fed says that a hundred basis point increase in the U.S. federal funds rate, which after all boosts the entire term structure of interest rates, and as Jeremy Stein puts it, gets in

all the cracks of the financial system, lowers the lever of real GDP by about a hundred basis points after eight quarters.

A similar size increase in the overall bank lending rate should produce just a fraction of that effect, given with its narrow impact. Banks are responsible for only about a third of the credit extended to the private, non-financial sector in the United States, according to Mr. Stanley Fisher.

On the basis of this rule of thumb, the macro economic impact of a fourteen basis point increase in bank lending rates spread over ten years is likely to be so small as to be barely detectable in the macro data.

Moreover, such a tiny macro effect could be easily offset by the Fed lowering infinitesimally for the Federal Funds Rate. The consensus assumes much larger output effects.

The primary capital standard for bank regulations should be better than the alternatives in distinguishing sick from healthy banks, it should be easy to understand, inexpensive to compute, and difficult to manipulate by banks and it should possess superior loss absorbency.

By no stretch of the imagination do the existing risk based measures of capital fit this job description. The leverage ratio should therefore become the primary measuring rod for capital adequacy.

Making the leverage ratio king of the hill does not mean that there would be no risk sensitivity in bank supervision or stress tests. To incentivize banks not to load up on risky assets and compensate for some of the weaknesses of existing stress tests, I propose that large banks be subject to a risk surcharge.

This surcharge would be based on six types of indicators. A measure of tail risk dependence, a rate of loan growth, over valuation of property prices, market based measures of bank health, risk derived from reverse scenarios in which one solves for the shocks it would produce with the given decline in the capital ratio, areas of risk where the supervisors have special concerns, and the ratio of risk weighted assets to total assets, but where risk weighted assets come from a revised standardized approach to risk weighting. Not from bank internal models. Banks with higher risk scores would be subject to a capital surcharge. Banks with normal or low scores will not.

To remedy the most glaring deficiencies in the existing regime in the United States, I propose a bold reform program. The four existing bank capital standards would be replaced with a single standard, the tangible leverage ratio.

Long term minimums for the tangible leverage ratio would be 14 to eight percent for the eight G-SIBS depending on the banks systemic importance. There would be 11 to 13 percent for large banks with 50 billion or more in assets. And for smaller banks it would be 10 percent.

These long term targets would be phased in, in roughly equal installments over 10 years. Risk sensitivity would be introduced via the aforementioned risk surcharge. The new leverage minimums would be translated into baseline capital hurdle rate's in the CCAR test.

This plan has a number of advantages. The plan would deliver a quantum jump in the amount of loss absorbing, high quality capital in the largest U.S. banks. The plans propose size and pace of capital increases are perfectly consistent with maintaining satisfactory performance.

The plans three level structure puts the largest increases in bank capital where they're needed most, at the nation's largest and systemically most important banks. The same three level structure would also put regulatory relief where it can be implemented without increasing a systemic risk. Namely, in small banks.

You can give regulatory relief to literally 99 percent of the 5500 or 6000 banks in the United States. You just can't give it to the 35 banks that make up 85 percent of bank assets.

The plan offers a new question to how an unweighted leverage ratio and some risk weighting of assets can be used in tandem. The conventional dual standard bank capital model has been a failure. The leverage ratio gets much closer to what you want from a single minimum capital requirement. And the proposed risk surcharge compensates for most of the weaknesses in the existing stress tests.

The plan would steepen the leverage ratio schedule for G-SIBS and therefore provide the necessary price incentive to induce these banks to decrease over time, the size of their footprint.

The likely objections to the plan are not persuasive. Recent empirical evidence strongly suggests that if the plan were to shrink the size of the largest banks, the banking system, and the financial system as a whole, the results would not be adverse for U.S. macro performance.

This is because the United States has already passed the point where without subsidies getting bigger generates increasing returns. Of the potential objections, the weightiest one is the hike in capital requirements for banks could induce increased migration to the bank, shadow banking system where regulation is laxer.

Even though the size of the cash like part of the shadow banking system has fallen from its pre-crisis peak, this risk has to be taken seriously. Here I propose a backup contingency initiative to better run proof the shadow banks.

