

# Withdrawal/Redaction Sheet

## Clinton Library

| DOCUMENT NO.<br>AND TYPE | SUBJECT/TITLE                                                                         | DATE       | RESTRICTION |
|--------------------------|---------------------------------------------------------------------------------------|------------|-------------|
| 001. email               | rlutter@aei.org to Janet L. Yellen at 17:41:56.00. Subject: Cancelled essay. (1 page) | 09/29/1998 | b(6)        |

### COLLECTION:

Clinton Presidential Records  
Automated Records Management System [Email]  
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OA/Box Number: 950000

### FOLDER TITLE:

[09/23/1998 - 10/04/1998]

2013-0723-F

ab1286

### RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

Freedom of Information Act - [5 U.S.C. 552(b)]

P1 National Security Classified Information [(a)(1) of the PRA]  
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]  
P3 Release would violate a Federal statute [(a)(3) of the PRA]  
P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]  
P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]  
P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

b(1) National security classified information [(b)(1) of the FOIA]  
b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]  
b(3) Release would violate a Federal statute [(b)(3) of the FOIA]  
b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]  
b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]  
b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]  
b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]  
b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Ryan D. Edwards ( CN=Ryan D. Edwards/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:23-SEP-1998 09:30:33.00

SUBJECT: Re: EPC dates for 1999, etc.

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Sure; I'll let you know what she says.

-Ryan

To: Ryan D. Edwards/CEA/EOP

cc:

Subject: Re: EPC dates for 1999, etc.

The dates look fine to me; however, I am surprised that the Spring EPC is as late as May 6. Usually it occurs in April or even March. Could you ask Martine if there is a Ministerial planned in 1999 and if so what the likely date is for that? Usually the Ministerial is in May.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:23-SEP-1998 09:28:18.00

SUBJECT: Re: EPC dates for 1999, etc.

TO: Ryan D. Edwards ( CN=Ryan D. Edwards/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

The dates look fine to me; however, I am surprised that the Spring EPC is as late as May 6. Usually it occurs in April or even March. Could you ask Martine if there is a Ministerial planned in 1999 and if so what the likely date is for that? Usually the Ministerial is in May.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:23-SEP-1998 11:14:27.00

SUBJECT: Knollenberg

TO: Quindi C. Franco ( CN=Quindi C. Franco/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

CC: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TEXT:

I just gave a talk at the National Press Club, in a seminar on Kyoto sponsored by American Council for Capital Formation.

Notable occurrence: Congressman Knollenberg was the first speaker. He explained how terrible Kyoto is, and explained his proposed legislation to limit Administration activities and speaking in advocacy of it. I said that I was speaking in the next session, and presumed I had been invited by ACCF to represent the Administration viewpoint, which was in favor of Kyoto. I asked whether I would be prohibited from doing this if his legislation were in effect. He basically said "yes." I think the audience -- who probably tended in the anti-Kyoto direction in general -- were appalled.

JF

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Rebecca M. Blank ( CN=Rebecca M. Blank/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:24-SEP-1998 10:31:35.00

SUBJECT: Today's remarks

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Bert I. Huang ( CN=Bert I. Huang/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

Alice Williams ( Alice Williams [ CEA ] )

READ:UNKNOWN

TEXT:

Ok, here's the final version. FYI, Janet, Michele told me to take out the definitional sentence which distinguishes between household income and family income -- she said the press could ask about this, but it's too much detail for the statement. Also FYI, it appears to me that the Census has an error in their publication relating to this female headed families/households poverty number. They do have a different poverty rate at two places under a slightly different label (the 3.2 versus 4.4 that we were talking about) -- but the population numbers are identically the same. I'll call Lee Price at the Census about this.

Michele -- you'll get this out? Thanks.===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D17]MAIL46997566N.226 to ASCII,  
The following is a HEX DUMP:

September 24, 1998

**Statement of Janet L. Yellen  
Chairman, Council of Economic Advisers  
Income and Poverty Reports**

Today's report from the Census Bureau shows that our vibrant economy is boosting income and reducing poverty among Americans of all backgrounds. In particular, many of our most disadvantaged groups have seen the greatest gains, which is very good news.

Incomes rose for the typical American family between 1996 and 1997, with particularly large increases among lower income groups. In particular, incomes rose rapidly among black, Hispanic, and single-mother families. And as incomes rose, poverty rates fell.

Income and Earnings Gains

Income is defined as all the money income before taxes that a household or family received in the 1997 calendar year. By definition, half of all families have higher and half have lower incomes than the median family, so we think the median family represents a typical American family.

It is important to note what income does not include: It is measured before taxes, and does not take account of the recent large expansions in the Earned Income Tax Credit which has provided additional income to large numbers of working low-income Americans. It also does not count the substantial levels of non-cash assistance received by many low-income American families, through such programs as Food Stamps, housing assistance, or Medicaid.

Today's report indicates impressive gains in income among Americans over the past year.

- Median household income increased by 1.9 percent between 1996 and 1997. Median family income rose by 3.0 percent, which is an increase of nearly \$1,300 dollars between 1996 and 1997, more than during the previous two years combined. The typical family now has \$3,500 more income than in 1993.
- These gains are also reaching across our diverse population. Black and Hispanic households, for example, made some of the most impressive advances this year. Median household income grew by 4.3 percent for blacks and 4.5 percent for Hispanics. In fact, median Hispanic household income has risen faster over the last two years than at any time on record.
- Single mother families, who are among the poorest groups in our society, are also sharing in these gains. Families headed by women saw income gains of 4.4 percent between 1996 and 1997.

- Today's report also has good news about the earnings of American workers, and shows strong growth in median earnings. Among women who work full-time and year-round, earnings rose 3.0 percent, while men working full-time saw a 2.4 percent earnings increase. Increases in earnings are particularly good news because they indicate that Americans are doing better by earning more for every hour that they work.

### Poverty Declines

As income is rising, poverty is declining. The poverty rate is the percentage of Americans who live in a poor family. A family is considered poor if its income falls below the official U.S. poverty line which depends on family size. In 1997, a family with two adults and two children was considered poor if their income was below \$16,276; a family with one parent and two children was considered poor if their income was below \$12,931. There are other ways to determine who is needy, but we find the poverty rate useful because it is a consistent measure from year to year.

- As incomes have risen, poverty rates have declined to 13.3 percent in 1997, down from 13.7 percent in 1996. Nearly 1 million fewer people were in poverty in 1997 than in 1996.
- The poverty rate for blacks is the lowest on record, and Hispanics saw the largest one-year drop in 20 years.
- Although child poverty remains a serious problem, fewer than 1 in 5 children are in poverty for the first time in nearly a decade. Meanwhile, poverty among the elderly has returned to its record low.

Clearly, the benefits of our strong economy have been shared by all groups of Americans over the past year. Today's report shows that robust economic growth, supported by wise economic policy, can benefit American families, including those in greatest need.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Rebecca M. Blank ( CN=Rebecca M. Blank/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:24-SEP-1998 09:53:03.00

SUBJECT: Your remarks

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Bert I. Huang ( CN=Bert I. Huang/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Here's a draft of your remarks regarding today's income and poverty  
release. Let us know if you want any changes.===== ATTACHMENT 1

=====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D0]MAIL486345664.226 to ASCII,  
The following is a HEX DUMP:

DRAFT

September 24, 1998

**Statement of Janet L. Yellen  
Chairman, Council of Economic Advisers  
Income and Poverty Reports**

Today's report from the Census Bureau shows that our vibrant economy is boosting income and reducing poverty among Americans of all backgrounds. In particular, many of our most disadvantaged groups have seen the greatest gains, which is very good news indeed.

Incomes rose for the typical American family between 1996 and 1997, with particularly large increases among lower income groups. In particular, incomes rose rapidly among black, Hispanic, and single-mother families. And as incomes rose, poverty rates fell.

Income and Earnings Gains

Income is defined as all the money income before taxes that a household or family received in the 1997 calendar year. By definition, half of all families have higher and half have lower incomes than the median family, so we think the median family represents a typical American family. We often distinguish between household income -- which includes all individuals in the population, grouped by their living arrangements -- and family income, which excludes single individuals and counts only related members in any household.

It is important to note what income does not include: It is measured before taxes, and does not take account of the recent large expansions in the Earned Income Tax Credit which has provided additional income to large numbers of working low-income Americans. It also does not count the substantial levels of non-cash assistance received by many low-income American families, through such programs as Food Stamps, housing assistance, or Medicaid.

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- Today's report also has good news about the earnings of American workers, and shows strong growth in median earnings. Among women who work full-time and year-round, earnings rose 3.0 percent, while men working full-time saw a 2.4 percent earnings increase. Increases in earnings are particularly good news because they indicate that Americans are doing better by earning more for every hour that they work.

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- The poverty rate for blacks is the lowest on record, and Hispanics saw the largest one-year drop in 20 years.
- Although child poverty remains a serious problem, fewer than 1 in 5 children are in poverty for the first time in nearly a decade. Meanwhile, poverty among the elderly has returned to its record low.

Clearly, the benefits of our strong economy have been shared by all groups of Americans over the past year. Today's report shows that robust economic growth, if supported by wise economic policy domestically and abroad, can benefit American families, including those in greatest need.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:24-SEP-1998 18:20:42.00

SUBJECT: Proposed Timetable for '99ERP

TO: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Rebecca M. Blank ( CN=Rebecca M. Blank/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TEXT:

Please let me know if you have any changes. I am going to circulate this to staff tomorrow.

Thanks.

----- Forwarded by Michele Jolin/CEA/EOP on 09/24/98  
06:19 PM -----

Michele Jolin  
09/21/98 12:23:12 PM

Record Type: Record

To: Janet L. Yellen/CEA/EOP, Jeffrey A. Frankel/CEA/EOP, Rebecca M. Blank/CEA/EOP, Mary Fibich/CEA/EOP  
cc:  
Subject: Proposed Timetable for '99ERP

Attached is a PROPOSED timetable for the '99 ERP. I would like to distribute it at tomorrow's staff meeting. Please let me know if you have any changes or suggestions.  
Thanks.

===== ATTACHMENT 1 =====  
ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D12]MAIL454303760.226 to ASCII,  
The following is a HEX DUMP:

## TIMETABLE FOR 1999 ERP

|                                     | <u>Chapt2</u><br>(Macro) | <u>Chapts 3&amp;5</u><br>(Aging&Micro) | <u>Chapters 4&amp;5&amp;6</u><br>(Labor&Farms&Intl) |
|-------------------------------------|--------------------------|----------------------------------------|-----------------------------------------------------|
| 1st DRAFT                           | Nov 16                   | Oct 9                                  | Oct 16                                              |
| Comments back<br>from Chair/Members | Nov 20                   | Oct 16                                 | Oct 23                                              |
| 2nd DRAFT                           | Dec 4                    | Oct 26                                 | Nov 2                                               |
| Comments back<br>from Chair/Members | Dec 8                    | Nov 2                                  | Nov 9                                               |
| 1st Interagency Clearance           | Dec 14                   | Nov 20                                 | Nov 20                                              |
| Comments returned                   | Dec 18                   | Nov 30                                 | Nov 30                                              |
| 2nd Interagency Clearance           |                          | X                                      | Dec 11                                              |
| Comments returned                   |                          | X                                      | Dec 18                                              |
| Circulate around WH                 | Jan 11                   | Jan 11                                 | Jan 11                                              |
| Comments returned                   | Jan 15                   | Jan 15                                 | Jan 15                                              |
| TO GPO                              | WEEK of JAN 25-29        |                                        |                                                     |
| Release Date                        | WEEK of FEB 8-12         |                                        |                                                     |

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Alice H. Williams ( CN=Alice H. Williams/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:24-SEP-1998 08:46:25.00

SUBJECT: Poverty Memo to President attached.

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D26]MAIL409524663.226 to ASCII,  
The following is a HEX DUMP:

September 23, 1998

MEMORANDUM FOR THE PRESIDENT

FROM: Janet L. Yellen

SUBJECT: Income and Poverty Statistics for 1997

The Census Bureau will release its annual report of income and poverty statistics for 1997 tomorrow at 10:00 AM. Overall, this report is very good news: *the strong economy is lifting family income and lowering the poverty rate.*

**BROAD-BASED INCOME GAINS**

- **Median household income increased by 1.9 percent.** Income for the median household rose \$699 to \$37,005 in 1997 dollars, regaining the level of the last peak in 1989. While the Census report highlights the household income number, in the past the Administration has pointed to the family income number, which excludes single individuals and counts only related members in any household. The report shows that median family income was up 3.0 percent or \$1,297 last year and is now \$3,517 higher than it was in 1993, after adjusting for inflation.
- **Black and Hispanic households showed even larger increases.** After adjusting for inflation, median household income grew by 4.3 percent for blacks and 4.5 percent for Hispanics. Over the past two years, Hispanic income has risen faster than at any time on record (data first collected in 1972). Since you took office in 1993, the median black household has seen its income increase 15.5 percent (or \$3,354), while the median Hispanic household's income has risen only 4.8 percent (or \$1,208).
- **Single-mother households shared in the gains.** Women heading households with no husband present saw income gains of 3.2 percent among those with families and of 4.4 percent overall, since 1996.
- **Incomes rose in the South, Midwest, and West.** Though median household income in the Northeast remains unchanged, the Midwest and West show income gains of 2.4 percent and 3.1 percent respectively. The South shows the largest rise of 3.6 percent, albeit from a lower income base. People living outside metropolitan areas saw a dramatic income rise of 4.6 percent.

**STRONG REDUCTION IN POVERTY**

- **The poverty rate fell to 13.3 percent, the lowest since 1989.** Down from 13.7 percent in 1996, the percentage of people in families below the poverty line has fallen 12 percent since 1993. In 1997, 35.6 million people lived in poverty — down from 36.5 million the year before and 39.3 million in 1993.

- **Black and Hispanic populations show large drops in poverty.** While the poverty rates for blacks and Hispanics are still very high, the report shows significant progress: the poverty rate for blacks fell to 26.5 percent, the lowest level recorded (data collected since 1959) and 6.6 percentage points (20 percent) lower than in 1993. Last year, the poverty rate among Hispanics fell 2.3 percentage points to 27.1 percent; this was the largest one-year drop since 1977.
- **Poverty also declined among children and the elderly.** Though the child poverty rate of 19.9 percent is still very high, for the first time since 1989 fewer than 1 in 5 children are in poverty. In the past three years, child poverty has dropped more than at any time since the 1960s. The poverty rate among the elderly fell back to its record low of 10.5 percent, after a temporary rise to 10.8 percent in 1996.
- **Alternative poverty measures reveal benefits of EITC.** While the official data do not include the positive impact of the Earned Income Tax Credit, Census does publish alternative poverty measures which allow us to measure the impact of the EITC. Adjusting family incomes for taxes, including the EITC, reduces the poverty rate to 12.7 percent. The EITC lifted 4.3 million people out of poverty in 1997 — more than double the 2.1 million people lifted out of poverty by the EITC in 1993. Data from the report show that in 1997 the EITC lifted 2.2 million children, 1.1 million African Americans, and nearly 1.2 million Hispanics out of poverty.

#### **STRONG EARNINGS GAINS**

- **Earnings grew for both men and women.** Median earnings of women who work full-time and year-round rose 3.0 percent (or \$719) while those of men rose 2.4 percent (or \$792). The median woman still earns 74 percent of her male counterpart, the same ratio as in 1996.

#### **NO IMPROVEMENT IN INCOME INEQUALITY**

- **Income inequality remains near the same level as in 1993 and increased slightly between 1996 and 1997.** Families in all income quintiles have experienced strong income growth since 1993, but this has not translated into a narrowing of the income distribution. Both the distribution of total household income and the Gini coefficient, an index of income inequality, worsened slightly compared to 1996.

As the above points indicate, there are two potential problem areas in the report: (1) Although every income group — from the poorest to the richest — saw their income rise last year, income inequality increased slightly (the change was not statistically significant). (2) While incomes are up and poverty is down over the past several years, the incomes and poverty of certain groups have barely returned to their 1989 levels, and some may claim that many families are no better off now than they were then.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:24-SEP-1998 21:16:43.00

SUBJECT: talking points for OECD sustainable development meeting

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Janet,

Attached are the talking points Steve and I drafted today after our meeting. If you have comments, questions, or would like anything else, please let me know.

Joe

===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D42]MAIL40685376O.226 to ASCII,  
The following is a HEX DUMP:

## OECD Work on Sustainable Development

Sustainable development is a general notion that can mean virtually everything to everybody. Solow noted that “sustainability is an essentially vague concept, and it would be wrong to think of it as being precise, or even capable of being made precise.” However, in general, sustainable development addresses many of the same issues that economic growth theory deals with, namely, the welfare of different generations through time.

### Issues for Discussion

(This follows the 5-page Issues for Discussion document.)

#### Further developing an economic framework for sustainable development

The document poses three key questions for discussion:

- *Do we need a more workable definition of sustainable development?*  
NO. It would be more appropriate to focus resources on specific issues related to sustainable development, such as climate change.
- *What should be the potential for use of an economic framework within and outside the OECD, and what should be its level of ambition?*  
This issue is one where economics has much to add. The discussion of sustainable development has taken place largely outside of the economics discipline, but the dialogue on sustainable development could be enhanced considerably with contributions from economists. OECD is well-suited to advocate continued, rational discussion on sustainable development. OECD should push hard to make economics the foundation of future discussions on sustainable development.
- *What role might the Group have in the development of the framework?*  
We believe that economists already have a useful and informative framework for evaluating issues related to sustainable development (Nordhaus and Tobin). It is important for this group to recognize and advocate for further application of the economic paradigm.

Specific paragraphs in this section:

Paragraphs 2 and 3 provide a sterile discussion of the vagueness of sustainable development, and discussions of workable definitions of sustainable development should be avoided.

Paragraph 4 provides a good discussion of how to focus sustainable development through the lens of climate change.

Paragraph 5 includes a useful section on economics that describes the standard set of economic tools available and that these should be used to address sustainable development issues. However, the discussion on the “precautionary principle” is not necessarily consistent with the traditional view of investment under uncertainty (e.g, Dixit and Pindyck). Further, irreversibility is not a one-sided issue, but that one can make decisions which have “economic” as well as “environmental” irreversible consequences.

### **Integration and co-ordination of work on sustainable development**

We are for coordination. Next.

### **Prioritisation of the global sustainable development agenda**

This section describes four specific projects:

- *Climate Change*  
The broad approach described here and in the discussion paper appears to be an excellent start. We strongly support the work on implementation of the Kyoto Protocol, the assessment of the economic effects of achieving the Kyoto targets, and the very important work on longer-term issues, including developing country participation and a rational approach to the long-term issue of greenhouse gas concentrations.  
  
We suggest several additional topics for work. First, we recommend that OECD assess domestic emissions trading, as well as the very crucial interface between domestic trading programs and international trading under the Kyoto Protocol. Second, we recommend that OECD assess the ancillary benefits associated with reducing greenhouse gas emissions, including improved local air quality. We believe the benefits of improving local air quality due to reduced fossil fuel combustion could be quite substantial in developing countries.
- *Getting Prices Right*  
The broad approach described here and in the discussion paper appears to be an excellent start. We suggest that OECD also consider assessing air quality emissions trading programs (e.g., sulfur dioxide trading in the acid rain program, RECLAIM for ozone pollution in southern California), and evaluate their applicability to other environmental issues and other countries. We recommend analysis to assess the efficiency gains associated with policies that “get the prices right.”

- Technology  
Technology is not a goal, and should not be considered an endpoint for policy. “Technology policy” should focus on the appropriate role of the public sector in R&D (e.g., basic research, R&D involving public goods), the relationship between the public and private sectors in R&D, and getting prices right to stimulate private sector R&D and adoption and diffusion of existing technology. It would be useful to avoid discussion on issues such as “eco-efficiency and resource productivity” since policy goals should focus on larger issues such as economic efficiency and appropriate fairness concerns. We recommend analysis on the effectiveness of non-price policies on stimulating technology R&D and diffusion/adoption, including technology standards, energy efficiency standards, and voluntary programs. This analysis could include an assessment of the cost-effectiveness of these approaches and comparisons with price signal policies.
- *Indicators of sustainable development*  
There is the potential to employ significant resources with little return on this project. If work is going to be pursued on this issue, it is essential to develop an analytically coherent framework for organizing information. The framework for extended GDP accounting can serve as useful starting point. It is not a useful exercise to develop indicators prior to developing a coherent analytic framework.