The initiative owes to former Bank of England Governor, Mervin King, who calls it, the pawn broker for all seasons, or PFAS for short. And Mervin was just speaking here about a week ago at our Niarchos Lecture.

At the heart of the PFAS is a limit on the amount of short term liabilities a bank or a shadow bank can issue. These liabilities cannot exceed the sum of reserves held at the central bank, plus the estimated value of haircut adjusted collateral position with the central bank.

This PFAS liquidity reform would be a valuable compliment to the higher capital solvency plan outlined in the book. It could replace the liquidity coverage ratio and the net stable funding ratio, which apply only to banks.

The G-20s total loss absorbing capacity initiative, TLAC for short, also sets higher minimum capital standards for G-SIBS and would add minimum requirements for the sum of contingent convertible bonds and for subordinated debt to the mix.

TLAC is not a good substitute for the plan. The minimum leverage ratio for G-SIBS under my plan is 14 to 18 percent versus about 79 percent under TLAC. My plan therefore provides much greater loss absorbency.

Equity already in place is superior to a bond that converts to equity under a set of pre-specified criteria. Setting the trigger for bail in bonds at the right level is tricky. Pure equity has no trigger issue. It already is equity.

Bail in bonds have a much higher probability than equity of being bailed out in a severe crisis. Ask yourself, which is going to produce the better crisis dynamic? Trying to bail in bondholders in a severe crisis when banks are trying to keep their funding sources from drying up, or having a comfortable equity cushion in place and allowing that cushion to be drawn down to offset losses.

For all the additional risk the TLAC brings with it, it is not much cheaper in terms of the effect on overall bank lending rates and the level of real GDP. If the macro economic effects of a 14 basis point increase in overall bank lending rates implemented gradually over a decade is barely detectable, the macroeconomic savings from a rate rise smaller than that under TLAC would be virtually invisible.

TLAC is penny wise and pound foolish. Let me stop here.

Tom Hoenig:

Well Morris, let me just say, I'm sure glad that you came out of retirement because I've been looking for this book for a while as you will, as you probably already know, given our conversations.

And I want to recognize that what this does in an important way, is codify a lot of research that's been done at different places into this single, very useful book, from my perspective.

I want to start out by also admitting that I think that the stress tests that were done during the height of the crisis here in the U.S. was helpful. I think they can be helpful, but I think they have a limited purpose. As time passes their value dissipates fairly quickly as I'll explain.

And the way I best describe that I think is I've come to say from time to time perhaps somewhat in jest and somewhat cynically perhaps that Basel has become a game to be played, not a rule to follow. Because once you set it in motion, then to get around it becomes a real process of gaming the system, which happened before the crisis, and has happened since the crisis.

I think it's both important that we look at Morris' proposal because [inaudible 00:38:25] finding a remedy to the weaknesses in both regulatory capital measurements and stress testing are absolutely essential if we're going to maintain a system that can withstand the next shock.

I remind you that when entering this financial, this last financial crisis our largest banks had only three percent tangible equity capital. Their losses in part were over 6 percent. And thus necessitated a larger bailout. And the bailout was far larger than the part would represent. If you look at the amount of liquidity that had to be poured into the system from various sources at both the Federal Reserve and the FDIC for example, here in the United States.

Today, based on capital index that uses international standards that Morris' book refers to, the same firms have only 6 percent tangible equity, and therefore probably would need another bailout because it would dissipate their capital and who has confidence in something that isn't negative is still a zero. I think we would have a major problem on our hands, even today.

I think it's also important that when you think about it, the amount of support was over \$3 trillion dollars, incredible amounts of support. And also recognize that in a capitalistic system, failure is inevitable. We will have failure again. We cannot prevent them, but we can take steps to reduce the probability of defaults, and the contagion effects of precipitated bailouts by requiring more owner tangible equity. And that that be put at risk rather than debt or the government backstop.

This value of equity has been proven time and time again in markets. Morris points out, and he points out well, the significant variation in the risk weighting and risk weight densities of assets within and across jurisdictions.

Also many banks at the time, and many still today show wide disparity between their risk weighted capital ratios and the leverage ratio as they push to get leverage up.

He makes it clear that during the crisis rather than these inevitable measures, the market looked to the measure of tangible equity capital. If that's what's being gauged in the crisis, then that's what we should be using all time throughout the cycle. Not a risk weighted capital measure that is adjusted, gained and becomes very unsatisfactory with time.

Unlike risk weighted capital, leverage ratios, even recognizing its limits, sets a level of capital that must allow for any source of loss. In other words, it doesn't try and be so scientific that it can identify the specific issue that the bank might face.

It, by its level, recognizes that there is market, liquidity, operational and credit risk that has to be allowed for. And that's what leverage capital ratio does. If set at a level that the market and more recent research indicates, and I use 10 percent, and I think the 15 percent is probably more accurate, there would be a much better chance that the industry can absorb loss from a firm's failure and contain the resulting contagion and economic stress.

Morris does an excellent job at explaining and describing all the different measures of regulatory capital that are disclosed and used as hurdles in stress testing regimes. He validates my long standing belief that our current system is too complicated and that we must move to a simpler, comparable leverage ratio, supplemented by strong supervision. I think that will make an enormous difference.

He points out that netting of four derivatives in the U.S. is too generous and can add as much as 230 basis points to a leverage ratio for a \$2.5 trillion-dollar bank. This is why I prefer the international financial standards, which recognize only payments netting, and not netting of credit across different contracts. Where an interest rate swap is netted against a credit default swap for example.

Regarding stress testing further, I am a pro for it. But it is a bank managements tool used to understand the balance sheet and income stream vulnerabilities that they face and to more successfully allocate capital based on managements educated perception of risk.

When it becomes a supervisory instrument to judge and determine bank management choices, it becomes a game to play and will be compromised in time, as proven over and over again in past periods of stress.

Also as he points out, a major weakness in the design of the stress test today is that it does not account for the fact that actual losses would have been so much greater had the government not staunched the crisis with massive financial support. You just cannot ignore that fact when you say, it was all repaid and everything is fine. It would not have been without that and we'll repeat it again if we don't get the capital levels up in these institutions.

Additionally, a stress test is not useful if the hurdles that are set are too low, or based on risk based ratios that are subject to manipulation. And the stress tests themselves eventually become an academic exercise, rather than a gauge of safety, soundness and financial stability.

It is a nice idea in concept, in theory, but in practice it tends to fail as time passes. Regulators should not be designing and forcing scenarios upon banks. This approach has the same inherent weakness and ineffectiveness as pre-weighting assets under the risk weighted proposal.

Management should do that. We have a supervisory process, which itself has to be strengthened to judge the effectiveness of their scenario testing and their capital positions subject to those tests. We can do that, I think, systematically.

To wrap up though, Morris proposes a system of progressive leverage ratios and some risk fees for the large [inaudible 00:45:10] and for these largest banks I think it has very reasonable sense to it. But I will tell you that I would be very satisfied in the end if we had a leverage ratio for the largest, most systemically important institutions that was as strong as the leverage ratio we require for the least systemically important institutions and those banks. And that's the ten percent number.

We are at six percent. The least systemically important institutions in this country are around ten percent, we have a ways to go. And if you were to apply the 10 percent number to the total assets of these institutions today, it would require that they increase their capital on the order of a half a trillion dollars, \$400 billion dollars.

Morris, that's why you have this significant resistance to a very good plan that would give us stability for a long time in the future. And I wish you all the luck in the world. So far, I haven't been too lucky. Thank you all.

Mr. Dell'Ariccia: Thanks for the invitation. I have a few slides. I'm probably more of a nerd than the two previous speakers. I have a hard time speaking without a

chart on a screen. This is a great book. And it's timely, Morris mentioned all the pressure set around coming to bear on the recent regulatory reforms.

And I have to say, I agree with most of his recommendations. By the way, these are my remarks, not those of the IMF, please. And yet I have to do my job as a discussant and find a few points in which I can at least disagree partially, or at least play devil's advocate.

So I want to focus on, in particular, on the proposals, on the level and the use of leverage ratios relative to the kind of regulatory framework. And to do that, so one first reflection is should we think about capital as sufficient to avoid the crisis absent any kind of policy response.

And I think Morris sets this question the right way in terms of, based on the stated purpose of the current regulatory framework, that should be the standard. We put a lot of strains on the ability of authorities to bailout a financial sector.