#### Questions for discussion

In assessing this work program, it is important to prioritize the four projects. The most significant project is climate change analysis. This issue is high on the international agenda and OECD can make a very significant contribution and inform the debate. We also consider getting prices right an important topic, and this issue will be relevant well into the future and across all countries. Technology can be an important project, but there is potential for mischief. Technology work should focus on R&D policy and coordinate with getting prices right. Finally, we see little need for indicators work at this time, especially given the difficulty of developing comprehensive GDP measures for all countries.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Kate P. Donovan ( CN=Kate P. Donovan/OU=OMB/O=EOP [ OMB ] )

CREATION DATE/TIME:24-SEP-1998 17:54:16.00

SUBJECT: DRAFT SAP: TAXPAYER RELIEF ACT

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP@EOP [ CEA ] )  
READ:UNKNOWN

TO: Alice H. Williams ( CN=Alice H. Williams/OU=CEA/O=EOP@EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP@EOP [ CEA ] )  
READ:UNKNOWN

TEXT:

I apologize for the delay in getting this draft SAP to you, but please review & let me know if you have any problems as soon as possible. NEC has cleared it. The House is expected to take it up tomorrow morning (Friday); therefore, we aim to send this evening.

H.R. 4579 - Taxpayer Relief Act of 1998  
(Archer (R) Texas)

The Administration strongly opposes H.R. 4579. If the bill were presented to the President, either as a stand-alone bill or combined with other legislation, he would veto it. By draining billions out of projected budget surpluses, this bill violates the President's unwavering commitment to save Social Security first. None of the surpluses should be touched until the long-term solvency of Social Security has been fully secured. We must not squander this unique opportunity to save Social Security.

Last February in the FY 1999 Budget, the President proposed tax cuts targeted to help American families -- and proposed offsets to fully pay for the tax cuts. The Administration urges the Congress to consider tax cuts only if we can do so in a manner that adheres to the budget rules, maintains fiscal discipline, and meets the President's commitment to reserve the entire surplus until we have strengthened Social Security.

H.R. 4579 would cut taxes by \$85 billion over five years and \$176 billion over 10 years. Virtually none of the bill's costs have been paid for. This blatantly violates the pay-as-you-go fiscal discipline of the Budget Enforcement Act -- discipline which has been an essential component of our remarkable economic revival.

Without explicit offsets or an automatic budget sequester, this bill would spend the surplus. We oppose the bill because neither spending the surplus nor a budget sequester is acceptable. Any tax cut should be offset.

\* \* \* \* \*

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Douglas\_W.\_Elmendorf@oa.eop.gov ( Douglas\_W.\_Elmendorf@oa.eop.gov [ UNKNOWN ] )

CREATION DATE/TIME:25-SEP-1998 18:23:25.00

SUBJECT: LTCM talking points

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP [ CEA ] )

READ:UNKNOWN

CC: Douglas W. Elmendorf ( CN=Douglas W. Elmendorf/OU=CEA/O=EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Hi Janet,

I don't know when you'll check your messages, but as of Friday afternoon:

I talked to Gary Gensler, who said he'd been pressing Peter Fischer for talking points and had received nothing. Gary also raised the issue with Larry Summers, who shared Gary's view that only the NY Fed folks, who were actually in the room when the deal was cut, could write these points, and we needed to wait for them to do so. I (and they) realize that this is not very helpful advice for someone who can be asked about this at interviews, but that's unfortunately where this stands.

I'll give you more information when I see you.

Doug

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Douglas W. Elmendorf ( CN=Douglas W. Elmendorf/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:25-SEP-1998 18:22:23.00

SUBJECT: LTCM talking points

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Douglas\_W.\_Elmendorf@oa.eop.gov ( Douglas\_W.\_Elmendorf@oa.eop.gov [ UNKNOWN ] )

READ:UNKNOWN

TEXT:

Hi Janet,

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I talked to Gary Gensler, who said he'd been pressing Peter Fischer for talking points and had received nothing. Gary also raised the issue with Larry Summers, who shared Gary's view that only the NY Fed folks, who were actually in the room when the deal was cut, could write these points, and we needed to wait for them to do so. I (and they) realize that this is not very helpful advice for someone who can be asked about this at interviews, but that's unfortunately where this stands.

I'll give you more information when I see you.

Doug

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Mary Fibich ( CN=Mary Fibich/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:25-SEP-1998 14:17:00.00

SUBJECT: Update on Bloomberg Status

TO: Charles F. Stone ( CN=Charles F. Stone/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Nouriel Roubini ( CN=Nouriel Roubini/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Steven N. Braun ( CN=Steven N. Braun/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Rebecca M. Blank ( CN=Rebecca M. Blank/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TEXT:

I know you are interested in where we stand in our quest to upgrade our news service. Here is a short summary. Please call me if you have any suggestions or concerns.

I have spoken with OA Procurement Office about CEA,s desire to update our service. They would like to handle the scheduling of any additional demonstrations so that they can ensure that the &competitive process8 is adhered to and also so that other agencies interested in purchasing this type of service can be included in demonstrations simultaneously (the NEC, for example, is looking into this too). Unfortunately, OA Procurement prefers to work on this project after they finish their year-end rush. This timing is not a substantial problem for us, as we can extend our existing service on a month-to-month basis after our contract expires on 9-30-98.

OA Procurement would like for us to submit a requisition detailing the specific requirements we have for any news service (which I will put together and clear with Steve, Chad and Nouriel). We can also suggest specific products that we wish to be included in the evaluation process. So far, we intend to suggest (1) the upgraded Knight Ridder/Bridge product, called Bridge Station Plus and (2) the Bridge/Telerate product. I am also checking (at Doug,s suggestion) with a Federal Reserve contact who is familiar with a number of news service products for her

recommendations.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Kerri A. Jones ( CN=Kerri A. Jones/OU=OSTP/O=EOP [ OSTP ] )

CREATION DATE/TIME:25-SEP-1998 14:48:25.00

SUBJECT: OECD - Sus Dev

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Deanna M. Behring ( CN=Deanna M. Behring/OU=OSTP/O=EOP @ EOP [ OSTP ] )

READ:UNKNOWN

TEXT:

Janet - - As a follow-up to our discussion earlier this week. Here are some brief comments on the "Technology and Sustainable Development" element of the effort. The first is the most important; the others are observations from our environment folks. Hope this is useful. Have a good trip.

1) The Working Paper states that all work will be conducted jointly by relevant OECD directorates and affiliates. We think this point cannot be emphasized enough. There is much relevant work across OECD directorates. We do not want to see this effort fail in its attempts to draw on work (past and present) which has been carried out across the organization.

2) The activities are all broadly appropriate and the proposed case-studies approach is an important one. Several issues are of concern.

- ú - Experimentation. There is a huge literature in each of these areas, including extensive case studies, that should be made use of. What has not been done is to experiment through field tests of technology-policies to implement the findings already developed in each of these areas and to determine how to improve on these policy mechanisms.
- ú - Systematics. There has been little systematic analysis and experimentation of environmental technology-policy mechanisms. We have a large record of public policy experiments with investment tax credits, production incentives, regulatory initiatives, modified accelerated depreciation schedules, special offers, standards, and many others. Very little has been learned from these efforts because they were haphazardly implemented and inconsistently evaluated.

3) Under Technology Case Studies for Energy Technology, the report states that particular attention will be given to the public acceptance of energy technology.<sup>8</sup> The literature on this issue is huge and of, at least to this point, limited value. Public studies consistently show very high support for energy efficiency and renewable energy and there is much attention to the potential for marketing green power<sup>8</sup> in a deregulated electricity sector in the United States. There are, however, substantial barriers within public, financial, and energy institutions and energy technology companies that pose substantially greater barriers to sustainable energy development and use than public acceptance. As for public acceptance, issues such as split incentives (renter vs. landlord),

risk and uncertainty, and transaction costs are well identified as important obstacles. Rather than study the existence of such barriers, sharing experiences in developing and testing policy mechanisms that can effectively deal with these barriers might be more useful.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 17:54:16.00

SUBJECT: POTUS scribbings on the WEB

TO: Matthew R. McBrady ( CN=Matthew R. McBrady/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: STONE\_CF ( STONE\_CF @ AI @ CD @ VAXGTWY [ UNKNOWN ] ) (WHO)

READ:UNKNOWN

TO: Nouriel Roubini ( CN=Nouriel Roubini/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

I think I have successfully translated his comments on our Int.R.ups.

9/18 story on World Bank Cites Role of Structural Flaws in Asia's Woes--

"This is worth a careful analysis. Would they have been cut off without financial liberalization?"

9/25 story on IMF Offers New Assessment of Capital Market Liberalization, including "critical preconditions need to be met before countries open their capital accounts, and the sequencing of liberalization must be carefully considered."

"GeneS -- This is good"

Story on Blair Calls for Overhaul of the International Financial System

"Gene -- Why wouldn't you guys let me say this. I don't get it."

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 17:38:57.00

SUBJECT: draft 2 of testimony

TO: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Quindi C. Franco ( CN=Quindi C. Franco/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TEXT:  
Here is the latest draft. I would very much appreciate your comments,  
especially on the EMF section. Also, note the developing country  
participation paragraph.

Joe

PS: I will be out for a couple of hours, but I should be back around  
7:30-8.

===== ATTACHMENT 1 =====  
ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:  
Unable to convert ARMS\_EXT:[ATTACH.D28]MAIL43287327M.226 to ASCII,  
The following is a HEX DUMP:

Thank you, Mr. Chairman. I appreciate having another opportunity to discuss with you the economics of climate change and the Administration's efforts to address this significant environmental challenge. As you know, I have appeared before you twice previously to discuss the economics of climate change. In my first appearance, I said that "we can do it smart, or we can do it dumb." I was referring to the point that the costs of cutting greenhouse gas emissions are much reduced if flexible, market-based mechanisms are effectively used. Complementing this point, I stated in March of this year that the costs of achieving our Kyoto target would be modest if we effectively implement international trading, joint implementation, and the Clean Development Mechanism and we achieve meaningful developing country participation. Since I last appeared before this subcommittee, the Administration released the report "The Kyoto Protocol and the President's Policies to Address Climate Change: Administration Economic Analysis." In addition, the Stanford Energy Modeling Forum has been coordinating an economic modeling exercise of the Kyoto agreement, and the participating modelers have made available some of their preliminary results. Today, I will provide a brief summary of the Administration's Economic Analysis and review several of the key findings of the Energy Modeling Forum effort and related climate change research.

### **Costs of Climate Change**

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of greenhouse gases have reached levels well above those of preindustrial times. If growth in global emissions continues unabated, the atmospheric concentration of carbon dioxide (CO<sub>2</sub>) will likely double relative to its preindustrial level by midway through the next century and continue to rise thereafter. As a result of the increased concentration of CO<sub>2</sub>, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. Potential consequences associated with this shift in climate include a rise in sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity. For further discussion of the costs of climate change, I refer you to the Administration Economic Analysis.<sup>1</sup>

### **The Kyoto Protocol and the Buenos Aires Conference of the Parties**

Previously, Undersecretary Eizenstat and I appeared before this Committee to discuss the Kyoto Protocol and the Administration's efforts to address the risks of climate change. In my testimony, I described the many important flexibility mechanisms in the Kyoto Protocol and how

<sup>1</sup> Please refer to the attached paper copy or <http://www.whitehouse.gov/WH/New/html/kyoto.pdf> for a PDF version of this document.

they can allow for countries to cost-effectively achieve the emissions targets established in this agreement. We have termed these “when”, “what”, and “where” flexibility, and I refer you to the Administration Economic Analysis for a full discussion of these flexibilities. Since we secured international trading, the Clean Development Mechanism, and joint implementation last year in Kyoto, the Administration has worked in bilateral and multilateral arenas to promote understanding of these mechanisms and to develop rules that will promote their efficient operation. This work will continue in the talks in Buenos Aires and beyond. While I will defer to the Department of State for a discussion of the upcoming negotiations, I will reiterate that efficient implementation of these flexibility mechanisms are critical to reducing the costs of achieving the targets established in the Kyoto Protocol.

### **Costs of Action**

In assessing the economic effects of the Kyoto Protocol, the Administration has drawn on the insights of a wide range of models of the energy sector and economy over the next 25 years, including but not limited to the results of the Stanford Energy Modeling Forum, the Intergovernmental Panel of Climate Change’s review of the economic and social dimensions of climate change, the work of the OECD on the economic dimensions and policy responses to global warming, and the Administration’s staff-level interagency analysis. In addition, the Administration used other tools, such as a meta-analysis, basic economic reasoning, overviews of the domestic and international energy sectors, simple statistics regarding energy efficiency and greenhouse gas emissions, and economic indicators from World Bank, International Energy Agency, and Energy Information Administration databases.

Assuming that effective mechanisms for international trading, joint implementation, and the Clean Development Mechanism are established, and assuming also that the United States achieves meaningful developing country participation, the Administration’s overall assessment is that the economic cost to the United States in aggregate and to typical households of attaining the targets and timetables specified in the Kyoto Protocol will be modest. This conclusion is not entirely dependent upon, but is fully consistent with, formal model results. The Administration continues to believe that there are limitations to relying on any single model to assess the economic impact of the Kyoto Protocol. However, model results can further inform and improve the understanding of the effects of climate change policy. To complement the economic analysis of the Administration’s policy to address climate change, we have conducted an illustrative assessment with a modified version of the Second Generation Model. The results from the SGM substantiate the conclusion that the economic effects of an efficient, effective, and global policy to address the risks of climate change will be modest.

The Administration supports effective international trading and meaningful participation by key developing countries. An assessment using the SGM model that accounts for effective trading and developing country participation yields permit price estimates ranging between

\$14/ton and \$23/ton, and resource costs between \$7 billion and \$12 billion/year. The range reflects uncertainty about the extent of Annex I participation in international trading.

Under the assumptions of the Administration's analysis, permit prices in the range of \$14/ton to \$23/ton translate into energy price increases at the household level between 3 and 5%.

Under these permit prices, fuel oil prices would increase about 5 to 9 percent, natural gas prices about 3 to 5 percent, gasoline prices about 3 to 4 percent (or around 4 to 6 cents per gallon), and electricity prices about 3 to 4 percent. This increase in energy prices at the household level would raise the average household's energy bill in ten years by between \$70 and \$110 per year, although such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity restructuring. By 2008-2012, the anticipated 10 percent decline in electricity prices from the restructuring that is part of our climate change agenda is projected to lead to expenditure reductions of about \$90 per year for the average household.

The illustrative modeling analysis does not account for several key components of the Kyoto Protocol and the Administration's policies to reduce greenhouse gas emissions. These key issues include the benefits of reducing net emissions through carbon sinks, the Administration's electricity restructuring proposal, the Administration's Climate Change Technology Initiative, the Administration's sectoral consultations to encourage and support voluntary efforts by U.S. industry to undertake emissions reductions, including the provision of credit for early action, and the Administration's efforts to reduce federal energy use.

Since I last testified before this Committee, the Administration has released its proposed electricity restructuring legislation and the supporting analysis of this proposal. The Administration's proposed Comprehensive Electricity Competition Act (CECA) is estimated to reduce greenhouse gas emissions by about 25 to 40 million metric tons of carbon equivalent per year by 2010. Although competition will lower prices, which will tend to increase consumption, it will also provide a direct profit incentive for generators to produce more electricity with less fuel, and improve energy efficiency as competitive sellers seek to maximize the value of their product offerings to buyers by bundling electricity with energy efficiency and management services. These efficiency improvements should yield some emissions reductions. Specific CECA provisions that will yield additional emission reductions include a renewable portfolio standard, a public benefits fund that will support renewable energy and energy efficiency investments, "green" labeling to help consumers who value clean energy choose it, and a net metering provision encouraging the installation of small renewable systems.

The Administration's electricity restructuring proposal provides potential cost-savings in four areas: cost reduction (including fuel procurement, non-fuel operation and maintenance expenses, and administrative and general expenses), dispatch efficiency, improved capital utilization, and savings in capital additions. These four categories of savings are likely to reach or exceed \$20 billion annually. For further discussion on the Administration's electricity

restructuring proposal, I refer you to the Department of Energy's CECA supporting analysis documents.<sup>2</sup>

## **Recent Research on the Economics of Climate Change**

Since I last appeared before this Committee, many economists have conducted and made available their analyses of the Kyoto Protocol. I noted in both of my previous appearances that there are limitations to relying on one or a small set of models and that we were eager to see assessments of the Kyoto Protocol by other models. In March, I indicated that the Energy Modeling Forum (EMF) based at Stanford University, a long-running model comparison exercise involving many of the leading climate and energy models, would conduct full scale analyses of the Kyoto Protocol. We have now received a compilation of the preliminary analyses by the participating modeling teams.

### *EMF Kyoto Analyses*

The Energy Modeling Forum comparison exercise of the Kyoto Protocol has included ten modeling teams from the United States, Europe, and Asia. In evaluating the Kyoto Protocol, all the participating teams used economic models that can model international trading in greenhouse gas permits. By explicitly modeling international trading, these models can evaluate the opportunities for cost-savings through trading among Annex I nations and by expanding trading to developing countries were they to adopt emissions targets. Since the Kyoto Protocol provides to all countries with emissions targets the right to trade emissions allowances among other countries with targets, these models are well-suited to assess the economic implications of the international trading component of the agreement.

While the EMF models can assess international trading, there are several other flexibility mechanisms of the Kyoto Protocol that they can not, at present, readily assess. For example, these models did not evaluate the effects of a price of carbon on sink activity. While several modelers did assess the economic costs of achieving the Kyoto targets with "off-line" assumptions about sink activity, none had an integrated energy-land use model. Further, most of the modelers did not incorporate opportunities to reduce costs by trading across greenhouse gases. These models are primarily energy models, so the modelers focused on reducing carbon emissions from fossil fuel combustion. Again, some modelers analyzed the Protocol by making some "off-line" assumptions about the potential reductions in non-carbon dioxide greenhouse gases, but none employed a model with cost curves for these gases. Finally, it should be noted that these models did not include opportunities for emissions reduction through Administration proposals, such as electricity restructuring or the Climate Change Technology Initiative.

<sup>2</sup> Please refer to the attached paper copy or <http://www.doe.gov/ceca/ceca.htm> for the PDF version of the supporting analysis.

The EMF results provide very useful context for the Administration's economic analysis. First, the model used by the Administration, the Second Generation Model of Battelle Laboratory, tends to fall in the middle of the range of this set of models in terms of U.S. permit prices.<sup>3</sup> For example, SGM generates the median permit price of this set of models under Annex I trading. Under full global trading, the SGM permit price is just below the median permit price. Second, the EMF exercise found that the reduction in permit price as trading expands from no trading to Annex I trading to full global trading is robust. On average, the EMF models found that Annex I trading would cut the U.S. permit price by 52% relative to a no trading scenario. Of these models, one estimated a 72% reduction in the permit price under Annex I trading. In full global trading, the permit price would be, on average, 78% lower than the no trading price. Several models estimated permit price reductions of about 90%.

#### *Analyses of Trading Constraints*

In addition to the modeling of various efficient international trading scenarios, several EMF modeling teams have considered potential constraints on the opportunity to buy or sell emissions allowances in an international market. These scenarios are intended to reflect potential quantifications of the term "supplemental" in the international trading article of the Kyoto Protocol (Article 17). While the United States is unambiguously opposed to trading restrictions, several parties to the agreement have indicated support for some form of a trading constraint. Trading restrictions would generate no benefit for the global climate while they could significantly increase the costs of achieving the Kyoto targets. To put it in lay terms, trading restrictions would be "doing it dumb."