And so the level of capital required in the case of a crisis should be higher than even what we have seen in past crisis. But more generally, I think that we should reflect on whether we are positioning the system at the right point, on the tradeoff between the implicit costs in terms of moral hazard and re-shifting associated with the expectation of bailouts. And because in terms of spillovers into the real economy that they'll also see [inaudible 00:48:31] bailings.

And let me show you a picture about the potential moral hazard, these are the CDS spreads of major U.S. banks in the run-up to the crisis. And as you see, until the fall of '07, there is essentially no variation across banks that perform very differently when the storm came.

So the ability of the market to discipline banks [inaudible 00:49:03] even absent an expectation of bailouts, it is at least to be questioned. Unless you believe that the difference between say JP Morgan and Citigroup emerge all on their behavior between September '07 and the middle of '08, which I think is a hard proposition to prove.

Now one could say well, the spreads were compressed exactly because people expected a bailout of the weakest institutions, but if you look at what happened to these spreads in '08, you would see that that's, again it's a proposition that you cannot support with the data.

So from the point of view of moral hazard associated within public intervention, it's not obvious on the point that we're speaking that there is a big effect. I think there is much better evidence that there is a large effect

on the ability of this institution to level out. And because of that I think that Morris' point on leverage ratio is spot on.

So I have capital and arguably TLAC, and I'll suspend judgment on that, I have a job that I need to keep. Reduce, you know, I'm supposed to reduce spillovers. If you hit equity holders hopefully they are not as levered as other institutions and so if there is a loss, there would be much smaller multiply in terms of the effects on the real economy.

And at the same time there is a little bit of a [inaudible 00:50:39] critique that Morris' proposal is exposed to once you have banks with much higher capital. They will tend to take less risk and so maybe we are underestimating the benefits of increasing capital just a little bit.

So the evidence on costs, so higher capital is rather inconclusive. You can divide a [inaudible 00:50:59] to two big branches. One essentially relies on generally calibrated models so that calibrated and based on those models the cost of capital for the real economy is essentially at zero. But it's very, very close to zero and could be offset through monetary policy.

There are other papers that rely on events that is based on reducing [inaudible 00:51:22] regulatory interventions on specific banks, that is a largely [inaudible 00:51:26] based on FSA actions in the UK. And on those papers the effects of high end capital are enormous.

And so the joke I always make is that if you rely on the first papers, we should have forty percent capital. And if you rely on the second ones, we should go to zero because the effect on the real economies are so large that why not to count them all together.

And probably the truth is in the middle. But consistent with what Morris said, let me show you a chart and here, I'm quoting for the U.S. and Europe, the tier one capital ratio in '04 and 2014, the columns in the middle are the intermediation margin on average, and the last one, they basically credit to GDP ratio.

And you see there we increased dramatically, the capital ratio for banks and depending on your views on how effective these ratios are, you can think the banks were playing with the numbers then, they are playing with the numbers now, hopefully less now than then. So the increase in capital ratio in real terms is probably larger than this. But we haven't seen a big effect on either intermediation margin showed on the credit to GDP ratio.

Now warranted monetary policy conditions have been very different and so this is not a true economical test, but at least it passed this mild test of saying, well it's not the end of the world when we increase capital

requirements. And if we increase them by another five percentage points, probably will still not be the end of the world.

So let me now switch to how Morris' numbers compare to what we computed for an IMF study that we published about a year ago, actually we presented here. So if I take Morris' leverage ratio, which depending on the categories of bank is between 10 and 18 percent, and I do an exercise where I essentially look at bank losses in past banking crisis around the world.

And then I say well, ideally, if before this crisis these banks had on average these leverage ratios, in how many cases we would have avoided to impose losses on creditors. And you see that even with a 10 percent, these are for OECD countries, for our baseline perimeters that are a loss given default to 50 percent on number [inaudible 00:53:56] loans, you get to avoid about 80 percent of the banking crisis.

For more stress perimeters, we have the loss given default at 75 percent, you are at 70 percent, and certainly if you look at the upper end of the Morris' proposal, you avoid almost all of them. You can do a similar exercise starting from a completely different point of view which is bank recaps. And here the question you ask is if you look at episodes of public recapitalization of banks and you ask the question, how much equity would these banks need to be at this level during the crisis so that the public recap would not be needed. And you see that the numbers again are very similar to the previous exercise even if we started from a different primitive.

In our paper, we were recommending capital asset ratios between 15 and 22 percent. These are higher, I adjusted our scale to talk about leverage, these are a little bit higher. I would say 5 percentage points higher on average, maybe 7. But the ballpark is very similar.

So from the point of view of OECD, these are numbers that at least based on historical averages, would indeed shield the banking system from the vast majority of shocks.

So what about emerging markets? Well in emerging markets, shocks are larger. Typically, corporate governments and property rights are harder to enforce and so banking crises stand to have much larger losses. Now the silver lining is the banking systems are much smaller relative to GDP and so when you look on the impact on the real economy, the same losses is going to be smaller.

So the leverage ratios that Morris proposed here, I'm quoting them, these are MPLs in most banking crises. I don't know why some of the columns, there are white, but I think those are blue. At 15 percent with a 75 percent

loss given default, as you see they would have avoided most of the red columns, which are OECD countries, but from the point of view of emerging markets, that leverage is probably too low.

Even with only a 50 percent loss given default, which is the yellow higher line, you still avoid only about 50 percent of the crisis. Now last point on the re-surge. I mean, we all agree that if we focus on, if we focus on leverage ratio there is the risk that banks will go for maximum risk within that leverage ratio.

And so you need to have some degree of re-sensitivity, and I want to raise two questions more than objections to Morris about this. One, the political economy of time [inaudible 00:57:04] and regulatory ratio is very tricky and I think Stan can attest to this. When you try to say tie down LTV in the macro [inaudible 00:57:13] area, but in this case would be tightening risk weights because you think that credit is going too fast. Maybe avoid a crisis and then tomorrow there is no crisis and people will tell you, well you were paranoid, and you kill our growth with no reason.

It's very different from inflation where you can point exactly that inflation is right below the target, and if you hadn't tightened we would have inflation above the target. It's not the acceptability of the crisis that doesn't happen. That makes the governance very, very tricky.

And at the same time, this yard stick approach of comparing one bank to the other may prove challenging mainly because banks will tend to move together. And in tranquil times, and let me show you something, so this is the CDS ratio for, I think, the top 20 banks. The blue line is the average and those are confidence intervals essentially. So one standard deviation.

And if you look at how tight the standard deviation becomes in tranquil time. But before the crisis in '07 and today, you see that it may be tricky to use comparisons across banks to force a bank to hold higher capital. Now if you look at self-assessed re-staking by the banks, these are data from the Fed -- this is a survey of business lending, and it's the average internal rating of how risky a new loan is.

And again, with the one standard deviation around it, if you look at that maybe, maybe there is enough cross-section heterogeneity to do yard stick competition and use that to calibrate rate surcharges at the bank level. And I'll stop here. Thank you.

Adam Posen:

Thank you very much Giovanni. Thank you very much Tom. And thank you especially, Morris. Amidst all the technical discussion and the charts and the use of jargon, which was admirably minimized, the bottom line that all three of our speakers said, the current capital ranges are not sufficiently safe for the big banks was pretty clear.

Regulatory fatigue and whoever's in congress, that's something people have to face up to. So Morris, as you get mic'd up, is there anything you would like to say in direct response to the questions or comments from your discussants?

Morris Goldstein: Thanks, Adam. Well I want to thank Tom and Giovanni for those very thoughtful comments. I mean, they're really very helpful. Let me just be brief but address a few of them.

Tom and I have been strong adherents of higher capital for some time so it's not so surprising that we agree on probably 90 percent of what the reform plan ought to look like. I think Tom has a plan that came out after I wrote the book in March, a revision which lays out things and I commend it to you to look at.

So on most of the things we're pretty much on the same wavelength. Two places we differ I would say. One, Tom is not a fan of stress testing for regulatory purposes. And I wouldn't say I'm a fan but I'd say I think it's very useful, warts and all. I mean I spent a lot of time explaining in the book how I think it can be improved.

But to not use it, I think, is a mistake because I think it has a lot of advantages that you won't get just out of the bank, the Basel Ratios. One of the things, I think, have been most useful for it is that it has tied the decisions on capitalization to dividends and shared buy backs.