Before describing the economic costs of trading constraints, I would like to explain why such constraints yield no climate benefits. In proposing trading constraints, some have focused on countries that will likely have "hot air" during the commitment period. This "hot air" refers to countries, such as Russia, that will have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. If trading constraints are established that restrict the ability of Russia to sell hot air (or restrict the opportunity for other Annex I countries to buy hot air), then emissions during the first commitment period would be lower than if there were no trading constraints. However, Russia would simply bank its hot air and use these emissions allowances in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the

<sup>3</sup> Please note that the version of SGM used in EMF differs from the analysis conducted by the Administration because the EMF version does not include cost curves for non-carbon dioxide greenhouse gases used by the Administration. Since efficient trading across gases would lower costs and permit prices, the EMF version of SGM yields slightly higher permit prices.

trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is relevant in terms of changes in the global climate.

To provide a sense of the economic implications of trading constraints, I would like to share with you two examples from work done by EMF modeling teams. First, consider a trading constraint of the form that mandates that at least two-thirds of the emissions reductions necessary for a country to achieve its Kyoto target must occur through domestic actions. Evaluating this trading constraint with the EPPA model based at the Massachusetts Institute of Technology, the permit price for the United States is almost four times higher with the constraint than under an unconstrained global trading system. It is important to note that the effects of this constraint are even more pronounced for the European Union and for Japan. The permit price for the EU would be more than five times higher than the unconstrained global trading permit price, and the Japanese permit price would be thirteen times higher. As these results indicate, the trading constraint would result in each country experiencing a different marginal cost of abatement, and there would be no common permit price for a ton of carbon equivalent. Since the constraint restricts opportunities for countries like the United States, Japan, and members of the EU to buy emissions allowances, the competitive price for emissions allowances from countries like Russia will fall below the unconstrained level.

Second, consider a trading constraint of the form that mandates that acquisitions of permits through international trading could not exceed 10% of a country's emissions allocation. For example, the U.S. target is approximately 1.5 billion tons of carbon equivalent on an annualized basis. Under this trading constraint, the United States, or private firms in the United States, could not purchase more than 150 million tons on an annual basis from other countries. Assessing this trading constraint with the Second Generation Model based at Battelle Laboratory, the permit price for the United States would nearly quadruple relative to the unconstrained global trading permit price. For the EU, the permit price would be more than three times higher, and for Japan, the permit price would be more than twelve times higher than the unconstrained global price.

While trading constraints increase greenhouse gas permit prices (and subsequently, energy prices) in the United States, the European Union, and Japan, they also reduce the gains from trade by the countries likely to be large sellers of emissions allowances. For example, in a world where large developing countries adopt emissions growth targets and participate in international trading, Russia, China, and India would sell fewer emissions allowances at lower international permit prices under such trading constraints than in an unconstrained global trading environment.

#### *Developing Country Participation*

The results of the Energy Modeling Forum assessments of global trading necessarily include assumptions that developing countries adopt emissions targets and participate in trading.

While no non-Annex I country has yet adopted a binding emissions target, there appears to be economic and environmental benefits if some developing countries do so. For example, under a target structured to allow for a developing country to continue to develop -- an emissions growth target -- emissions could be capped slightly below their business as usual emissions for the commitment period. First, this would generate climate benefits by reducing global emissions below what they would otherwise have been. Second, a developing country could undertake some emissions reductions below their target if the marginal cost of doing so were below the trading price for a greenhouse gas permit. For large developing countries like China, many of the EMF models indicate that this would be the case. These developing countries could then export emissions allowances in excess of their costs of abatement and gain from trade. Third, Annex I countries, who would purchase these emissions allowances, would achieve their targets at lower costs with the lower global permit price. However, it should be noted that the more stringent the target for the developing country, the lower the gains from trade for both that country and for Annex I countries such as the United States. Indeed, an extremely stringent target could conceivably make the developing country a net importer of emissions allowances. Still, these models do illustrate that there is potential to create targets that make the environment, the developing country, and Annex I countries all better off.

Other EMF results -- other gases (Raymond has requested these analyses, and we should get them by FedEx on Wednesday)

## **Conclusion**

The Administration's overall conclusion is that the economic impact of the Protocol will be modest under the conditions we have identified in our economic analysis. The purpose of this testimony has been to summarize the analysis we have presented in the Administration Economic Analysis on climate change and to provide a brief overview of recent modeling efforts outside of the government.

I look forward to continuing to work with members of this Committee, as well as other interested parties, in further analyzing the Kyoto Protocol and evaluating the net effects of reducing greenhouse gas emissions. It is my hope that economic analysis will continue to play a key role in designing policies in this area.

I welcome your questions.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 20:53:43.00

SUBJECT: GCC testimony

TO: Raymond P. Guiteras ( CN=Raymond P. Guiteras/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Quindi C. Franco ( CN=Quindi C. Franco/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

CC: Sandra F. Daigle ( CN=Sandra F. Daigle/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

CC: Alice H. Williams ( CN=Alice H. Williams/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TEXT:

I have received comments thus far from Jeff, Steve, and Quindi, and I have incorporated their suggestions (which were primarily editorial). Is there a time on Wednesday that we could get together and discuss this? If everyone is comfortable with the approach we have taken, we could go ahead and start it through interagency review tomorrow afternoon.

Should we run this by Rob ahead of the interagency review?

I am now working on Qs and As.

Joe

# Withdrawal/Redaction Marker

## Clinton Library

| DOCUMENT NO.<br>AND TYPE | SUBJECT/TITLE                                                                         | DATE       | RESTRICTION |
|--------------------------|---------------------------------------------------------------------------------------|------------|-------------|
| 001. email               | rlutter@aei.org to Janet L. Yellen at 17:41:56.00. Subject: Cancelled essay. (1 page) | 09/29/1998 | b(6)        |

### COLLECTION:

Clinton Presidential Records  
Automated Records Management System [Email]  
CEA ([Yellen])  
OA/Box Number: 950000

### FOLDER TITLE:

[09/23/1998 - 10/04/1998]

2013-0723-F  
ab1286

### RESTRICTION CODES

#### Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

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RR. Document will be reviewed upon request.

#### Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 13:13:20.00

SUBJECT: Bio on CEA Website

TO: Raymond P. Guiteras ( CN=Raymond P. Guiteras/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

I noticed that my bio on the CEA website has not yet been corrected. Is there a problem?

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Bert I. Huang ( CN=Bert I. Huang/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 19:25:10.00

SUBJECT: Re: Brown Bag lunch

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Alice H. Williams ( CN=Alice H. Williams/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Janet,

Both Charles Schultze and Herbert Stein have agreed to join us for lunch.  
I will invite them both for October 23. If that also turns out to be a  
busy time, please let me know. Thanks!

Bert

Janet L. Yellen

09/29/98 07:05:25 PM

Record Type: Record

To: Bert I. Huang/CEA/EOP

cc:

Subject: Re: The CEA website

I see that Dr. Stein has agreed to the 16th or 23rd of October. I am  
extremely busy the week of the 16th and would strongly prefer to do it the  
week of the 23rd or later than that. If possible, I would prefer if you  
try to make it the 23rd.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Raymond P. Guiteras ( CN=Raymond P. Guiteras/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 13:14:45.00

SUBJECT: Re: Bio on CEA Website

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Janet -

There should not be a problem, and I'm suprised it hasn't been changed yet. I will talk with the White House Web Team immediately.

Raymond

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Nouriel Roubini ( CN=Nouriel Roubini/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 00:57:08.00

SUBJECT: My comments to the G22 WG2 report on Strengthening Financial Institutions of Halifax II

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Janet, here are the comments I sent to Sherman Boone (and CCed to Summers, Lipton, Geithner, Atkinson and Alexander). I will attach their replies in another message.

Nouriel

Sherman,

first my apologies for not getting in touch with my comments much earlier. I hope I can still contribute to the discussion.

I read the report of the WG2 on Strengthening Financial Systems. You have done a very careful and good job.

The only main issue that we (CEA, Jeff Frankel and myself) find wanting is the total lack of any reference in the report to the debate on capital controls and the optimal sequencing of capital market liberalization. Upon our reading the report, the only part that gets close to address these issues is 3.1.4. We found the discussion disappointing. When I asked earlier to the members of the WG3 on Crisis Resolution why they would not address the issue of capital account liberalization in their report, the reply was that such issues will be addressed by the WG2; but very little has been done in the WG2 report.

If I understand the position taken in the WG2 report, there are two points made:

1. A discussion of controls on short-term loans made by lender banks will have to wait the review of the Basel Capital Accord.
2. Controls on debtor countries borrowers will be only considered as part of the prudential regulation of the banking system. So, capital controls will be just part of such prudential standards; even in this framework, the report presents different opinions and suggest that some WG parties have reservations about graduated prudential standards.

We found the report seriously lacking on these issues. There are at least five issues that one should address, or at least discuss, and the report considers only the first:

1. Controls on short-term interbank capital flows.
2. Controls on other/all short term capital flows.
3. Controls on the use of derivatives in emerging and developed financial markets
4. Controls on capital outflows

## 5. The optimal speed of orderly capital account liberalization.

The report addresses only the first issue and does not consider (even in the form of criticizing them) proposals for broader restrictions on capital flows. In this regard, the report is way behind the curve even relative to the positions recently taken by Chairman Greenspan, the IMF and the G-7 Finance Ministers in their Birmingham Summit Report.

Specifically, the report seems to implicitly argue that the only form of capital controls to be considered are restrictions to short-term cross-border interbank loans. While this view may be consistent with that of the Treasury, one would have expected at least some discussion of why controls on all short-term capital inflows should or should not be considered. While the issue is certainly controversial, at least the IMF spent some time discussing it at length in its latest International Capital Market Report. There is now wide evidence from many and different studies that controls on all short-term capital inflows, of the type implemented by countries such as Chile, Colombia, Brazil, may be warranted. While such controls do not appear to affect the total volume of capital flows, they do appear to affect the composition of capital flows by reducing the reliance on short term capital flows and increasing the reliance on longer term (and FDI) capital flows. The limits of such controls on short-term inflows are well known leakages distortions, evasion, et cetera) but they appear to be effective. While there may be disagreement on whether widespread controls on all inflows should be introduced, one would have at least expected a discussion of this issue. The report instead just ignores the issue altogether.

The reason why controls on a wider range of capital inflows should be considered is best exemplified by the case of Indonesia but is symptomatic of a broader issues. In Indonesia, a large part of the loans from international banks went directly to the corporate sector rather than to Indonesian banks; such loans amounted to more than \$70b. As the corporates were subject to the same wrong incentives and moral hazard distortions to overborrow and overinvest as the banks did, allowing corporate to borrow without limits in international capital markets proved to be disastrous. So, putting restrictions only on the short term borrowings of banks may be useless unless the international borrowing of the corporates is similarly considered and prudentially restricted. Ignoring this issue will just mean a repeat of the disaster we observed in Indonesia during the next crisis.

Similarly, the report ignores altogether the issue of controls on capital outflows and the optimal speed of capital account liberalization. While outright controls on capital outflows are controversial and may be counterproductive during a crisis such as the current one, one would have expected a discussion of this issue, if nothing else as a way to present the arguments against them. The issue is hotly debated and at the center of recent policy discussions but the report just ignores it altogether. Moreover, while my view is that controls on outflows are dangerous, especially, during a crisis like the current one, there is a very broad consensus that, while the financial systems are being strengthened, the speed of capital account liberalization should be carefully monitored and paced according to the strength of the financial system. History suggests that capital account liberalization can be disastrous in weak financial system where there are severe distortions such as Lax supervision and weak

regulation of the financial system, low capital adequacy ratios, lack of incentive-compatible deposit insurance schemes, insufficient expertise in the regulatory institutions, distorted incentives for project selection and monitoring, and outright corrupt lending practices. The distortions generated by such behavior were enhanced by the rapid process of capital account liberalization and financial market deregulation in the region during the 1990s, that had increased the supply-elasticity of funds from abroad. The extensive liberalization of capital markets was consistent with the policy goal of providing a large supply of low-cost funds to national financial institutions and the domestic corporate sector that were subject to severe moral hazard problems.

So, one should discuss the issues of the optimal speed of capital account liberalization. It is disappointing that the WG2 Report is even behind the very modest and sensible positions taken by the IMF on this issue. To quote the recent September 18 1998 Draft Report of the IMF Managing Director to the Interim Committee on Strengthening the Architecture of the International Monetary System "Capital Account Liberalization. Further efforts will be made to ensure that the Fund's surveillance focuses on the appropriate sequencing of capital account liberalization and that effective safeguards are in place to help ensure the resilience of the economy, particularly the financial sector, to possible shocks. Questions regarding the appropriateness of temporary exchange controls have again been raised during the recent crisis. It would be worth revisiting the recent experience with such controls to determine if there are circumstances under which such measures can be effective. Work to improve the reporting and monitoring of capital flows will continue". Moreover, while the IMF supports a capital account liberalization amendment, it does so with the following big caveat, i.e. to "extend, as needed, the Fund's jurisdiction through the establishment of carefully designed and consistently applied obligations regarding the liberalization of such movements, with appropriate safeguards and transitional arrangements".

So the IMF clearly speaks of the need to have gradual capital account liberalization and even considers the usefulness of considering the merits of more extensive capital controls. The report, instead, ignores these issues altogether.

The Report is even behind the positions officially taken by the G-7 who explicitly spoke about the need of an orderly capital account liberalization. To quote the relevant section of May 15, 1998 Report of G7 Finance Ministers to G7 Heads of State or Government for their meeting in Birmingham May 1998:

"Helping countries prepare for Global Capital Flows.

12. International capital flows enable a better global allocation of capital and foster economic development.

However, events in Asia have shown that weaknesses can suddenly be exposed by global capital markets,

making countries with weak fundamentals, including weak financial systems, more vulnerable to external shocks. It has also highlighted the dangers of poorly sequenced and unbalanced liberalization.

To ensure that the process of capital account liberalization is orderly, it is important that sound macroeconomic policies and supervisory and regulatory practices are put in place. Correct management of the liberalization process is crucial. And the process needs to be accompanied by reforms to strengthen the domestic financial system.

The IMF has and should have an important role to play in this area, providing advice on how best to manage orderly capital account liberalization and monitoring countries, vulnerability to capital flows.

We support measures to improve the IMF's capital markets expertise, and to collect more information on levels of external debt as part of its regular surveillance work.

In doing this, the Fund should collaborate with the World Bank, BIS and OECD.

We urge the IMF and other fora to examine how to monitor effectively capital flows, including short-term capital flows, with a view to providing information to the market and promoting stability.

13. Capital account liberalization should not be confused with open access to domestic markets for foreign firms.

Open access to domestic markets for foreign firms can help with the development of the deep and liquid domestic financial markets, with soundly managed and well capitalised firms, that are needed to help improve the conditions for liberalising capital flows. "

The G7 spoke clearly of the need for an orderly capital account liberalization but no reference to this is in the report.

It should also be observed that, while most of us agree that the eventual goal should be one of full capital market liberalization once domestic financial system are strong and not subject to political distortions and moral hazard problems, some significant restrictions to capital flows are fully warranted until such state of the world is reached. Note that this is not a particularly heretic and controversial view. First, note that most developed countries had significant restrictions to the ability to domestic agents (households, firms, financial institutions) to borrow and lend in international capital market. For example, it was only in 1992 that most remaining capital account restrictions

were lifted in advanced countries such as Italy and France.  
If these countries waited until 1992 to fully liberalize their capital account, it is foolish to believe that developing countries with much weaker financial systems should fully liberalize right away.  
Second, many of the restrictions that should be maintained in the orderly process of liberalization relate to reducing the risk that financial institutions and corporate firms take excessive risks.  
To quote the September 1998 Draft Report of the IMF Managing Director on Strengthening Financial Systems and Orderly Capital Account Liberalization:

"Prudential controls are critical in managing and containing risks. The imposition of capital, liquidity, reserve and open-position requirements governing the composition of the balance sheets of banks are therefore key risk management instruments. While such measures are directed towards banks, short-term foreign currency borrowing by nonbank firms can also give rise to systemic risk, and improved monitoring of short-term capital flows to nonbanks is beneficial.  
Tax or tax-like measures to discourage potentially destabilizing foreign currency inflows and outflows have been used by a number of countries, although there continues to be some skepticism about their effectiveness. More generally, experience suggests that the risks associated with short-term inflows can be limited by prudent borrowing by the sovereign, sound management and regulation of the financial system, and incentives for corporate borrowers to manage risks appropriately. In considering the optimal sequencing of capital account liberalization, the experience of many Fund members strongly suggests that particular attention needs to be paid to the state of domestic banking systems. It is imprudent to remove most restrictions on capital account transactions before the major problems in the domestic financial system have been addressed....Particular caution is needed with respect to opening up the economy to short-term inflows.

....

The Executive Board will return to the issue of an amendment to the Articles of Agreement to extend the Fund's jurisdiction to the capital account in light of recent experience. the goal of such an amendment would be to promote the orderly, gradual, and efficient liberalization of international capital movements rather than an unwise and hasty rush to eliminate capital controls. Seen in this context, the proposed amendment should contribute to the prevention of international financial crises."

If the IMF strongly argues that one should worry about the 'unwise and hasty rush to eliminate capital controls', we would have expected that the G22 group report would also find some place to discuss such issues and consider such problems. Instead, the report altogether ignores these crucial policy questions that are central to the current debate.

Finally, the WG2 report is so timid even in addressing the issue of capital controls and capital account liberalization that the reader would even be aware that such issue is addressed in the report. The questions are discussed in a sub-sub-section entitled "Use of risk weights and provisioning norms to sharpen incentives". This title and the language used in the section is so cryptic and indirect that only a careful reader would even understand what the report is talking about.

What are "graduated prudential standards"?

A more clear and frank discussion of the problems would have been warranted. For Chairman Greenspan, in his remarks before the 34th Annual Conference on Bank Structure and Competition of the Federal Reserve Bank of Chicago on May 7, 1998 argued that excessive short-term interbank funding, especially cross border, may turn out to be the Achilles' heel of an international financial system and argued for the need to impose controls on both bank lenders and borrowers in much more open, direct and convincing terms:

"a preventive effort to lessen the probabilities of such crises arising--for example, by bolstering the financial system's buffer through more capital or improved bank supervision--may not in itself further insulate a country from crisis if financial institutions, now faced with a lower cost of capital or lower spread on their debt, leverage away the increased buffer. Indeed, one form of moral hazard is that an initially sound financial system that attracts low risk premia could merely induce a ratcheting up of the risks that a nation's borrowers choose to take on. This is not to disparage endeavors to bolster financial systems. But we should keep in mind that some of the advantages of such initiatives could be drained away by moral hazard.

What is becoming increasingly clear, and what is particularly relevant to this conference, is that, in virtually all cases, what turns otherwise seemingly minor imbalances into a crisis is an actual or anticipated disruption to the liquidity or solvency of the banking system, or at least of its major participants. That fact is of critical importance for understanding both the Asian and

the previous

Latin American crises. Depending on circumstances, the original impulse for the crisis may begin in the banking system or it may begin elsewhere and cause a problem in the banking system that converts a troubling event into an implosive crisis.

The aspects of the banking system that produce such outcomes are not particularly opaque.

First, exceptionally high leverage has often been a symptom of excessive risk-taking that left financial systems and economies vulnerable to loss of confidence.

....

Second, banks, when confronted with a generally rising yield curve, which is more often the case than not, have had a tendency to incur interest rate or liquidity risk by lending long and funding short.

This has exposed banks, especially those that had inadequate capital to begin with, to a collapse of confidence when interest rates spiked and capital was eroded. In addition, when financial intermediaries, in an environment of fixed exchange rates, but still high inflation premiums and domestic currency interest rates, sought low-cost, unhedged, foreign currency funding, the dangers of depositor runs, following a fall in the domestic currency, escalated.

Third, banks play a crucial role in the financial market infrastructure. A sound institution can fend off unexpected shocks. But when they are undercapitalized, have lax lending standards, and are subjected to weak supervision and regulation, they have become a source of systemic risk to both domestic and international financial systems.

Fourth, recent adverse banking experiences have emphasized the problems that can arise if banks, especially vulnerable banks, are almost the sole source of intermediation. Their breakdown induces a marked weakening in economic growth. A wider range of nonbank institutions, including viable debt and equity markets, can provide important safeguards of economic activity when the banking system fails.

Fifth, despite its importance for distributing savings to their most valued investment use, excessive short-term interbank funding, especially cross border, may turn out to be the Achilles' heel of an international financial system that is subject to wide variations in financial confidence. This phenomenon, which is all too common in our domestic experience, may be particularly dangerous in an international setting. I shall return to this issue later.

Finally, an important contributor to past crises has been moral hazard, that is, a distortion of incentives that occurs when the party that determines the level of risk

receives the gains from, but does not bear the full costs of, the risks taken. Interest rate and currency risk-taking, excess leverage, weak financial systems, and interbank funding have all been encouraged by the existence of a safety net. The expectation that national monetary authorities or international financial institutions will come to the rescue of failing financial systems and unsound investments clearly has engendered a significant element of excessive risk-taking. The dividing line between public and private liabilities, too often, has become blurred.

Given that the existence of safety nets generates moral hazard, and moral hazard distorts incentives, why do we continue to provide safety nets to support our financial systems?

.....

Our goal as supervisors, therefore, should not be to prevent all bank failures, as I have suggested to this conference many times, but to maintain sufficient prudential standards so that banking problems that do occur do not become widespread. We try to achieve the proper balance through official regulations, as well as through formal and informal supervisory policies and procedures.

....

What types of regulatory initiatives appear fruitful in achieving the benefits and minimizing the costs of the new system?

.....

I pointed earlier to cross-border interbank funding as potentially the Achilles' heel of the international financial system. Creditor banks expect claims on banks, especially banks in emerging economies, to be protected by a safety net and, consequently, consider them to be essentially sovereign claims.

Unless those expectations are substantially altered--as when banks actually incur significant losses--governments can be faced with the choice either of validating those expectations or of risking serious disruption to payments systems and to financial markets in general.

Arguably expectations of safety net support have increased the level of cross border interbank lending from that which would be supported by unsubsidized markets themselves. This would suggest resource misallocation. Accordingly, it might be useful to consider ways in which some added discipline could be imposed on the interbank market. Such discipline, in principle, could be imposed on either debtor or creditor banks. For example, capital requirements could be raised on

borrowing banks by making the required level of capital dependent not just on the nature of the banks' assets but also on the nature of their funding. An increase in required capital can be thought of as providing a larger cushion for the sovereign guarantor in the event of a bank's failure. That is, it would shift more of the burden of the failure onto the private sector. Alternatively, the issue of moral hazard in interbank markets could be addressed by charging banks for the existence of the sovereign guarantee, particularly in more vulnerable countries where that guarantee is more likely to be called upon and whose cost might deter some aberrant borrowing. For example, sovereigns could charge an explicit premium, or could impose reserve requirements, earning low or even zero interest rates, on interbank liabilities.

Increasing the capital charge on lending banks, instead of on borrowing banks, might also be effective. Under the Basle capital accord, short-term claims on banks from any country carry only a twenty percent risk weight. The higher cost to the lending banks associated with a higher risk weight would presumably be passed on to the borrowing banks. Borrowing banks, at the margin, might reduce their total borrowing or shift their borrowing to nonbank sources of funds, perhaps with the shift facilitated by the lending banks, who might advert to securitization of short-term interbank lending if regulatory capital charges exceeded internal requirements. In either case, there would tend to be a reduction in interbank exposures, a significant source of systemic risk. To be evaluated in any such initiative is whether such regulation would disrupt liquidity in the interbank market to a point where such costs exceed the benefits of reduced interbank exposure. "

Given the importance of the issue here addressed one would have expected a similar directness and openness in the Report about the issues so authoritatively discussed by Chairman Greenspan. In its current form, section 3.14. of the report barely considers the set of important questions that have been outlined in my comments above.

We hope that you take these late comments in a constructive manner. The Working Group and Report have done a very good job and covered a host of very important issues with many good policy recommendations. We hope that the report would also address the question discussed above. While there may be disagreement on specific proposals and ideas, the report should at least discuss these issues if, nothing else, to provide

the arguments for dismissing such proposals.

Yours, Nouriel

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Nouriel Roubini ( CN=Nouriel Roubini/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:29-SEP-1998 01:13:00.00

SUBJECT: Replies to my comments on the G22 WG2 report on Strengthening Financial Institutions of Halifax II

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Here are the replies to my comments on the WG2 report received on Monday.

First, I spoke with Lewis Alexander from the Fed that was very involved in drafting the report of the WG2. He admitted that there is a major hole in the report in not addressing the issue of orderly capital account liberalization and the need to control short-term capital inflows. He also admitted that it was a 'strategic mistake' and 'stupid' having ignored such issues altogether during the G22 process. Essentially, early on it was decided not even to address these questions. I argued that we are going to look foolish with the report coming out and these central policy issues ignored altogether. I also argued that we could have least discussed them in the report. He said that it was too late to change anything now as the report has to be finalized in two days and you cannot force new views on 22 countries but that he would work with Sherman on trying to find some wording in the report to say that these issues will be addressed in future work of the group after the report is presented.

Second, I spoke with Sherman Boone. He admitted that it was a mistake not to address these issues. They decided early on to leave aside any discussion of capital controls and capital account liberalization and never went back to it. He seemed a bit embarrassed about having overlooked altogether the issue. He said that nothing can be done in the next two days but that he would work with Alexander and the BIS guy involved in the report to add some paragraph about the need to address this issues in the future work of the working group; he claims that their work will continue. So, at least we put the issue on the map, even if I am surprised that they blundered this issue in a big way. It was not even a case of doing it on purpose; they just made a serious mistake.

Third, Caroline Atkinson's replied as follows:

Nouriel:

thanks for sending this on to me. I had read your comments to Sherman. He is thinking of how/whether to address this more satisfactorily at this point.

As I'm sure you realize, we did not just forget about the capital control debate: as you point out, it is addressed at least a little in the G7 etc. However, it was our judgement at the time of agenda setting for g22 that this would be a difficult issue to broach in that group, other than in the context of "capital restraints" for prudential purposes, not least because of a strong internal feeling that the US position would be against, and a huge sensitivity to the whole issue on the Hill (in relation to IMF funding) that even now means we are trying to water down the IMF language for

Sunday.

Of course, times have changed to some extent. The upside is that we can have this as a new agenda item for the follow on work!

Hope you will also have a chance to read the other reports; it is very good to get an "outside/inside" view. Caroline

Finally, Jeff spoke with Lipton who essentially confirmed the points made by Boone, Alexander and Atkinson on how the process ended up ignoring these issues and about possible divisions within Treasury on these questions.

So, something will be added to the Report but it will be minimal so far. It also appears that Tim and Caroline were the hardliners at Treasury on this issue while Lipton, Summer and Rubin were more open on this.

Will be happy to brief you more on this. Will also check when the report is officially out and when Rubin will speak about it.

Nouriel

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:30-SEP-1998 11:36:04.00

SUBJECT: draft 3 of GCC testimony

TO: Raymond P. Guiteras ( CN=Raymond P. Guiteras/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Quindi C. Franco ( CN=Quindi C. Franco/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TEXT:

Attached is the latest draft of Janet's testimony. If everyone is satisfied with the testimony, I will circulate it among WH staff later today (Todd, Bill, Sandalow, Julie Anderson) and once we get their comments, send it through interagency clearance on Thursday.

Joe

===== ATTACHMENT 1 =====  
ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D60]MAIL410307277.226 to ASCII,  
The following is a HEX DUMP:

**TESTIMONY OF DR. JANET YELLEN  
CHAIR, COUNCIL OF ECONOMIC ADVISERS  
BEFORE THE  
U.S. HOUSE OF REPRESENTATIVES  
COMMERCE SUBCOMMITTEE ON ENERGY AND POWER**

**TUESDAY OCTOBER 6, 1998**

Thank you, Mr. Chairman. I appreciate having another opportunity to discuss with you the economics of climate change and the Administration's efforts to address this significant environmental challenge. As you know, I have appeared before you twice previously to discuss the economics of climate change. In my first appearance, I emphasized that if flexible, market-based mechanisms are effectively used, the costs of cutting greenhouse gas emissions is reduced. Complementing this point, I stated in March of this year that the costs of achieving our Kyoto target would be modest if we effectively implement international trading, joint implementation, and the Clean Development Mechanism and we achieve meaningful developing country participation. Since I last appeared before this subcommittee, the Administration released the report "The Kyoto Protocol and the President's Policies to Address Climate Change: Administration Economic Analysis." In addition, the Stanford Energy Modeling Forum has been coordinating an economic modeling exercise of the Kyoto agreement, and the participating modelers have made available some of their preliminary results. Today, I will provide a brief summary of the Administration's Economic Analysis and review several of the key findings of the Energy Modeling Forum effort.

**Costs of Climate Change**

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of greenhouse gases have reached levels well above those of preindustrial times. If growth in global emissions continues unabated, the atmospheric concentration of carbon dioxide (CO<sub>2</sub>) will likely double relative to its preindustrial level by midway through the next century and continue to rise thereafter. As a result of the increased concentration of CO<sub>2</sub>, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. Potential consequences associated with this shift in climate include a rise in sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity. For further discussion of the costs of climate change, I refer you to the Administration Economic Analysis.<sup>1</sup>

<sup>1</sup> Please refer to the attached paper copy or <http://www.whitehouse.gov/WH/New/html/kyoto.pdf> for a PDF version of this document.

## **The Kyoto Protocol and the Buenos Aires Conference of the Parties**

Previously, Undersecretary Eizenstat and I appeared before this Committee to discuss the Kyoto Protocol and the Administration's efforts to address the risks of climate change. In my testimony, I described the many important flexibility mechanisms in the Kyoto Protocol and how they would allow countries to cost-effectively achieve the emissions targets established in this agreement. We have termed these "when", "what", and "where" flexibility, and I refer you to the Administration Economic Analysis for a full discussion of these flexibilities. Since we secured international trading, the Clean Development Mechanism, and joint implementation last year in Kyoto, the Administration has worked in bilateral and multilateral arenas to promote understanding of these mechanisms and to develop rules that will promote their efficient operation. This work will continue in the talks in Buenos Aires and beyond. While I will defer to the Department of State for a discussion of the upcoming negotiations, I will reiterate that efficient implementation of these flexibility mechanisms is critical to reducing the costs of achieving the targets established in the Kyoto Protocol.

### **Costs of Action**

In assessing the economic effects of the Kyoto Protocol, the Administration has drawn on the insights of a wide range of models and analysis. Examples include models of the energy sector and economy over the next 25 years, such as the Stanford Energy Modeling Forum, the Intergovernmental Panel of Climate Change's review of the economic and social dimensions of climate change, the work of the OECD on the economic dimensions and policy responses to global warming, and the Administration's staff-level interagency analysis. In addition, the Administration used other tools, such as a meta-analysis, basic economic reasoning, overviews of the domestic and international energy sectors, simple statistics regarding energy efficiency and greenhouse gas emissions, and economic indicators from World Bank, International Energy Agency, and Energy Information Administration databases.

Assuming that effective mechanisms for international trading, joint implementation, and the Clean Development Mechanism are established, and assuming also that the United States achieves meaningful developing country participation, the Administration's overall assessment is that the economic cost to the United States in aggregate and to typical households of attaining the targets and timetables specified in the Kyoto Protocol will be modest. This conclusion is not entirely dependent upon, but is fully consistent with, formal model results. The Administration continues to believe that there are limitations to relying on any single model to assess the economic impact of the Kyoto Protocol. However, model results can further inform and improve the understanding of the effects of climate change policy. To complement the economic analysis of the Administration's policy to address climate change, we have conducted an illustrative assessment with a modified version of the Second Generation Model. The results

from the SGM substantiate the conclusion that the economic effects of an efficient, effective, and global policy to address the risks of climate change will be modest.

An assessment using the SGM model that accounts for effective trading and developing country participation yields permit price estimates ranging between \$14/ton and \$23/ton, and resource costs between \$7 billion and \$12 billion/year. The range reflects uncertainty about the extent of Annex I participation in international trading.

Under the assumptions of the Administration's analysis, permit prices in the range of \$14/ton to \$23/ton translate into energy price increases at the household level between 3 and 5%.

Under these permit prices, fuel oil prices would increase about 5 to 9 percent, natural gas prices about 3 to 5 percent, gasoline prices about 3 to 4 percent (or around 4 to 6 cents per gallon), and electricity prices about 3 to 4 percent. This increase in energy prices at the household level would raise the average household's energy bill in ten years by between \$70 and \$110 per year, although such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity restructuring. By 2008-2012, the anticipated 10 percent decline in electricity prices from the restructuring that is part of our climate change agenda is projected to lead to expenditure reductions of about \$90 per year for the average household.

The illustrative modeling analysis does not account for several key components of the Kyoto Protocol and the Administration's policies to reduce greenhouse gas emissions. These key issues include the benefits of reducing net emissions through carbon sinks, the Administration's electricity restructuring proposal, the Administration's Climate Change Technology Initiative, the Administration's sectoral consultations to encourage and support voluntary efforts by U.S. industry to undertake emissions reductions, including the provision of credit for early action, and the Administration's efforts to reduce federal energy use.

Since I last testified before this Committee, the Administration has released its proposed electricity restructuring legislation and the supporting analysis of this proposal. The Administration's proposed Comprehensive Electricity Competition Act (CECA) is estimated to reduce greenhouse gas emissions by about 25 to 40 million metric tons of carbon equivalent per year by 2010. Although competition will lower prices, which will tend to increase consumption, it will also provide a direct profit incentive for generators to produce more electricity with less fuel, and improve energy efficiency as competitive sellers seek to maximize the value of their product offerings to buyers by bundling electricity with energy efficiency and management services. These efficiency improvements should yield emissions reductions. Specific CECA provisions that will yield additional emission reductions include a renewable portfolio standard, a public benefits fund that will support renewable energy and energy efficiency investments, "green" labeling to help consumers who value clean energy choose it, and a net metering provision encouraging the installation of small renewable systems.

The Administration's electricity restructuring proposal provides potential cost-savings in four areas: dispatch efficiency, improved capital utilization, savings in capital additions and cost reductions in fuel procurement, non-fuel operation and maintenance expenses, and administrative and general expenses. These four categories of savings are likely to reach or exceed \$20 billion annually. For further discussion on the Administration's electricity restructuring proposal, I refer you to the Department of Energy's CECA supporting analysis documents.<sup>2</sup>

### **Recent Research on the Economics of Climate Change**

Since I last appeared before this Committee, many economists have conducted and made available their analyses of the Kyoto Protocol. I noted in both of my previous appearances that there are limitations to relying on one or a small set of models and that we were eager to see assessments of the Kyoto Protocol by other models. In March, I indicated that the Energy Modeling Forum (EMF) based at Stanford University, a long-running model comparison exercise involving many of the leading climate and energy models, would conduct full scale analyses of the Kyoto Protocol. We have now received a compilation of the preliminary analyses by the participating modeling teams.

#### *EMF Kyoto Analyses*

The Energy Modeling Forum comparison exercise of the Kyoto Protocol has included ten modeling teams from the United States, Europe, and Asia. In evaluating the Kyoto Protocol, all the participating teams used economic models that can model international trading in greenhouse gas permits. By explicitly modeling international trading, these models can evaluate the opportunities for cost-savings through trading among Annex I nations and among Annex I and developing countries were they to adopt emissions targets. Since the Kyoto Protocol enables all countries with emissions targets to trade emissions allowances among other countries with targets, these models are well-suited to assess the economic implications of the international trading component of the agreement.

While the EMF models can assess international trading, there are several other flexibility mechanisms of the Kyoto Protocol that they cannot, at present, readily assess. For example, these models did not incorporate the effects of sinks. While several modelers did assess the economic costs of achieving the Kyoto targets with "off-line" assumptions about sink activity, none had an integrated energy-land use model. Further, most of the modelers did not incorporate opportunities to reduce costs by trading across greenhouse gases. These models are primarily energy models and are focused on the economics of reducing carbon emissions from fossil fuel combustion. Again, some modelers analyzed the Protocol by making some "off-line"

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assumptions about the potential reductions in non-carbon dioxide greenhouse gases, but none employed a model with cost curves for these gases. Finally, it should be noted that these models did not include opportunities for emissions reduction through Administration proposals, such as electricity restructuring or the Climate Change Technology Initiative, that could lower greenhouse gas permit prices.

The EMF results provide very useful context for the Administration's economic analysis. First, the illustrative model used by the Administration, the Second Generation Model of Battelle Laboratory, tends to fall in the middle of the range of this set of models in terms of U.S. permit prices.<sup>3</sup> For example, under Annex I trading SGM generates a permit price which is at the median of this set of models. Under full global trading, the SGM permit price is just below the median permit price. Second, the EMF exercise found that the reduction in permit price as trading expands from no trading to Annex I trading to full global trading is robust. On average, the EMF models found that Annex I trading would cut the U.S. permit price by 52% relative to a no trading scenario. Of these models, one estimated a 72% reduction in the permit price under Annex I trading. In full global trading, the permit price would be, on average, 78% lower than the no trading price. Several models estimated permit price reductions of about 90%.

#### *Analyses of Trading Constraints*

In addition to the modeling of various efficient international trading scenarios, several EMF modeling teams have considered potential constraints on the opportunity to buy or sell emissions allowances in an international market. These scenarios are intended to reflect potential quantifications of the term "supplemental" in the international trading article of the Kyoto Protocol (Article 17). While the United States is unambiguously opposed to trading restrictions, several parties to the agreement have indicated support for some form of a trading constraint. Trading restrictions would generate no benefit for the global climate while they could significantly increase the costs of achieving the Kyoto targets. In other words, trading restrictions would be "doing it dumb."

Before describing the economic costs of trading constraints, I would like to explain why such constraints yield no climate benefits. Regardless of where an emission reduction occurs, it has the same effect on total emissions and the same effect on the climate. A ton reduced in New York generates the same climate benefit as a ton reduced in Berlin. In proposing trading constraints, some have focused on countries that will likely have "hot air" during the

<sup>3</sup> Please note that the version of SGM used in EMF differs from the analysis conducted by the Administration because the EMF version does not include cost curves for non-carbon dioxide greenhouse gases used by the Administration. Since efficient trading across gases would lower costs and permit prices, the EMF version of SGM yields slightly higher permit prices than the Administration version.

commitment period. This “hot air” refers to countries, such as Russia, that will have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. If trading constraints are established that restrict the ability of Russia to sell hot air (or restrict the opportunity for other Annex I countries to buy hot air), then emissions during the first commitment period would be lower than if there were no trading constraints. However, Russia would simply bank its hot air and use these emissions allowances in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is relevant in terms of changes in the global climate.

To provide a sense of the economic implications of trading constraints, I would like to share with you two examples from work done by EMF modeling teams. First, consider a trading constraint of the form that mandates that at least two-thirds of the emissions reductions necessary for a country to achieve its Kyoto target must occur through domestic actions. Evaluating this trading constraint with the EPPA model based at the Massachusetts Institute of Technology, the permit price for the United States is almost four times higher with the constraint than under an unconstrained global trading system. It is important to note that the effects of this constraint are even more pronounced for the European Union and for Japan. The permit price for the EU would be more than five times higher than the unconstrained global trading permit price, and the Japanese permit price would be thirteen times higher. As these results indicate, the trading constraint would result in each country experiencing a different marginal cost of abatement, and there would be no common permit price for a ton of carbon equivalent. Since the constraint restricts opportunities for countries like the United States, Japan, and members of the EU to buy emissions allowances, the competitive price for emissions allowances from countries like Russia will fall below the unconstrained level.

Second, consider a trading constraint of the form that mandates that acquisitions of permits through international trading could not exceed 10% of a country’s emissions allocation. For example, the U.S. target is approximately 1.5 billion tons of carbon equivalent on an annualized basis. Under this trading constraint, the United States, or private firms in the United States, could not purchase more than 150 million tons on an annual basis from other countries. Assessing this trading constraint with the Second Generation Model based at Battelle Laboratory, the permit price for the United States would nearly quadruple relative to the unconstrained global trading permit price. For the EU, the permit price would be more than three times higher, and for Japan, the permit price would be more than twelve times higher than the unconstrained global price.