The big problem you have, even when banks are profitable, is they give all this stuff back in terms of dividends and shared buy backs. So you don't build capital, and you have to find a way to discourage that, a practical way.

And I think the stress test can do that, because you're under the spotlight, if you don't hit the error rate then the Fed says well, no, you know, can't do that distribution. I would like them to be a lot tougher than they have been but I think that's very useful.

I also think the stress tests are useful for envisaging scenarios that you won't see in the data. You know, you won't see Brexit in the data, you won't see all kinds -- you won't see the drop in the Chinese growth rate. There's all kinds of things that you can't get out of the historical data.

And the things I think that you can do with stress tests. So I like to have them both. I would like to have my cake and eat it too. I like to have the higher capital ratios come in over time and then I want them reflected in the hurdle rates and the stress tests because that way I think you get the

best of both worlds. And I don't see why you have to have one or the other.

The other place perhaps where Tom and I a little bit differ is Tom, I think, thinks that the leverage ratio, well the higher leverage ratio, plus supervision will do the job. And I like that there's some risk surcharge in there based on a set of indicators. Because I think as I mentioned in my remarks, what you--, there are some shortcomings to stress tests and you can take care of some of that by putting in indicators.

One of the things that's very important is when you're thinking about systemic risk is does a bank fail just on its own, sort of in a sea of tranquility, or did it fail at the same time that other banks fail? And there are measures to look at that. And they make a difference. And you don't get that in a lot of sort of static capital ratios. So that's a big advantage. Plus, the risk changes over time, as Giovanni mentioned.

So that you also want to pick at. And supervisors look at those things and they have areas where they think there are problems and there's no reason why you can't get those in. And for all the problems, you could get something out of risk weights if you use the standardized approach. I think, not let the internal models of banks run the show, you know. We have those internal models, we had enormous manipulation.

Giovanni made a number of good points. And let me just address a couple of them. He talked about you know, what should capital do, and what should other instruments do. Well you know, I'm all in favor of having, you know, when you have a crisis, you have expansionary and monetary policy, expansion of fiscal policy, you have lender as last resort.

But what you can't have, and what leaders have pledged not to have is we can't have public bank recapitalizations, we can't have guarantees, you know, the vast web of guarantees. These are extremely important in a crisis. You know, we guarantee money market funds, it's a huge thing. We had guarantees on [inaudible 01:05:10] Bank. You know that's powerful as a capital substitute in the middle of the crisis because you're putting the full faith and credit of the United States behind those institutions.

So that's important, that's what you don't want to do. When I think about the counterfactual, I'm mainly thinking about those kind of things. Giovanni has a very nice paper, which he gave a couple of charts from, where you go and try and calculate what the losses would have been.

I put a lot of weight on losses properly measured during the last crisis. Because I think that's the best comparator. But to Giovanni's credit, it's one of the few studies that instead of looking at the global average, looks

at the worst losses during. Not the average loss, the worst ones. So they picked those out and that's how you get to his charts.

Well you know, if you wanted to cover 85 percent of these cases, how much would you need? The only problem with that methodology, is it's very dependent on whether those extreme cases are relevant for the United States. Let me give you an example.

The case that has the biggest loss is Iceland. I think that's like forty percent of the total assets. Well in Iceland, you know, it's a small country with enormous banks. The three largest banks represent 90 percent of bank assets. In the United States, the similar ratio would be thirty percent.

So no matter how much we screw up I don't think we could get to Iceland. So I don't need quite enough to do Iceland, then we get to you know, Japan and Korea, which are pretty big losses, near the top there. Well do you need enough to cover Japan and Korea.

Well Japan you know, has some things similar to us, but also some differences. Took a very long time to deal with that crisis. They didn't do any structural measures on growth. Well you know, they just let these zombie banks go for a very long time.

The United States, we screw up but in general we fix it quicker. So, and in Korea, you know, you have all foreign currency loans and you have a bunch of other things. So you know, the trick I think you know, I commend them because they look at the worst cases. They don't do the global average game.

But when you look at the worst cases, and this is also true in the Minneapolis Fed study, you have to find the ones that are relevant for the comparison that we're doing. And when you do that, I've looked at those, I think ones that are good comparators for example is Scandinavian banking crises and the like.