While trading constraints increase greenhouse gas permit prices (and subsequently, energy prices) in the United States, the European Union, and Japan, they also reduce the gains

from trade by the countries likely to be sellers of emissions allowances. For example, in a world where large developing countries adopt emissions growth targets and participate in international trading, Russia, China, and India would sell fewer emissions allowances at lower international permit prices under such trading constraints than in an unconstrained global trading environment.

### *Developing Country Participation*

While no non-Annex I country has yet adopted a binding emissions target, there are economic and environmental benefits if some developing countries do so. For example, a target set at slightly below the business as usual emissions level for the commitment period would allow for a developing country to continue to develop. First, this would generate climate benefits by reducing global emissions below what they would otherwise have been. Second, a developing country could undertake some further emissions reductions below its target if the marginal cost of doing so were below the trading price for a greenhouse gas permit. For large developing countries, like China, many of the EMF models indicate that this would be the case. These developing countries could then export emissions allowances in excess of their costs of abatement and gain from trade. Third, Annex I countries (and private firms in these countries), who would purchase these emissions allowances, would achieve their targets at lower costs with the lower global permit price. However, it should be noted that the more stringent the target for the developing country, the lower the gains from trade for both that country and for Annex I countries such as the United States. Indeed, an extremely stringent target could conceivably make the developing country a net importer of emissions allowances, and raise the international trading price for a greenhouse gas permit. Still, these models illustrate the potential to create targets that simultaneously make the environment, the developing country, and Annex I countries all better off.

### **Conclusion**

The Administration's overall conclusion is that the economic impact of the Protocol will be modest under the conditions we have identified in our economic analysis. The purpose of this testimony has been to summarize the analysis we have presented in the Administration Economic Analysis on climate change and to provide a brief update of recent modeling efforts outside of the government.

I look forward to continuing to work with members of this Committee, as well as with other interested parties, in further analyzing the Kyoto Protocol and evaluating the net effects of reducing greenhouse gas emissions. It is my hope that economic analysis will continue to play a key role in designing policies in this area.

I welcome your questions.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:30-SEP-1998 15:55:52.00

SUBJECT: Re: draft 3 of GCC testimony

TO: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

I am sorry to have taken so long to get back to you on this. I am very happy with the testimony. I have made some editorial changes on this draft and a revised draft is attached. If you have already circulated this draft, you can include my changes later. You should circulate this to WH staff. ===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

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The following is a HEX DUMP:

**TESTIMONY OF DR. JANET YELLEN  
CHAIR, COUNCIL OF ECONOMIC ADVISERS  
BEFORE THE  
U.S. HOUSE OF REPRESENTATIVES  
COMMERCE SUBCOMMITTEE ON ENERGY AND POWER**

**TUESDAY OCTOBER 6, 1998**

Thank you, Mr. Chairman. I appreciate having this opportunity to discuss with you the economics of climate change and the Administration's efforts to address this significant environmental challenge. As you know, I have testified on this topic before this Committee on two prior occasions. In my first appearance, prior to the Kyoto negotiations, I emphasized that if flexible, market-based mechanisms are effectively used, the costs of cutting greenhouse gas emissions would be significantly reduced. Elaborating on this point, I stated in March of this year that, in the Administration's view, the costs of achieving our Kyoto target would be modest if we can succeed in implementing international trading, joint implementation, and the Clean Development Mechanism in an efficient manner and we achieve meaningful developing country participation. A report released by the Administration in July, entitled "The Kyoto Protocol and the President's Policies to Address Climate Change: Administration Economic Analysis" elaborates the assumptions and analysis underlying this conclusion. In addition, the Stanford Energy Modeling Forum has been coordinating an economic modeling exercise of the Kyoto agreement, and the participating modelers have made available some of their preliminary results.

Today, I will provide a brief summary of the Administration's Economic Analysis and review several of the key findings of the Energy Modeling Forum effort.

**Costs of Climate Change**

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of greenhouse gases have reached levels well above those of preindustrial times. If growth in global emissions continues unabated, the atmospheric concentration of carbon dioxide (CO<sub>2</sub>) will likely double relative to its preindustrial level by midway through the next century and continue to rise thereafter. As a result of the increased concentration of CO<sub>2</sub>, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. Potential consequences associated with this shift in climate include a rise in sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity. Further discussion of the costs of climate change is contained in the Administration Economic Analysis.<sup>1</sup>

<sup>1</sup> Please refer to the attached paper copy or

## **The Kyoto Protocol and the Buenos Aires Conference of the Parties**

Previously, Undersecretary Eizenstat and I appeared before this Committee to discuss the Kyoto Protocol and the Administration's efforts to address the risks of climate change. In my testimony, I described the many important flexibility mechanisms in the Kyoto Protocol and explained how they would allow countries to achieve cost-effectively the emissions targets established in this agreement. These mechanisms, which permit what we have termed "when", "what", and "where" flexibility in meeting the Kyoto emissions targets, are described in detail in the Administration Economic Analysis for a full discussion of these flexibilities. Since securing international emissions trading, the Clean Development Mechanism, and joint implementation last year in Kyoto, the Administration has worked in bilateral and multilateral arenas to promote understanding of these mechanisms and to develop rules that will promote their efficient operation. This work will continue in the talks in Buenos Aires and beyond. While I will defer to the Department of State for a discussion of the upcoming negotiations, I will reiterate that efficient implementation of these flexibility mechanisms is critical to reducing the costs of achieving the targets established in the Kyoto Protocol.

### **Costs of Action**

In assessing the economic effects of the Kyoto Protocol, the Administration has drawn on the insights of a wide range of models and analysis. Examples include models of the energy sector and economy over the next 25 years, such as the Stanford Energy Modeling Forum, the Intergovernmental Panel of Climate Change's review of the economic and social dimensions of climate change, the work of the OECD on the economic dimensions and policy responses to global warming, and the Administration's staff-level interagency analysis. In addition, the Administration used other tools, such as a meta-analysis, basic economic reasoning, overviews of the domestic and international energy sectors, simple statistics regarding energy efficiency and greenhouse gas emissions, and economic indicators from World Bank, International Energy Agency, and Energy Information Administration databases.

Assuming that effective mechanisms for international trading, joint implementation, and the Clean Development Mechanism are established, and assuming also that the United States achieves meaningful developing country participation, the Administration's overall assessment is that the economic cost to the United States in aggregate and to typical households of attaining the targets and timetables specified in the Kyoto Protocol will be modest. This conclusion is not entirely dependent upon, but is fully consistent with, formal model results. The Administration continues to believe that there are limitations to relying on any single model to assess the economic impact of the Kyoto Protocol. However, model results can further inform and

<http://www.whitehouse.gov/WH/New/html/kyoto.pdf> for a PDF version of this document.

improve the understanding of the effects of climate change policy. To complement the economic analysis of the Administration's policy to address climate change, we have conducted an illustrative assessment with a modified version of the Second Generation Model. The results from the SGM substantiate the conclusion that the economic effects of an efficient, effective, and global policy to address the risks of climate change will be modest.

An assessment using the SGM model that accounts for effective trading and developing country participation yields permit price estimates ranging between \$14/ton and \$23/ton, and direct resource costs between \$7 billion and \$12 billion/year. The range reflects uncertainty about the extent of Annex I participation in international trading.

Under the assumptions of the Administration's analysis, permit prices in the range of \$14/ton to \$23/ton translate into energy price increases at the household level between 3 and 5%.

Under these permit prices, fuel oil prices would increase about 5 to 9 percent, natural gas prices about 3 to 5 percent, gasoline prices about 3 to 4 percent (or around 4 to 6 cents per gallon), and electricity prices about 3 to 4 percent. This increase in energy prices at the household level would raise the average household's energy bill in ten years by between \$70 and \$110 per year, although such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity restructuring. By 2008-2012, the anticipated 10 percent decline in electricity prices from the restructuring that is part of our climate change agenda is projected to lead to expenditure reductions of about \$90 per year for the average household.

The illustrative modeling analysis does not account for several key components of the Kyoto Protocol and the Administration's policies to reduce greenhouse gas emissions. These include the benefits of reducing net emissions through carbon sinks, the Administration's electricity restructuring proposal, the Administration's Climate Change Technology Initiative, the Administration's sectoral consultations to encourage and support voluntary efforts by U.S. industry to undertake emissions reductions, including the provision of credit for early action, and the Administration's efforts to reduce federal energy use.

Since I last testified before this Committee, the Administration has released its proposed electricity restructuring legislation and the supporting analysis of this proposal. The Administration's proposed Comprehensive Electricity Competition Act (CECA) is estimated to reduce greenhouse gas emissions by about 25 to 40 million metric tons of carbon equivalent per year by 2010. Although competition will lower prices, which will tend to increase consumption, it will also provide a direct profit incentive for generators to produce more electricity with less fuel, and improve energy efficiency as competitive sellers seek to maximize the value of their product offerings to buyers by bundling electricity with energy efficiency and management services. These efficiency improvements should yield emissions reductions. Specific CECA provisions that will yield additional emission reductions include a renewable portfolio standard, a public benefits fund that will support renewable energy and energy efficiency investments,

“green” labeling to help consumers who value clean energy choose it, and a net metering provision encouraging the installation of small renewable systems.

The Administration’s electricity restructuring proposal provides potential cost-savings in four areas: dispatch efficiency, improved capital utilization, savings in capital additions and cost reductions in fuel procurement, non-fuel operation and maintenance expenses, and administrative and general expenses. These four categories of savings are likely to reach or exceed \$20 billion annually. The Department of Energy’s CECA supporting analysis documents<sup>2</sup> contain further discussion of the Administration’s electricity restructuring proposal.

### **Recent Research on the Economics of Climate Change**

Since I last appeared before this Committee, many economists have conducted and made available their analyses of the Kyoto Protocol. I noted in both of my previous appearances that there are limitations to relying on one or a small set of models and that we were eager to see assessments of the Kyoto Protocol by other models. In March, I indicated that the Energy Modeling Forum (EMF) based at Stanford University, a long-running model comparison exercise involving many of the leading climate and energy models, would conduct full scale analyses of the Kyoto Protocol. We have now received a compilation of the preliminary analyses by the participating modeling teams.

#### *EMF Kyoto Analyses*

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While the EMF models can assess international trading, there are several other flexibility mechanisms of the Kyoto Protocol that they cannot, at present, readily assess. For example, these models did not incorporate the effects of sinks. While several modelers did assess the economic costs of achieving the Kyoto targets with “off-line” assumptions about sink activity, none incorporated an integrated energy-land use model. Further, most of the modelers did not evaluate opportunities to reduce costs by trading across greenhouse gases. These models are

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primarily energy models and are focused on the economics of reducing carbon emissions from fossil fuel combustion. Again, some modelers analyzed the Protocol by making some “off-line” assumptions about the potential reductions in non-carbon dioxide greenhouse gases, but none employed a model with cost curves for these gases. Finally, it should be noted that these models did not include opportunities for emissions reduction through Administration proposals, such as electricity restructuring or the Climate Change Technology Initiative, that could lower greenhouse gas permit prices.

The EMF results provide very useful context for the Administration’s economic analysis. First, the illustrative model used by the Administration, the Second Generation Model of Battelle Laboratory, tends to fall in the middle of the range of this set of models in terms of U.S. permit prices.<sup>3</sup> For example, under Annex I trading SGM generates a permit price which is at the median of this set of models. Under full global trading, the SGM permit price is just below the median permit price. Second, the EMF exercise found that the reduction in permit price as trading expands from no trading to Annex I trading to full global trading is robust. On average, the EMF models found that Annex I trading would cut the U.S. permit price by 52% relative to a no trading scenario. Of these models, one estimated a 72% reduction in the permit price under Annex I trading. In full global trading, the permit price would be, on average, 78% lower than the no trading price. Several models estimated permit price reductions of about 90%.

#### *Analyses of Trading Constraints*

In addition to the modeling of various efficient international trading scenarios, several EMF modeling teams have considered the impact of constraints on the opportunity to buy or sell emissions allowances in an international market. These scenarios are intended to reflect potential quantifications of the term “supplemental” in the international trading article of the Kyoto Protocol (Article 17). While the United States is unambiguously opposed to trading restrictions, several parties to the agreement have indicated support for some form of a trading constraint. Trading restrictions would generate no benefit for the global climate while they could significantly increase the costs of achieving the Kyoto targets.

Before describing the economic costs of trading constraints, I would like to explain why such constraints yield no climate benefits. Regardless of where an emission reduction occurs, it has the same effect on total emissions and the same effect on the climate. A ton reduced in New York generates the same climate benefit as a ton reduced in Berlin. In proposing trading

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constraints, some have focused on countries that will likely have “hot air” during the commitment period. This “hot air” refers to countries, such as Russia, that will have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. If trading constraints are established that restrict the ability of Russia to sell hot air (or restrict the opportunity for other Annex I countries to buy hot air), then emissions during the first commitment period would be lower than in the absence of such constraints. However, Russia would simply bank its hot air and use these emissions allowances in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is relevant in terms of changes in the global climate.

To provide a sense of the economic implications of trading constraints, I would like to share with you two examples from work done by EMF modeling teams. First, consider a trading constraint that mandates that at least two-thirds of the emissions reductions necessary for a country to achieve its Kyoto target must occur through domestic actions. Evaluating this trading constraint with the EPPA model based at the Massachusetts Institute of Technology, the permit price for the United States is almost four times higher with the constraint than under an unconstrained global trading system. It is important to note that the effects of this constraint are even more pronounced for the European Union and for Japan. The permit price for the EU would be more than five times higher than the unconstrained global trading permit price, and the Japanese permit price would be thirteen times higher. As these results indicate, the trading constraint would result in each country experiencing a different marginal cost of abatement, and there would be no common permit price for a ton of carbon equivalent. Since the constraint restricts opportunities for countries like the United States, Japan, and members of the EU to buy emissions allowances, the competitive price for emissions allowances from countries like Russia would fall below the unconstrained level.

Second, consider a trading constraint that mandates that acquisitions of permits through international trading could not exceed 10% of a country’s emissions allocation. For example, the U.S. target is approximately 1.5 billion tons of carbon equivalent on an annualized basis. Under this trading constraint, the United States, or private firms in the United States, could not purchase more than 150 million tons on an annual basis from other countries. Assessing this trading constraint with the Second Generation Model based at Battelle Laboratory, the permit price for the United States would nearly quadruple relative to the unconstrained global trading permit price. For the EU, the permit price would more than triple, and for Japan, the permit price would be more than twelve times as high as the unconstrained global price.

While trading constraints increase greenhouse gas permit prices (and subsequently, energy prices) in the United States, the European Union, and Japan, they also reduce the gains

from trade by the countries likely to be sellers of emissions allowances. For example, in a world where large developing countries adopt emissions growth targets and participate in international trading, Russia, China, and India would sell fewer emissions allowances at lower international permit prices under such trading constraints than in an unconstrained global trading environment.

### *Developing Country Participation*

While no non-Annex I country has yet adopted a binding emissions target, economic and environmental benefits would accrue if some developing countries do so. For example, a target set slightly below the business as usual emissions level for the commitment period would generate climate benefits by reducing global emissions below what they would otherwise have been. In addition the participation of the country in a global trading system would produce economic benefits or “gains from trade” for both the developing country and its trading partners. Emissions trading by developing countries would occur if they chose to undertake emissions reductions above and beyond their commitments--reductions that would generate trading extra income for them as long as their marginal abatement cost is below the world trading price for greenhouse gas permits. Many of the EMF models reveal that, for large developing countries, like China, such excess reductions would indeed be profitable, so that these countries would export permits and gain from trade. Benefits from such trading would also accrue to Annex I countries. Annex I countries (and private firms in these countries), who would purchase these emissions allowances in the world market, would achieve their targets at lower cost than without the participation of the developing countries. However, it should be noted that the more stringent the target for the developing country, the lower the gains from trade both for that country and for Annex I countries such as the United States. Indeed, an extremely stringent target could conceivably make the developing country a net importer of emissions allowances, and raise the international trading price for a greenhouse gas permit. Still, these models illustrate the potential to create targets that simultaneously make the environment, the developing country, and Annex I countries all better off.

### **Conclusion**

The Administration’s overall conclusion is that the economic impact of the Protocol will be modest under the conditions we have identified in our economic analysis. The purpose of this testimony has been to summarize the analysis we have presented in the Administration Economic Analysis on climate change and to provide a brief update of recent modeling efforts outside of the government.

I look forward to continuing to work with members of this Committee, as well as with other interested parties, in further analyzing the Kyoto Protocol and evaluating the net effects of reducing greenhouse gas emissions. It is my hope that economic analysis will continue to play a key role in designing policies in this area.

I welcome your questions.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME:30-SEP-1998 09:45:30.00

SUBJECT: Speeches

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

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The following is a HEX DUMP:

## Remarks at Women's Economic Roundtable Award Dinner

It is an enormous honor to receive the Maria and Sidney Rolfe Award for contributions to national economic policy.

I would like to thank the Women's Economic Roundtable for selecting me for this distinguished award and I particularly want to thank Paul Volcker for his very generous remarks. I consider it a special tribute to receive this award from an individual whose own contributions to public service and economic policy are legendary. Paul's distinguished career epitomizes the ideals to which economists aspire when we are given the chance to help formulate public policy. The core insights of our discipline clearly have direct relevance to the design of public policy, and economics can contribute enormously to societal welfare. But relatively few economists are offered the opportunity to serve. I thus owe President Clinton a huge debt of gratitude for affording me two extraordinary opportunities to do my best to put economics to work in the public interest--first, in our nation's Central Bank and now, at the Council of Economic Advisers.

I will confess that serving as a Governor of the Federal Reserve was a dream that I had harbored ever since I took my first course in macroeconomics as an undergraduate at Brown in 1965. When the phone rang, in April of 1994, and I was asked whether I would be interested in being considered for the position of Governor of the Federal Reserve System-- it therefore took me all of 2 seconds to say yes. It was apparent to me that monetary policy, properly conducted, has the potential to mitigate economic fluctuations and to create the backdrop of price stability which is a necessary prerequisite for sustainable growth at a maximum pace. Even more fundamental, the Federal Reserve's task is to insure the safe and sound operation of our national and global financial system. Having a seat at the coveted FOMC table I knew would provide an extraordinary opportunity for public service. Because Paul did the hard work of moving this country toward price stability, it was my good fortune to serve on the FOMC during a period when everything has been coming up roses.

During my watch, the major intellectual challenge for monetary policy to address was why inflation was so well behaved with unemployment below what most of us conceived of as NAIRU. Even so, I considered it fascinating to have the chance to debate, to research and to weigh alternative explanations of what is responsible for America's good fortune and to tackle challenging strategic questions relating to the conduct of monetary policy--what its long run run goals should be, whether and how to enunciate them, and what tactics to follow in attaining those goals.

Although I had been extremely surprised to receive a call inquiring about my interest in a Governorship at Federal Reserve, I confess that I was literally stunned when, two years later, I received a call from Erskine Bowles asking if I would consider serving as Chair of the Council of Economic Advisers.

This time I hesitated. I was extremely happy at the Federal Reserve, which is a truly extraordinary institution, and I thought that I had finally learned enough to be productive. And I had never had the audacity to even dream of being the Chair of the Council of Economic Advisers. The task seemed daunting. Nevertheless, when the President asks, it is one's duty to accept.

The CEA is one of the great creations of the American government--an economic consulting group within the White House. It is one of the smallest agencies in Washington. While others have budgets of billions, the CEA subsists, with its 3 members 10 senior economists, mainly one year rotators from academia, and support staff on a budget that is considerably smaller than that of a medium-sized department of economics, about one thousandth of the budget of the still fairly small Federal Reserve. Nevertheless, the CEA is the mouse that roars.

Beyond keeping the President informed about the key economic developments in the American and global economies, the CEA's duty is to assess the economic impacts on national welfare of the various policy options under

consideration by the President relating to any Administration decision with a significant economic component, which is almost everything these days. To make such assessments, the CEA relies on the full body of available economic theory and data, including the most timely and relevant economic analyses available on whatever topic is under consideration. We reach out to the economics profession broadly to assimilate, and incorporate where possible, the best thinking on the topics under consideration.

Before I took this job I considered it all but impossible, requiring simply too broad a range of knowledge concerning too many topics. Indeed, at any time, a dozen or more different issues may be under active consideration and debate: To provide a few examples, over the last six months I have been involved in policy processes in the areas of: global warming, affirmative action, entitlements, tax reform, the budget, the tobacco agreement, financial sector modernization, implementation of the Clean Air Act, electricity restructuring, privatization of USEC, implementation of new programs on children's health and fast track. In spite of this extraordinary range, I am discovering what other CEA chairs before me have observed--that the theoretical principles which most often require emphasis are not those at the frontiers of current research but rather the tried and true principles of supply and demand, opportunity costs, incidence, and comparative advantage that are the bread and butter of mainstream economics--all of the principles familiar to students of Economics One.

By applying core economic principles and focusing on the national interest, broadly defined, rather than any special interest, the CEA has always--in Democratic and Republican Administrations alike--served as a voice for sound and efficient policies. It has stood against the controlled economy in all of its forms. But it has also opposed completely unrestrained laissez faire. It has espoused the importance of capitalism and the market, but recognized that the government has a complementary role to play to make markets work and to address market failures. The CEA has always supported free, and also free-er, trade. We have usually been in favor of deregulation, and where regulation is necessary and desirable, as in the pursuit of environmental objectives, we have favored the use of prices and markets as the preferred means of achieving the

object of regulation. And the CEA's job has always been to stop bad ideas from becoming policy and to focus on factors influencing the long run performance of the economy-- particularly its potential to grow.

One of the CEA's most useful roles is examining incentives and looking for loopholes. Faced with a constant stream of well-intentioned proposals, we typically ask: Will the policy actually work as planned? For example, will money given to the states for education or for welfare really be used for these purposes, or will it just add to the general state coffers with the money redistributed as the Governors and the state legislatures wish? Will programs for affirmative action really end up aiding minorities? Will seemingly small changes in financial regulations dismantle important safety provisions because opening the window a crack is the precursor to unforeseen inventions which will open the window wide? The fundamental work of Miller and Modigliani which says that the private market will undo any attempts by the firm to control its valuation by setting the debt equity ratio is an always pertinent insight for government. As economists we scrutinize carefully each and every proposal with the question: will the private market undo what the government seeks by legislation or by regulation?

~~The CEA has always been a voice of reason in Washington by using elementary economic logic, but increasingly over time we have been able to do even better by by bringing empirical evidence to bear on policy decisions. Economics has advanced as a science and we now have better estimates of parameters that turn out to be crucial to policy design, like the rate of return to an additional year of schooling, or the demand elasticities and supply elasticities that are critical to estimating the costs and the benefits of most programs.~~

People often make fun of economists. They joke, for example, that economists are always two handed: They typically say, "On the one hand this, and on the other hand that" or "It all depends." But the body politic errs when it insists that the right answer can fit on a T-shirt. Economists are good at insisting on asking hard questions and demanding solid evidence.

Let me conclude by emphasizing that, as the President's Chief Economist in the White House, I have the great privilege

of serving as an intermediary between the economics profession and the Administration, bringing the best economic research to bear in the process of public policy formation. It was a tremendous honor to have been appointed to the job and and a particular honor to be named the recipient of the Rolfe Award this evening. I accept it not just on behalf of myself but on behalf of the Council of Economic Advisers, which for the past 50 years has served the President and the nation and and has represented the cumulative wisdom of the economics profession.

Thank you very much.

Remarks of  
Janet L. Yellen  
Chair of the President's Council of Economic Advisers  
at Institutional Investors Conference  
September 15, 1998

Thank you. It is a pleasure to be here. In my remarks today I would like to discuss the current state of the American economy, especially in light of the turmoil in world financial markets and the international economy. I would then like to focus on the outlook going forward, particularly the risks to the outlook, as well as the policies that are necessary to sustain growth in the United States and the world economy.

With all the recent attention on baseball records, I would like to remind you that the U.S. economy too is on track to set a record this year. With continued growth, this expansion will enter its 93rd month in December, replacing 1982-90 as the longest peacetime expansion on record. As I will discuss further in a minute, the economic fundamentals remain sufficiently strong that I am not overly worried that mentioning this possibility will jinx the expansion. Moreover, if we are successful in sustaining America's growth, this expansion will hit its 107 month in February 2000, making it the longest expansion on record. (The expansion of 1961 to 1969, lasted 106 months.)

The Current State of the Economy

Let me turn to a discussion of the current state of the economy, in order to lay the groundwork for a discussion of where we go from here. Last week, in light of the turmoil in

world financial markets, the President asked me for an update on the state of the U.S. economy. I was able to report to him that, consistent with consensus forecasts, the fundamentals are in place for continued solid economic growth, though developments in world markets continue to bear close monitoring and pose decided risks to our economy.

The economy is healthy and remains largely free of the symptoms that often presage an economic downturn—such as an increase in inflation, an accumulation of inventories, or significant financial imbalances. The unemployment rate remains low, job growth remains robust, inflation remains tame, real wages and real personal income are rising, and consumer confidence is high. Even with the recent retreat in the stock market from its July high, household net worth remains high relative to disposable income and businesses do not appear to be taking on excessive debt. To date, the main impact of the Asian crisis on the U.S. economy has been a deterioration of net exports and a widening of the trade deficit. Some financial institutions with emerging market exposure have also suffered losses; and market volatility has clearly increased. However, overall, economic growth appears to be moderating toward the solid pace anticipated in the Blue Chip consensus forecast as well as the Administration's *Midsession Review*.

Let me tick off a few particulars.

- GDP growth. Growth in GDP moderated to a 1.6 percent annual rate in the second quarter after growing 4.2 percent over the previous 4 quarters. The moderation had been expected and was accounted for by three factors: the strike at General Motors, a

sharp drop in non-auto inventory investment, and a deterioration of net exports. Final sales, which exclude inventory changes, grew at a robust 4.4 percent.

With the strike settled, GM will be out to recoup output lost during the strike, which should actually boost GDP in the fourth quarter.

The drop in inventory investment was a necessary part of the transition to more moderate and sustainable growth. The 2.6 percent annual growth rate of nonfarm inventories in the second quarter (which partly reflected the GM strike) is close to the pace consistent with such growth. And inventories remain relatively lean compared with sales.

In contrast to these temporary factors, the widening trade deficit is likely to serve as a drag on growth throughout the year, though the magnitude of that drag should diminish if economic conditions in crisis countries stabilize.

- Labor markets. All available indicators show that the demand for labor remains strong. The unemployment rate has been below 5 percent for more than a year; job gains have averaged 237,000 per month so far this year, and initial claims for unemployment remain close to their lowest levels during this expansion.
- Inflation. Inflation remains under control. The consumer price index has increased only 1.7 percent over the past year—down from 2.2 percent during the same period a year ago. The effect of tight labor markets has been offset by ample industrial capacity, one of the

favorable consequences of the rapid pace of investment in plant and equipment since 1993, as well as falling import prices. These restraining influences are likely to remain in play in the medium term.

- Real wages. Real wages have grown 2.5 percent over the past year. Growth in real wages recently has been the highest in over two decades. Thus far, these gains have been in line with productivity growth, which has grown 2 percent during the past year, somewhat faster than its historical trend. Thus, wage growth has placed little upward pressure on prices.
- Housing. Strong real income growth, together with the drop in mortgage interest rates over the past year is also buoying residential investment. The 1.6 million unit pace of housing starts so far this year is the highest in a decade. Because housing starts lead housing construction, the recent surge in starts points to strong construction for the next several months.
- Business Investment. Equipment investment grew at an extraordinary 26 percent annual rate in the first half of 1998. Business purchases of computers, where the rapid pace of innovation is driving new investment and prices have been falling sharply, accounted for much of this growth. In addition, low long-term interest rates, partly the consequence of the Asian crisis, have reduced the cost of capital, and further interest rate declines in recent weeks are a positive factor in the investment outlook. As long as the relative price

of equipment is falling, it is likely that business investment will continue to grow faster than the economy as a whole. Such strong growth in investment bodes well for future growth in productivity.

- Deficit reduction. For the first time since 1969, the Federal budget is in surplus, and the surplus is projected to increase in coming years. With the Federal budget no longer a drain on national saving, interest rates are lower—providing an incentive for greater private sector investment.

#### Short-term Risks and Outlook

It is reassuring that so many economic fundamentals are in such good shape so far into this expansion. But it is also fortunate, because the U.S. economy needs to be in fundamentally sound shape to weather the storms that have hit the world economy over the past year.

Real U.S. exports of goods and services fell in the first half of the year and net exports subtracted 2 percentage points from GDP growth. According to our estimates, the Asian crisis has reduced exports thus far by about \$30 billion at an annual rate. It appears that all of the past year's weakness in exports is accounted for by the drop in our exports to seven Asian countries: China, Indonesia, Japan, Korea, Malaysia, the Philippines, and Thailand. Our imports from these countries have also risen—although these imports have been on an uptrend for several years. The Asian crisis has also affected U.S. farmers, who are experiencing low prices and shrinking exports, on top of bad weather in some regions.

Although the Asian economic crisis has clearly cut into American exports, several repercussions of the crisis have been favorable for the U.S. outlook. Thus far in 1998, U.S. refiners have been able to purchase imported crude for 5 to 6 dollars less per barrel than in 1997, which translates into lower gasoline prices for consumers. Non-oil import prices have fallen 3.9 percent over the past year—benefitting American consumers and helping to restrain inflation. Finally, the international economic situation has been one factor, along with the fiscal surplus, in keeping interest rates low.

Looking ahead over the next few quarters, net exports are likely to continue to be a drag on growth, though this drag would diminish with the stabilization of crisis-impacted economies. Growth in consumer spending may also moderate. Until now, consumption has been boosted primarily by large increases in real income, but also by substantial gains in stock market wealth. The big boost from a surging stock market may now be behind us. However, continued real income growth should motivate further, but smaller consumption gains.

To sum up, the international financial picture has deteriorated in recent weeks. But based on the effects so far and the overall health and soundness of the U.S. economy, it remains likely that we are in what will turn out to be the longest peacetime expansion on record. Clearly, however, a further deterioration in the international economic situation, including the possibility that the crisis could engulf Latin America, remains the single largest risk to a forecast of continued solid growth.

## Sustaining America's Growth

Turning to the question of how to sustain America's growth, a first imperative is that we work with the international community not only to stabilize conditions but also to promote growth in the world economy. As Chairman Greenspan noted recently, no country, including the United States is an island in the world economy and our growth prospects will suffer if we do not work to promote and restore growth in the world economy.

Let me review our agenda in this area before turning to other elements of our pro-growth agenda.

- First and foremost, the United States has been and must remain a major engine of global growth so that we play a positive role in helping crisis countries recover. Strong growth in the United States and the strong dollar, combined with weak growth in so many of our trading partners makes it inevitable that our trade deficit will swell, negatively impacting some sectors that are heavily exposed to trade. Even so, we must remain prepared to accept a rising trade deficit to help the crisis countries recover. This means guarding against protectionist pressures at home and maintaining a strong labor market conditions so that workers who might be displaced as a result of the crisis can obtain other jobs. The Clinton Administration is committed to outward looking, internationalist policies.
- Other nations must also do their part to help the world economy to grow. Yesterday, the G-7 Finance ministers and central bank governors issued a joint statement indicating that, in their view, the balance of risks in the world economy has shifted so that countries should commit to preserving or creating conditions for sustainable domestic growth.

Analogous to Chairman Greenspan's recent statement they recognized that in many parts of the world inflation is low or falling.

- Japan has a critical role to play as the world's second largest economy and a key determinant of the prospects for Asia's recovery. Japan has now entered a full fledged recession/deflation. Japan's real growth in FY 1997 ended up at -0.7%. In the first half of 1998, real GDP was down at 4.3% at an annual rate--far worse than expected. Japan risks descent into a deflationary spiral in which falling prices raise real interest rates, further discouraging spending. We continue to believe that Japan must take strong measures to stimulate domestic demand led economic growth, to restore confidence, to deal with the problems of its banking system to open its markets and to deregulate its economy.
- Since the outset of this crisis, we have supported the IMF in its goal of providing financial assistance to countries in crisis that are willing to implement the often tough reforms needed to restore economic confidence and strengthen the underpinnings of their economies. We continue to believe that countries must eschew inflationary finance, end cronyism in lending, act to discourage corruption and take steps to strengthen their banking systems by closing or recapitalizing inefficient or insolvent banks.
- The President emphasized yesterday that the world must stand ready to offer assistance to countries with sound policies who have acted responsibly to help them fight off the contagious impact of the ongoing crisis. Even now, the currency crisis is threatening to engulf the economies of Latin America. One key step is to meet our obligation to the International Monetary Fund. The IMF's resources are now badly strained and Congress

simply must act now to enable the United States to meet its own IMF obligations by paying our dues and providing our contribution to the NAB. Market participants need to know that the IMF has the ability to act and failure by the Congress to pay our dues threatens this confidence, placing our own economy at substantial risk. The President also urged the major economies to stand ready to activate the \$15 billion now in the emergency fund of the IMF--the General Agreement to Borrow--to ensure that the IMF continues to support reform and fight contagion.

- At the same time that we support the basic IMF approach which entails asking countries to take responsibility for improving economic fundamentals, we need to do more to help countries get back on their feet, to restore growth and to mitigate the suffering which has been afflicted on so many citizens in the affected countries. Yesterday, President Clinton announced that he has asked Secretary Rubin to work with other financial authorities and international economic institutions to explore comprehensive plans to help Asian corporations emerge from massive debt, where individual firms have been swept under by systemic national economic problems. The object is to restore the flow of credit so that businesses in these countries can get back to work making products and creating jobs.
- The President also has asked the World Bank and Asia Development Bank to double their aid through an expanded Social Compact initiative with a focus on strengthening the social safety net in crisis affected countries. The focus would be on job assistance, basic needs, children, the elderly and groups in the affected countries who are most vulnerable

to economic change.

- Finally, a necessary part of addressing the world financial crisis is to devise ways to reduce the vulnerability of the international system to similar crises in the future. Work has been ongoing, in a variety of international fora, to work toward this end. Most recently, for the first time, a group of industrial and key emerging market countries dubbed the Group of 22 met to work toward the strengthening of the system.

Yesterday, the President called on Secretary Rubin and Chairman Greenspan to chair a major meeting of the G-7 and key emerging market finance ministers and central bankers here in Washington to present a report to the heads of state by the beginning of next year.

The purpose is to devise ways to strengthen the international financial architecture going forward to reduce the likelihood of future crises or lessen their severity if they occur.

We need to improve the rules of the road so that the countries can enjoy the benefits of capital flows while reducing the risks and impacts of economic crises of confidence.

These measures include increasing transparency, strengthening financial systems, and devising strategies for orderly workouts in the event of a future crisis.

Finally, I would like to say just a bit about the other components of the Administration's overall economic strategy. From the outset, this Administration has focused on getting the policy fundamentals right and that approach must continue. Three key policy fundamentals have been fiscal discipline, investing in the skills of the American people, and promoting policies to enhance competition at home and engagement in the global economy. These were the right

policies early on for encouraging the job creation needed to move the economy to full employment and they are the right policies now for nurturing and sustaining the expansion.

As I mentioned earlier, the Federal budget is in the black for the first time since 1969. This is a remarkable accomplishment and reflects a virtuous cycle of sound policies and favorable economic performance. Successful deficit reduction has an important role to play in restoring Americans' confidence in the ability of their government to manage its affairs. But in economic terms, the main purpose of deficit reduction is to boost national saving in order to lower interest rates, boost investment, and increase future consumption opportunities. Between the mid-1980s and the early 1990s, when it appeared that large deficits would persist as far as the eye could see, net national saving and net national investment declined as a share of national income. Since 1993, by contrast, we have seen double-digit rates of increase in business equipment investment, and net national investment as a share of national income has been on the rise.

The key challenge going forward is to protect the gains that have been achieved thus far. In particular, the President is committed to building a secure retirement for the baby boomers and a secure future for our children. That is why he has insisted that we preserve every penny of the budget surplus until we have taken care of the social security system and why he will resist reckless tax or spending schemes that would squander the surplus.

The second key element of the President's policy that will sustain America's growth is

investment in the skills of the American people. In today's increasingly technologically complex world, it is important that American workers have the skills necessary to adapt and compete. A solid education from the early years on is critical to achieving that objective. The President is committed to making American education the best in the world, to having more teachers and smaller classes in the early grades, to extra help with early reading, to modernizing our schools, and to connecting all of our classrooms and libraries to the Internet by the year 2000.

Finally, sustaining America's growth means working to increase competition in our own markets, and to remain engaged in the world economy. The case for open and competitive commerce is that it forces us to innovate and to compete, ultimately speeding the productivity gains that are the source of improved living standards. That is why the President has introduced legislation, for example, to restructure the U.S. electricity sector--to enhance competition. The economic case for opening markets to international trade is equally strong. Trade offers American producers broader markets and it offers American consumers lower prices and a wider choice of goods. But trade, like domestic competition, also brings challenges when it disrupts established patterns of economic activity. The impact of recent developments in the world economy may also obscure the benefits of expanding international trade if the widening trade deficit is mistakenly interpreted as a gauge of the success or failure of our trade policy.

### Conclusion

Let me conclude by pointing out what is at stake in meeting the challenge of sustaining America's growth. Since the productivity slowdown of the early 1970s and until recently, real

wages and standards of living have stagnated, especially for those at the bottom of the economic ladder. Gains achieved during expansions were given back in recessions. Now that we have achieved a high-employment economy grounded in sound policies, we have the potential to overcome some of the longer run problems that have plagued the economy for a long time. Continued strong investment should encourage growth in productivity and real wages. Strong labor markets should provide opportunities for workers who might otherwise have been discouraged to acquire job skills and experience that will create a stronger labor force attachment. Certainly, this Administration is committed to pursuing the policies most likely to achieve these gains.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: rosanne.cahn@csfb.com@INET@LNGTWY ( rosanne.cahn@csfb.com@INET@LNGTWY [ UNKNOWN ] )

CREATION DATE/TIME: 1-OCT-1998 12:56:46.00

SUBJECT: FW: today's article

TO: Janet L. Yellen@eop ( Janet L. Yellen@eop [ CEA ] )  
READ:UNKNOWN

TEXT:

-----Original Message-----

From: Cahn, Rosanne

Sent: Thursday, October 01, 1998 12:33 PM

To: 'Yellen, Janet L.'

Subject: FW: today's article

Dear Janet:

You may be interested in the following.

Watching the testimony of Greenspan/McDonough this morning, I am increasingly concerned about the secrecy issues. No one has specified (and Congress hasn't asked, as near as I can tell) what it was about LTCM's positions that were so threatening to global capital markets. If a commercial bank were similarly taken to the woodshed for a \$100 billion transgression (or whatever the REAL figure is), I think that we all would be informed about just what their transgressions were. The consequences of lack of transparency and not informing markets are well known and I am distressed that the Fed considers this appropriate behavior.

Regards,  
Rosanne

-----Original Message-----

From: Cahn, Rosanne

Sent: Thursday, October 01, 1998 10:35 AM

To: 'mweinstein@nytimes.com'

Cc: 'kathleen.o'neil@ny.frb.org'

Subject: today's article

Dear Mr. Weinstein:

There were several telling omissions from your article.

\* Taxpayer money was very much behind the Fed-organized bailout of LTCM, in the deposit insurance backing up both the bank direct lending and in the bank lending to broker-dealers, who then lent to LTCM.

- \* Losing 90% with an option to rebuy the whole firm is not the same as losing 100% immediately. The moral hazard is very much present.
- \* Creditors, under the orchestration of the Fed, pledged to keep LTCM's investments secret, a major problem behind their original way of doing business.
- \* No one has explained what the "systemic risk" allegedly was. Why should we take the Fed's word that there was one without the facts? More secrecy, leading to more problems later.