Then I think you get a number closer to fifteen percent. On the losses, well it's true in cost of higher bank capital, well you can look at different things. I think a big element that's fairly new, is the new work on the effect of higher capital on debt financing costs. That's [inaudible 1:07:55] at the BIS and other people.

There's a big difference. If you take the effect of a higher capital on what the debt financing costs are, that pushes that number way down. You know, a hundred basis points of leverage, you get three basis points increase in bank lending rates.

That's a lot different than 10 or 15, and I think that's good, you know, it needs to be tested more to see how robust it is. But that's very good, very good stuff. Over time, whether you can vary these things, or whether can do these risk surcharge, time will tell. But and in terms of bank by bank results, the Fed is now incorporating, they're going to replace the capital conservation buffer with a bank specific charge that will be equal to the decline in your capital ratio under this severely adverse scenario.

So I think they're moving in that way. I think we can get to the indicator system. As I say finally in the book, I'd like to see some of this stuff while I'm still above ground. But remains to be seen. You know, whether how long this is going to take to get. I think we're half way there, what we don't want to do is go backwards. Let me stop there.

Adam Posen: Thank you Morris. And we're very glad that we have the book out while you're still above ground. And that gets us halfway there. That gets us halfway there. Let's open up for discussion. We have such a great group of people attending. As usual, Jessica's in front with a roaming mic, people seated towards the back can go to the standing mic. When recognized, please state your name, affiliation, and pretend you're asking a question. Please.

Ms. Griesgraber: Jo Marie Griesgraber, New Rules for Global Finance. And speaking for 25 percent of the female population in the audience. I'm wondering, I do have a question Morris. I would really like to ask you to review the methodology for regulating shadow banks. It's in your book, you presented it, but the majority of your presentation was on banks. Can we learn more how to control shadow banking, thank you.

Adam Posen: And do we need to control shadow banking as much as we control banking?

Morris Goldstein: Well others may have different views, and I'd welcome those. I think you do have to do something about the shadow banks. I mean, we had a problem with shadow banks during the crisis. Many of the you know, biggest cases were not banks.

So you have to do something about that. And you're going to be, if you went raising up the capital ratios, well you're going to get more migration. We've got a fair amount of migration with lower capital ratio, so that's a big issue. I don't think you could skirt it.

There's a lot of proposals out there of what you might do to stop runs in the shadow banking system. Of the ones out there I like the Mervin King one because it's fairly simple. It says look, if you're going to issue short term debt, that's a year or less, there will be a limit on it and the limit is equal to the amount of reserves you have at the Fed, plus the assets you

place at the Fed, which you get an estimate of what they think they're worth, the haircut value of those. And you add those two together and that limits how much short term debt.

Because it's the short term debt that drives the runs, and it's the runs in the shadow banks that are the main problem. So I think you know, of the ones out there, there have been some other proposals like in the Minneapolis Fed they use some tax on borrowing rates to try and make it similar between banks and non-banks.

But I think the Mervin King one is the simplest that I think will do the job, which is basically stop the runs, those shadow banks have decreased in size since the crisis. But I think you need to do something. So anyway, that's for the run problem, I think the Mervin King thing is preferred.

Adam Posen: Giovanni or Tom, do you want to add anything on this topic?

Tom Hoenig: I'll say a couple things on the shadow banks. I know that they are, well in many ways, an issue. But first of all, prior to the crisis for the shadow banks we're talking about, Bear Stearns, Lehman and so forth, those were institutions that were regulated, they actually were allowed to, we lowered the prudential standards around those institutions by allowing them to lower their capital, they are specifically allowed that.

And then we allowed them to use long term assets to secure overnight funding, so we created a bank out of a non-bank. And then we kind of walked away from it. And so now the counter party to those were usually banks, that's another reason why we bailed out them, and things like that.

So you have to, it's not just that they're there, it's how they are dealt with. If they're subject to really market discipline, which they have been but then you put regulation in the middle of it, you can get things very confused.

The money markets are another major issue right now, and again, I think if they are as they were presented, that is they were matched by very short term assets and so forth, you get one outcome. If you allow them to begin to drift towards bank like activities, where they purchase assets, so on and so forth, you get other outcomes from that.