Nothing has changed. Would this have occurred if a former Fed Vice Chair were not a partner? The Fed did not attempt to avoid the appearance of cronyism, impropriety and conflict of interest. Meriwether played loser's poker to the end and won. Shame on the other side.

As one wag (probably the greatest genius of all time, Mark Twain) put it-the difference between the rich and the rest of us is that when the rich get poor, they are still much richer than the rest of us.

You may be interested in the two attached articles.

<<is091898.doc>> <<is091198.doc>>

Regards,

Rosanne Cahn===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D49]MAIL464648371.226 to ASCII,  
The following is a HEX DUMP:

## Equity Research—Americas

Industry: Economic Comment  
September 18, 1998  
EP3291

Rosanne M. Cahn 212/325-4729 [rosanne.cahn@csfb.com](mailto:rosanne.cahn@csfb.com)

## Monetary Ease in a World of Excess Saving



AHNomics

*A small pickup in growth; a big pickup in financial asset prices; a bigger crash later.*

### Consequences of Too Much Saving

We have argued that the world is awash in a sea of excess saving and investment. The ratio of investment (or savings) to GDP for the globe is within its past range, when evidence of excess was not very apparent. Unlike the past, however, market realities are now more critical in determining outcomes. Excess saving first causes a runup in asset values or bad loans to be made. The purpose of the subsequent crack in asset values or loan defaults is to destroy the excess saving, bringing the amount down to what can be supported by fundamentals such as what rate of return can be earned on the investment.<sup>1</sup>

### Rules of the Game

Nations are free to engage in international trade, finance, and intellectual exchange, in which case their standards of living will theoretically rise more rapidly. Or they may isolate themselves from such influences, with all of the consequences thereof. If they choose to participate, they cannot do so by their own rules—they must play by the rules of supply and demand, not command and control.

### Evidence

There is a profusion of prima facie evidence of excess saving. Its regular destruction is the most powerful—the bursting of Japan's bubble economy, the recent Asian financial crisis. Latin America has happily been the borrower of last resort on a repeated basis, destroying the rest of the world's excess capital for the time being. If there were not too much savings around, no private party would have lent money to Russia, a country with no political, legal, or economic infrastructure that could give reasonable assurance of repayment.

There are other forces that exacerbate the influence of excess saving—in particular, financial market deregulation and the inability of central banks to control money or credit supply despite efforts to the contrary.

<sup>1</sup>R. Cahn, "Fair-Weather Capitalists," *eCAHNomics*, September 11, 1998, "United States—Consumers of Last Resort," *eCAHNomics*, August 3, 1998, "Another Farewell to Central Planning," *eCAHNomics*, January 16, 1998.

## Financial Deregulation Turbocharges Capital

A regulated industry has too high prices, too high costs, too high profits and too little innovation. Injecting competition starts to change all that. Illustrative specifics in the financial services industry: prices have been reduced by shrinking spreads between the policy rate and the rates that borrowers pay; costs have been slashed through mergers; innovation is apparent in the array of new alphabet soup products over the past two decades (e.g., CMOs, LBOs, MTNs). More generally, innovation stimulated by competition allocates capital more efficiently—a little goes a long way, i.e., savings becomes turbocharged. The global financial system is beginning to take on characteristics similar to those of the 19th century when it was less regulated.<sup>2,3</sup>

## In Booms, Credit Expansion Extends to Extremes

Kindleberger argues that the monetary authority cannot control the money or credit supply if private markets decide that they are going to thwart the central bank's intent.<sup>2</sup> He focuses on booms, during which private enterprise has circumvented restrictions on money and credit expansion through such items as bills of exchange, call money, and a host of others, limited only by imagination. Multiple expansion of credit in booms sets the stage for the crash that inevitably follows when credit collapses backwards, especially related to the inability of the borrower to pay. Two passages from Kindleberger are worth repeating.

On credit, the novelists perhaps deserve a say:

Beautiful credit! The foundation of modern society. Who shall say this is not the age of mutual trust, of unlimited reliance on human promises? That is a peculiar condition of modern society which enables a whole country to instantly recognize point and meaning to the familiar newspaper anecdote, which puts into the speculator in lands and mines this remark: "I wasn't worth a cent two years ago, and now I owe two million dollars." Samuel L. Clemens [Mark Twain] and Charles Dudley Warner, *The Gilded Age: A Tale of Today* (New York: Harper & Brothers, 1873) [p. 49]

## That Can't Be Stopped by the Monetary Authority

And:

It is hard to know what to conclude from [this discussion of credit and the attempts of the monetary authority to control it]. If central bankers were omniscient and omnipotent, they might be able to use central bank weapons to stabilize the credit system: they could then correct the instability implicit in the infinite expansibility and total collapsibility of credit. . . . [Be mindful of Kindleberger's sarcasm.]

Central banking arose to impose control on the instability of credit. The development of central banking from private banking, which is concerned to make money, is a remarkable achievement. By 1825, the division of labor had been agreed upon: private bankers of London and the provinces financed the boom, the Bank of England financed the crisis. In the United States, which was without a central bank after 1837, the major banks in New York were in a bind between their roles as profit seekers, which made them contributors to the instability of credit, and possessors of country deposits against whose instability they had to guard. The short run warred with the long run, the private good with the public. No one chose the New York banks to act responsibly, and it was not clear that it was to their advantage to do so. The problem is a general one in politics, business, the academy, the family, everywhere. [pp. 64-65]

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<sup>2</sup>C. P. Kindleberger, *Manias, Panics, and Crashes—A History of Financial Crises*, John Wiley & Sons, Inc. (New York: 1996).

<sup>3</sup>A. Greenspan, "International economic and financial system," Testimony Before the Committee on Banking and Financial Services, U.S. House of Representatives, September 16, 1998.

**Structure Creates  
Deficient Demand in  
Japan**

Without structural reform to reduce excess saving and investment, consumer demand will not be much stimulated by monetary policy. Some illustrations are useful. Japan's high savings stems in large part from its low rate of return. (Savings and the rate of return are inversely related when there is a target savings objective such as a certain sum needed for a down payment for a house, children's education, or retirement.) Low interest postal savings accounts, Japan's primary savings vehicle, accumulate low-cost funds for government and private investment. Another savings-booster in Japan is agricultural policy. That keeps too much scarce land in food production, raising the cost of residential land and thus the sum needed for a house down payment. Poorly developed consumer borrowing markets are probably common to many Asian countries, thus requiring advance saving for big-ticket purchases.

**Cyclical Caution Too**

In addition to structural impediments to spending money, the financial crisis has now raised precautionary savings balances.

**Lowering Interest  
Rates Spurs U.S.  
Consumers a Lot . . .**

*What can monetary policy do against that backdrop?* Lower interest rates effectively spur consumer spending in the United States. Well-developed consumer borrowing markets, especially mortgages in the post-deregulation era, support housing and demand for durable goods to put in them. Lower rates would raise stock prices (more of this soon), reducing saving and freeing up more current income for spending on stuff. Canadian consumers would do their share too.

**. . . Europe's Con-  
sumers a Little . . .**

But what about the rest of the world's consumers? European economists used to maintain that lower interest rates stimulated European growth by depreciating the currency, thus lifting exports. That avenue of monetary policy begs the issue. No doubt European consumer spending responds more to lower financing costs and higher asset values than it used to, but not by orders of magnitude. So European consumer spending would not be accelerated by much.

**. . . But Other Con-  
sumers Not at All**

The influence of lower interest rates on consumer spending in the rest of the world is de minimus. In Japan, it is said, lower interest rates *reduce* consumer spending because so many current or soon-to-be pensioners must live off of interest income.

**So Monetary Ease  
Goes into Asset  
Prices**

What would be the end result? Stock and bond prices would be higher everywhere because the reduction in the discount rate raises the prices of long-dated securities. But sales and profits of enterprises would not be much higher. In other words, valuations of productive assets balloon, otherwise known as asset price inflation.

The next stages of this time-honored cycle are well known, though Kindleberger's book will serve as a rigorous refresher course for those wish to become more solidly grounded in the fundamentals and manifestations of manias, panics, and crashes.

**Tax Cuts Are Better**

Tax cuts would be a better short-term way to spur demand, but only in the high-savings countries, not in others. Much of the fiscal ease slated for Japan takes the form of infrastructure spending, not tax cuts, and will probably barely offset future fiscal restraint scheduled in prior legislation.

**Distortions Spread  
Beyond Culprit  
Countries**

Asset price distortions stemming from these mismatched policies seem to show up most in the countries with the worst regulations, but are not confined to those economies because of open international financial borders. Borrowing cheap in Japan and leveraging up to place bets in other countries has already been a source of asset price inflation elsewhere. The price/earnings ratios of Japanese stocks

are much higher than those of U.S. stocks, which, however, were not cheap either before the recent correction. Without fundamental policy reform, the future crash will be bigger in Japan but the next one in the United States will likely be bigger than the 20% that just occurred.

### **And Maybe Nothing Can Be Done**

The markets' transmission of the distortion to other countries will encourage their more sensible policymakers, consumers, and savers to try to impel change in the misguided countries. However, nations are sovereign. Should they choose not to adapt, they cannot be forced. Japan's policy moves over the next year are more critical for the rest of the world's financial markets than is commonly thought.

### **A Diagnosis, Not Yet a Forecast**

The proper road for sensible countries to take is not obvious. Helping out global financial markets through monetary ease risks, though does not assure, a more cyclical outcome later. Should financial market deterioration continue, not lowering rates would impose near-term pain on the U.S. economy and owners of financial assets with no guarantee that the long-run benefit outweighs the cost. Let's hope that our policymakers do not have to make the choice.

---

N.B.: Text written September 18, 1998.

## Equity Research—Americas

Industry: Economic Comment  
September 11, 1998  
EP3217

Rosanne M. Cahn 212/325-4729 [rosanne.cahn@csfb.com](mailto:rosanne.cahn@csfb.com)

## Fair-Weather Capitalists



AHNomics

Financial market participants express a deeply held belief in “market” economic systems. Yet when asset prices decline there is a quick cry, like that of a toddler, for a powerful figure to make it better. As in that analogy, short-term comfort may be forthcoming, but it is of limited use if long-term solutions do not follow.

Market systems, unlike those that are administered by humans, are neutral with respect to who gets rewarded and who gets hurt, embodying no concept of “fair.” Markets are relentless in optimizing allocation of resources, punishing economic agents that get in the way, but handsomely paying those who get it right.

Real markets, even financial ones, are not like the atomistic academic ideal. Unavoidable market imperfections, such as monopolies, cartels, externalities (such as pollution), cause the system to function suboptimally. Financial markets get overwhelmed by emotional waves at tops and bottoms, rendering other analysis, even when accurate, irrelevant.

Even so, this process lacks an arbitrary nature. Financial markets evince a firm faith in Fed Chairman Greenspan’s ability to get it right. That confidence seems solidly based on his record during the prosperous 1990s. Yet this is the same Alan Greenspan who declared on December 5, 1996, some 1200 Dow-Jones points ago (and a bigger 31% on the S&P 500), that the U.S. stock market was deluding itself with irrational exuberance. Smart as he is, he was wrong about that one. No single human being, nor group, can know as much as is embodied in the combined actions of all economic agents.

Carrots and sticks are essential elements of making sure that economic agents do the “right thing.” That is, of course, not a moral statement, but instead refers to firms maximizing profits and individuals maximizing utility. It refers to government policy being stable, and neutral with respect to market forces, e.g., not playing favorites with tax policy. It means that governments should enforce the order of law with respect to property rights, contracts, etc., so that commerce can be conducted without interference from unlawfulness and chaos.

**U.S. Deregulation and  
Market-Opening  
Efforts**

In the past two decades the United States has followed an erratic path away from government control toward market determination. For example, deregulation of transportation industries took place 20 years ago under President Carter, and presidents since then have advanced deregulation. This has had a profound influence in reducing U.S. service-sector costs. Administrations also worked slowly but steadily toward tearing down international trade barriers.

**Demise of  
Communism**

Overseas the moves away from command-and-control systems toward ones that were more market-oriented have been younger in vintage but at times produced spectacular results, notably the demise of Communism.

**Financial Markets  
Force Change. . .**

Financial markets have occasionally forced change that policymakers resisted, such as the breakup of the ERM in 1992.<sup>1</sup> Currency markets compelled Japan to face up to its inconsistent policy of trying to prevent the yen from weakening and keep stock and bond prices stable in the wake of the burst bubble in 1990<sup>2</sup> and to import more in 1994.<sup>3</sup>

**. . . Or Discipline,  
Eventually**

Developing countries that borrow abroad would seem to have an external discipline through the lender. However, that has proved to be weak. Only when borrowing reached extremes did currency markets step in to insist that denial give way to recognition of economic reality. The Latin American crises of 1974 and 1982 were finally precipitated by the currency markets, but long after lending became ludicrously high.

**The Beginning of the  
End of Excess Saving  
and Investment**

More recently, currency markets and then stock markets have insisted that the overexpansion in Asian countries' production come to a halt.<sup>3</sup> Created by policies that were quasi-centrally planned, in such forms as government-business partnerships or governments that picked winning industries to foster, excess saving within the countries (as well as the overflow from Japan) built up capacity to provide more goods than world markets could absorb at reasonable prices, even before Asian demand itself fell away.

The problem with all the solutions that have been tried, including the International Monetary Fund bailout (with conditions attached), is that the appeal to old authoritarian responses will quickly become irrelevant if the underlying problems are not identified and changed.

This raises the question of what the fundamental economic imbalance is.

We have argued that the globe is floating in a sea of excess saving and investment. This conclusion flies in the face of received wisdom, with most analysts whining about too little. The drive of responsible people to provide for the future is how we got into this fix in the first place. The hard-headed, unopinionated, market system is in the process of driving the transition to a better balance between consumption and investment.

**Consumer and  
Producer Both  
Important**

A company cannot earn a reasonable rate of return nor employ workers unless it sells its products or services. If all countries were to pursue export policies similar to some Asian countries, such as Japan, who would buy the output? In classic economics, neither the customer nor the producer merits special treatment.

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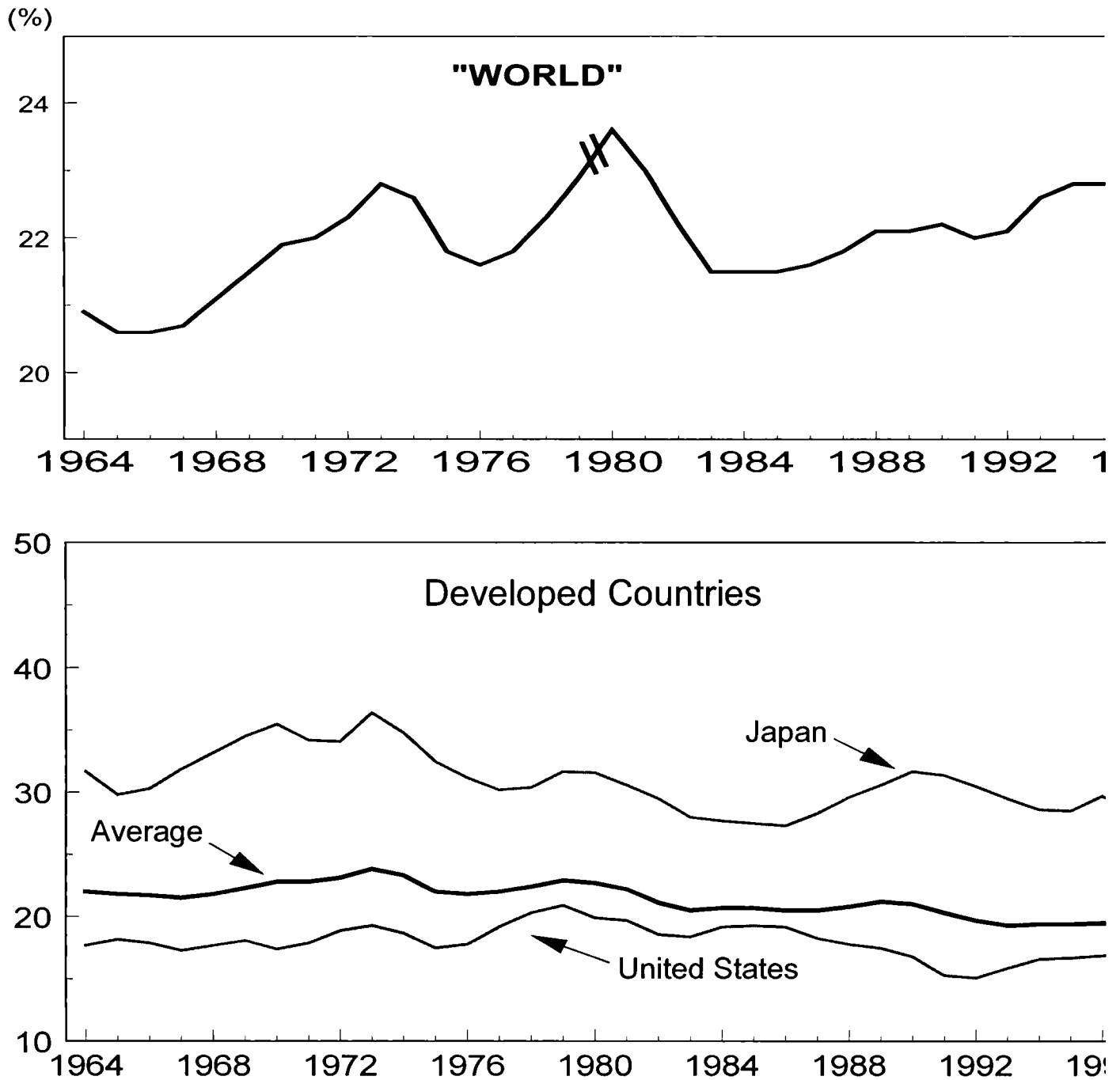
<sup>1</sup>R. Cahn, "The Voter Creates Economic Policy—The Financial Markets Are Their Tools," *Weekly Insights*, September 17, 1992, "The Financial Markets Force Policy—Phase II," *Weekly Insights*, November 25, 1992.