So my point is, we can regulate, the more we choose to regulate these institutions and the more we make them bank like, the more we cast the safety net around them, which creates even more moral hazard. So I think we have to be careful as we talk about these shadow banks and how far do we want to go with them as we look at this very difficult problem. But I think you want to be careful of how broadly you want the safety net to be.

Adam Posen: Great, thank you. Another question for Morris or the discussants? Please.

Martin Bailey: I'm Martin Bailey of Brookings and a former colleague of Morris', and I look forward to reading your book. I'm sorry, I haven't had a chance to read it. So my question is, what do you see the banking industry look like if your recommendations are adopted?

You mentioned the Sarin-Summers paper, and you mention it sort of approvingly, I just looked up the references. Because they argue that the banks are not as safe as people think they are. And the reason they think that is because the market value of equity, roughly speaking, they look at a number of tests, but the most important is that the market value of equity was below the regulatory capital, or the book value of equity or essentially the regulatory capital.

So what's the rate of return that you anticipate banks will be required to earn by capital markets in the U.S.? I mean traditionally the required rate of return on equity has been ten percent. Now interest rates have been lower and maybe there's a nod to Modigliani Miller, but I'm curious as to how low you think that required rate of return would be. If it's eight percent and then we think about adding you know, 400 billion of extra capital or whatever the number is that it's going to be, then the banks would have to make what level of profits, and is that feasible or are we just going to get a banking system that's half the size of the one we have now, and is that okay?

I'm just curious if you lay out in your book, or if you could expand a little bit on what the banking system looks like with these higher levels of capital in terms of size and profitability and so on?

Adam Posen: Thank you, Martin.

Morris Goldstein: Well I do go into it some. A big issue—Sorry. Did something happen?

Tom Hoenig: Did something happen?

Morris Goldstein: Oh, okay.

Adam Posen: It was Tom, it was Tom, he's accountable. He failed the stress test.

Morris Goldstein: Okay--

Tom Hoenig: But I admit it.

Morris Goldstein: The Sarin-Summers paper uses all these market measures and you know, when the market is under, when the market is valued banks are very lowly,

well then they look very bad. And when you know, you get a run up in equity prices as we've had since the inauguration, they look much better.

Yeah, yeah, so you know, this is, the problem with book values is they get out dated often and use the market ones, they're more current, but you know, as a former colleague of mine, Musa used to put it, sometimes the markets go nuts and in various ways. And so they'll just get reflected in the prices you're going to use so could do that.

The question about, you know, what's the future going to be and if we put these higher capital rates on and activity moves out of the banking system, or I even consider the possibility, it moves not only out of the bigger banks, out of the banking system as a whole, and out of the financial sector as a whole.

You know, the implicit argument for why you need a certain rate of return, I mean, return on equity is you think that if the size of the financial sector shrinks, it's going to be bad for growth. And there's a whole new literature on that, called Too Much Finance, often called Too Much Finance Literature, and I review that.

And you know, I think it's a fairly new literature so there is some question is about how robust it's going to be. But I find the main papers in that, which are about three or four of them done with different samples look reasonably robust. And what they basically say is we've gone too far.

First of all, we're not getting economies that scale in the largest banks once you take out the effect of subsidies. Second of all, within the size of the financial sector, having a larger banking share is not helpful. And then finally, in the financial sector you add all those together you know, it's very different than the Levine King sort of literature, which said well, the larger that is, the total size of the financial sector, the better it is for growth.

What this literature says is we have a curve and we're past the point where we're getting further contributions. So we're getting contributions. So within a certain limit, if that shrinks, I don't think it's a problem. You know, we'll have a smaller banking system, we'll have a lower rate of return, there will be less resources in that sector. So I present the evidence there. You can read it, see whether you buy it.

My colleague for example, Bill Kline, doesn't buy it. I mean, he finds that literature not to be robust and doesn't like it. But I differ on that. I find it to be reasonably informative and I think makes some sense. So I think that's the answer to your question.

Adam Posen:

Thank you all very much. I'm afraid we're past our witching hour. I am grateful to Giovanni and Tom, in particular for giving support not just to Morris throughout the creation of the book, but to giving it a proper launch. I'm grateful to Morris' family for letting him benefit us and the world by dipping a little bit out of retirement. And I'm grateful especially to Morris Goldstein, for giving us the key book on the key question. This meeting is adjourned.