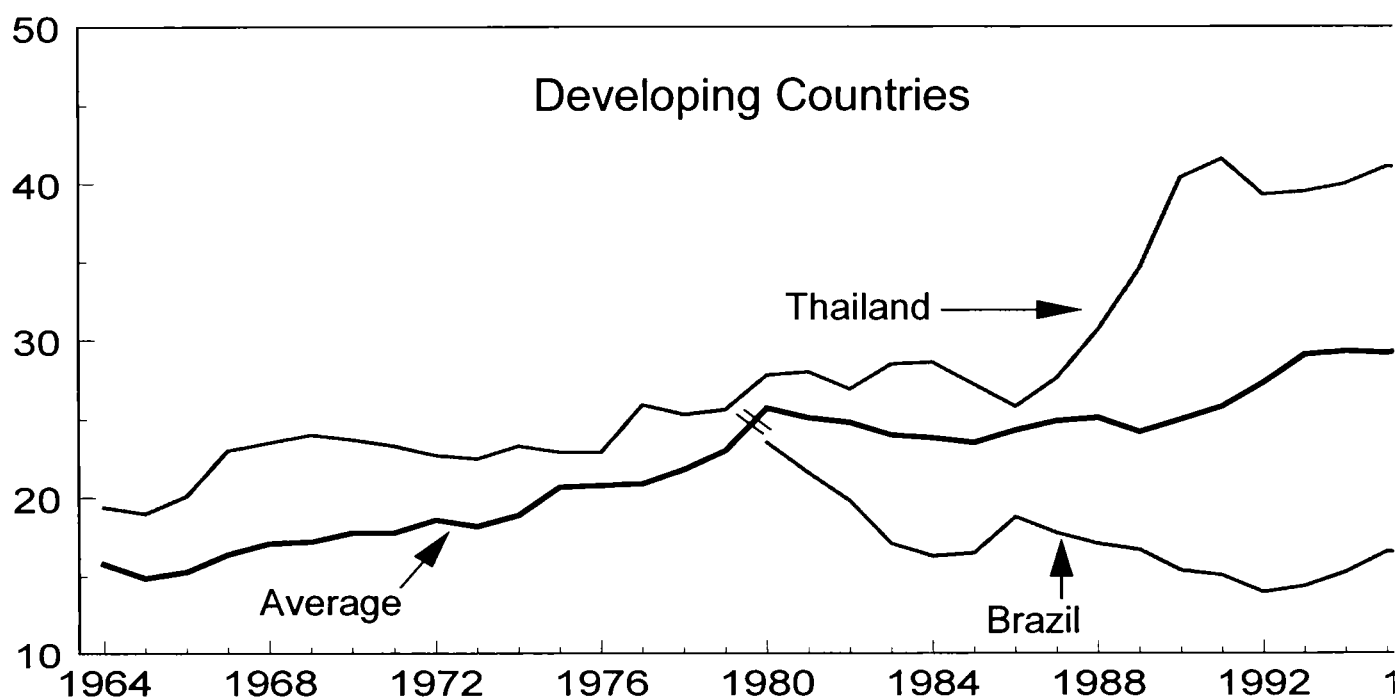
<sup>2</sup>R. Cahn, "The Perils of Planning," *Weekly Insights*, March 2, 1990, "The Yen Crisis," *Weekly Insights*, August 8, 1994

<sup>3</sup>R. Cahn, "Another Farewell to Central Planning," *eCAHNomics*, January 16, 1998.

|                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                              | <p>A market economic system does not produce the maximum amount of anything—saving, investment, market share, productivity, jobs, consumption, wages, steel, toilet paper—but rather the efficient amount. It does so by transmitting price and rate of return signals that tell economic agents how best to orient their efforts to earn the highest labor or investment income.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Data Show that Investment Is Too High. . .</b>                            | <p>The data suggest there is too much saving and investment worldwide. (Savings equals investment, so anything that is true of one is also true of the other.) As shown in Chart 1, the ratio of investment to GDP is about 23% for the world—19% for developed economies and 29% for developing ones. They should have higher investment. Their need for infrastructure and housing is great. Their companies add state-of-the-art capital to lower labor costs, taking market share from higher-labor-cost countries, freeing up expensive labor to produce higher-value-added output. However, intuitively, a 10-percentage-point gap seems too large.</p>                                                                                                                                                                    |
| <b>. . . Especially in Asia. . .</b>                                         | <p>Several Asian tigers have even higher ratios—42% in Malaysia, 36% in Thailand (down from a peak 41%), 35% in Korea, for example. Notice that these are troubled economies. Singapore's ratio was 48% from 1982-84, meaning that nearly half of its annual output was investment, now down to 35%.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>. . . Which Is the Core of Japan's Problems</b>                           | <p>In Japan, investment accounts for 28% of GDP (see chart), nearly as high as the average for developing countries. Its saving is even greater, another 3% of GDP. Japan's too much saving chasing too few productive investments caused its asset price bubble in the 1980s. When the bubble burst, it destroyed the excess saving. More recently, Japan plowed its saving into nearby Asian countries, exacerbating their excess investment situation. Poof. Now that's gone too.</p> <p>By contrast, the United States, France, United Kingdom, and Italy all have ratios of 18% or less. There is no macroeconomic evidence of too little savings or investment in these countries, despite anecdotal dissatisfaction (too few high-price hotel rooms in New York City, poor roads in the United Kingdom, for example).</p> |
| <b>Even U.S. Saving and Investment Might Be Too High</b>                     | <p>First principles suggest that the United States may have too much saving and investment. Both are tax-advantaged (tax-free retirement contributions, deductibility of accelerated depreciation). Generally, anything that benefits from favorable tax treatment is overrepresented in the economy versus what would occur if everything were taxed equally, leaving markets to determine efficient allocations.</p>                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>But Is Low Enough to Help Out</b>                                         | <p>The U.S. savings rate is lower than its investment rate. Now apparent, that was not caused by the government deficit. The United States has been essential both by sopping up other countries' excess savings and also by being their consumer of last resort. Without U.S. borrowers, rates of return earned by savers abroad would have been even lower. Without U.S. customers, there would have been fewer jobs in Japan and other Asian countries. The United States has not suffered either.</p>                                                                                                                                                                                                                                                                                                                        |
| <b>Destruction of Excess Saving Is Market's Way of Teaching Policymakers</b> | <p>Market economic systems, when working properly, tend to be self-correcting, usually by causing pain, essential in the learning process. One way to view the Asian crisis is that financial markets are telling those economies that they have too much saving and investment. In the case of the smaller, developing economies, the financial markets are forcing them to adjust quickly to more sensible policies that will benefit their own consumers, workers, and investors sooner. Japan has enough internal resources to resist, not in the interest of its economy, but perhaps favoring certain powerful parties.</p>                                                                                                                                                                                                |

Chart 1  
Gross Fixed Capital Formation as a Percent of GDP





"World" Includes United States, Canada, Mexico, Germany, France, Italy, United Kingdom, Spain, India, Indonesia, Korea, Thailand, Malaysia, Philippines, Singapore, and Australia before 1980; thereafter, China, Brazil, and Argentina are included. This accounts for about 70% of world GDP before 1980 and 85% thereafter.

Gross fixed capital formation includes government investment, residential investment, and business investment.

Source: International Monetary Fund.

The consequences of too much global savings and investment are improvident lending (no matter what strictures are imposed by authorities) and successive runups in asset prices, followed by crashes, the purpose of which is to destroy the excess saving. Downward pressure on prices of goods produced by too much investment will hold the world in disinflation.

**Powers-that-Be  
Resist Change**

Policymakers chafe under the yoke of market systems. They are reluctant to yield power. They wish to replace complex systems with simple solutions. Thus some of the more authoritarian regimes, such as Malaysia and Hong Kong, impose capital controls or try to manipulate markets. Long-standing control advocates, such as Jack Kemp, revive in popularity. Erstwhile free-market defenders such as Rudiger Dornbusch and Paul Krugman of M.I.T. cave in to the uncertainty of the moment.

**Less Control, Not  
More, Is Solution**

Exchange-rate and other capital controls do not solve fundamental structural problems, only mask them for a period. Unless economies are to return to tighter and tighter controls, these old methods will soon enough be defeated by markets. Rates of return on financial and real assets will continue to be unrewarding (and often negative) for those who insist upon overemphasizing saving and investment and underemphasizing consumption. That's the bad news.

**Interest Rate Cuts  
Do Not Address  
the Problem**

Interest rate cuts, by the Fed in isolation or coordinated among major economies, could provide only temporary relief. They would not be responsive to the core of the problem. They would also establish a terrible moral hazard (reward for bad behavior) that countries need not mend their counterproductive policy ways because central banks are on the ready to bail them out (without extracting the meager concessions wrought by the I.M.F.).

**Look Forward to  
Market Forces  
Winning**

The good news is that if our analysis were accurate, it would present a wonderful future for standards of living around the globe. It would mean that everyone could consume more now and still have plenty left over to provide for the future. Economic leaders should cede influence so we can get to the better outcome sooner.

---

N.B.: Text written September 11, 1998.

## Americas

Eleven Madison Avenue  
New York, NY 10010, U.S.A.  
1 212 325 2000

|              |                |               |                |
|--------------|----------------|---------------|----------------|
| Atlanta      | 1 404 656 9500 | Pasadena      | 1 626 395 5100 |
| Boston       | 1 617 556 5500 | Philadelphia  | 1 215 851 1000 |
| Buenos Aires | 1 541 394 3100 | Portland, ME  | 1 207 780 6210 |
| Chicago      | 1 312 750 3000 | San Francisco | 1 415 765 7000 |
| Houston      | 1 713 220 6700 | São Paulo     | 55 11 822 4862 |
| Mexico City  | 1 525 202 6000 | Toronto       | 1 416 947 2600 |

## Europe

One Cabot Square  
London E14 4QJ, England  
44 171 888 8888

|           |                |        |                 |
|-----------|----------------|--------|-----------------|
| Amsterdam | 31 20 575 4444 | Paris  | 33 1 40 76 8888 |
| Budapest  | 36 1 202 2188  | Prague | 42 2 248 10937  |
| Frankfurt | 49 69 75380    | Vienna | 43 1 512 3023   |
| Geneva    | 41 22 707 0130 | Warsaw | 48 22 695 0050  |
| Madrid    | 34 1 532 0303  | Zug    | 41 41 726 1020  |
| Milan     | 39 2 7702 1    | Zurich | 41 1 335 7711   |
| Moscow    | 7 501 967 8200 |        |                 |

## Asia Pacific

Three Exchange Square  
8 Connaught Place  
Central, Hong Kong  
852 2101 6000

|           |                 |            |                 |
|-----------|-----------------|------------|-----------------|
| Auckland  | 64 9 302 5500   | Shanghai   | 86 21 6219 0808 |
| Beijing   | 86 10 6410 6611 | Singapore  | 65 538 6322     |
| Melbourne | 61 3 9 280 1666 | Sydney     | 61 2 9394 4400  |
| Mumbai    | 91 22 284 6888  | Tokyo      | 81 3 5404 9000  |
| Osaka     | 81 6 243 0789   | Wellington | 64 4 474 4400   |
| Seoul     | 82 2 3707 3700  |            |                 |

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 1-OCT-1998 15:09:39.00

SUBJECT: Forwarded request from Chris Varvares (MA)

TO: Douglas W. Elmendorf ( CN=Douglas W. Elmendorf/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

It looks like they liked the talk--thanks again for all of the help. I have put it up on our WEB site.

----- Forwarded by Janet L. Yellen/CEA/EOP on 10/01/98  
03:08 PM -----

Steven N. Braun                      10/01/98 09:35:10 AM

Record Type:    Record

To:    Janet L. Yellen/CEA/EOP, Alice H. Williams/CEA/EOP

cc:

Subject:        Forwarded request from Chris Varvares (MA)

----- Forwarded by Steven N. Braun/CEA/EOP on 10/01/98  
09:33 AM -----

varvares @ macroadvisers.com  
09/30/98 11:18:00 PM

Record Type: Record

To: Steven N. Braun

cc:

Subject: Janet Yellen's Presentation to the MA Policy Seminar

Steve:

Greetings. I looked on the CEA web site for the text of Janet Yellen's address to our Policy Seminar. Is it possible to get a copy?

Should I just call Alice Williams and see if she'll fax a copy?

Incidentally, it was the best presentation of the issues re SS reform I've heard. No diatribe, just the facts, trade-offs, and unknowns. Very Good!

Thanks

Chris

===== ATTACHMENT 1 =====  
ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

RFC-822-headers:

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id <01J2FPEDA4HS00E1EP@PMDF.EOP.GOV> for braun\_s@a1.eop.gov; Wed,  
30 Sep 1998 23:51:15 EDT

Received: from Storm.EOP.GOV by PMDF.EOP.GOV (PMDF V5.1-9 #29131)  
with ESMTP id <01J2FPEBY60W00DP9B@PMDF.EOP.GOV> for braun\_s@a1.eop.gov; Wed,  
30 Sep 1998 23:51:13 -0400 (EDT)

Received: from thor.inlink.com ([206.196.96.1])  
by STORM.EOP.GOV (PMDF V5.1-12 #29131)  
with ESMTP id <01J2FPDMVDUU001KCZ@STORM.EOP.GOV> for braun\_s@a1.eop.gov; Wed,  
30 Sep 1998 23:50:39 -0400 (EDT)

Received: from Default (iits02198.inlink.com [209.135.141.198])  
by thor.inlink.com (8.9.1a/8.9.1) with SMTP id WAA18310 for  
<braun\_s@a1.eop.gov>; Wed, 30 Sep 1998 22:18:40 -0500

X-Sender: varvares@mail.inlink.com (Unverified)

X-Mailer: Windows Eudora Version 1.4.3

===== END ATTACHMENT 1 =====

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Douglas W. Elmendorf ( CN=Douglas W. Elmendorf/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 1-OCT-1998 08:50:08.00

SUBJECT: hedge fund hearing

TO: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )  
READ:UNKNOWN

CC: Douglas\_W.\_Elmendorf@oa.eop.gov ( Douglas\_W.\_Elmendorf@oa.eop.gov [ UNKNOWN ] )  
READ:UNKNOWN

TEXT:

I've asked Ryan to go up to the Hill and report back on the Greenspan/McDonough/Born testimonies this AM. Since we're writing a WEB piece on the topic, I thought we shouldn't wait for tomorrow's paper to see what happened.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 1-OCT-1998 18:55:23.00

SUBJECT: testimony

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D47]MAIL48260447P.226 to ASCII,  
The following is a HEX DUMP:

**TESTIMONY OF DR. JANET YELLEN  
CHAIR, COUNCIL OF ECONOMIC ADVISERS  
BEFORE THE  
U.S. HOUSE OF REPRESENTATIVES  
COMMERCE SUBCOMMITTEE ON ENERGY AND POWER**

**TUESDAY OCTOBER 6, 1998**

Thank you, Mr. Chairman. I appreciate having this opportunity to discuss with you the economics of climate change and the Administration's efforts to address this significant environmental challenge. As you know, I have testified on this topic before this Committee on two prior occasions. In my first appearance, prior to the Kyoto negotiations, I emphasized that if flexible, market-based mechanisms are effectively used, the costs of cutting greenhouse gas emissions would be significantly reduced. Elaborating on this point, I stated in March of this year that, in the Administration's view, the costs of achieving our Kyoto target would be modest if we can succeed in implementing international trading, joint implementation, and the Clean Development Mechanism in an efficient manner and we achieve meaningful developing country participation. A report released by the Administration in July, entitled "The Kyoto Protocol and the President's Policies to Address Climate Change: Administration Economic Analysis" elaborates the assumptions and analysis underlying this conclusion. In addition, the Stanford Energy Modeling Forum has been coordinating an economic modeling exercise of the Kyoto agreement, and the participating modelers have made available some of their preliminary results. Today, I will provide a brief summary of the Administration's Economic Analysis and review several of the key findings of the Energy Modeling Forum effort.

**Costs of Climate Change**

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of greenhouse gases have reached levels well above those of preindustrial times. If growth in global emissions continues unabated, the atmospheric concentration of carbon dioxide (CO<sub>2</sub>) will likely double relative to its preindustrial level by midway through the next century and continue to rise thereafter. As a result of the increased concentration of CO<sub>2</sub>, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. Potential consequences associated with this shift in climate include a rise in sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity. Further discussion of the costs of climate change is contained in the Administration Economic Analysis.<sup>1</sup>

<sup>1</sup> Please refer to the attached paper copy or

## **The Kyoto Protocol and the Buenos Aires Conference of the Parties**

Previously, Undersecretary Eizenstat and I appeared before this Committee to discuss the Kyoto Protocol and the Administration's efforts to address the risks of climate change. In my testimony, I described the many important flexibility mechanisms in the Kyoto Protocol and explained how they would allow countries to achieve cost-effectively the emissions targets established in this agreement. These mechanisms, which permit what we have termed "when", "what", and "where" flexibility in meeting the Kyoto emissions targets, are described in detail in the Administration Economic Analysis. Since securing international emissions trading, the Clean Development Mechanism, and joint implementation last year in Kyoto, the Administration has worked in bilateral and multilateral arenas to promote understanding of these mechanisms and to develop rules that will promote their efficient operation. This work will continue in the talks in Buenos Aires and beyond. While I will defer to the Department of State for a discussion of the upcoming negotiations, I will reiterate that efficient implementation of these flexibility mechanisms is critical to reducing the costs of achieving the targets established in the Kyoto Protocol.

### **Costs of Action**

In assessing the economic effects of the Kyoto Protocol, the Administration has drawn on the insights of a wide range of models and analysis. Examples include models of the energy sector and economy over the next 25 years, such as the Stanford Energy Modeling Forum, the Intergovernmental Panel of Climate Change's review of the economic and social dimensions of climate change, the work of the OECD on the economic dimensions and policy responses to global warming, and the Administration's staff-level interagency analysis. In addition, the Administration used other tools, such as a meta-analysis, basic economic reasoning, overviews of the domestic and international energy sectors, simple statistics regarding energy efficiency and greenhouse gas emissions, and economic indicators from World Bank, International Energy Agency, and Energy Information Administration databases.

Assuming that effective mechanisms for international trading, joint implementation, and the Clean Development Mechanism are established, and assuming also that the United States achieves meaningful developing country participation, the Administration's overall assessment is that the economic cost to the United States in aggregate and to typical households of attaining the targets and timetables specified in the Kyoto Protocol will be modest. This conclusion is not entirely dependent upon, but is fully consistent with, formal model results. The Administration continues to believe that there are limitations to relying on any single model to assess the economic impact of the Kyoto Protocol. However, model results can further inform and

<http://www.whitehouse.gov/WH/New/html/kyoto.pdf> for a PDF version of this document.

improve the understanding of the effects of climate change policy. To complement the economic analysis of the Administration's policy to address climate change, we have conducted an illustrative assessment with a modified version of the Second Generation Model. The results from the SGM substantiate the conclusion that the economic effects of an efficient, effective, and global policy to address the risks of climate change will be modest.

An assessment using the SGM model that accounts for effective trading and developing country participation yields permit price estimates ranging between \$14/ton and \$23/ton, and direct resource costs between \$7 billion and \$12 billion/year. The range reflects uncertainty about the extent of Annex I participation in international trading.

Under the assumptions of the Administration's analysis, permit prices in the range of \$14/ton to \$23/ton translate into energy price increases at the household level between 3 and 5%.

Under these permit prices, fuel oil prices would increase about 5 to 9 percent, natural gas prices about 3 to 5 percent, gasoline prices about 3 to 4 percent (or around 4 to 6 cents per gallon), and electricity prices about 3 to 4 percent. This increase in energy prices at the household level would raise the average household's energy bill in ten years by between \$70 and \$110 per year, although such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity restructuring. By 2008-2012, the anticipated 10 percent decline in electricity prices from the restructuring that is part of our climate change agenda is projected to lead to expenditure reductions of about \$90 per year for the average household.

The illustrative modeling analysis does not account for several key components of the Kyoto Protocol and the Administration's policies to reduce greenhouse gas emissions. These include the benefits of reducing net emissions through carbon sinks, the Administration's electricity restructuring proposal, the Administration's Climate Change Technology Initiative, the Administration's sectoral consultations to encourage and support voluntary efforts by U.S. industry to undertake emissions reductions, including the provision of credit for early action, and the Administration's efforts to reduce federal energy use.

Since I last testified before this Committee, the Administration has released its proposed electricity restructuring legislation and the supporting analysis of this proposal. The Administration's proposed Comprehensive Electricity Competition Act (CECA) is estimated to reduce greenhouse gas emissions by about 25 to 40 million metric tons of carbon equivalent per year by 2010. Further, the electricity restructuring proposal provides potential cost-savings in four areas: dispatch efficiency, improved capital utilization, savings in capital additions and cost reductions in fuel procurement, non-fuel operation and maintenance expenses, and administrative and general expenses. These four categories of savings are likely to reach or exceed \$20 billion

annually. The Department of Energy's CECA supporting analysis documents<sup>2</sup> contain further discussion of the Administration's electricity restructuring proposal.

### **Recent Research on the Economics of Climate Change**

Since I last appeared before this Committee, many economists have conducted and made available their analyses of the Kyoto Protocol. I noted in both of my previous appearances that there are limitations to relying on one or a small set of models and that we were eager to see assessments of the Kyoto Protocol by other models. In March, I indicated that the Energy Modeling Forum (EMF) based at Stanford University, a long-running model comparison exercise involving many of the leading climate and energy models, would conduct full scale analyses of the Kyoto Protocol. We have now received a compilation of the preliminary analyses by the participating modeling teams.

#### *EMF Kyoto Analyses*

The Energy Modeling Forum comparison exercise of the Kyoto Protocol has included ten modeling teams from the United States, Europe, and Asia. In evaluating the Kyoto Protocol, all of the participating teams used economic models that incorporate the potential for international trading in greenhouse gas permits. By explicitly incorporating international trading, these models can evaluate the opportunities for cost-savings through trading among Annex I nations and among Annex I and developing countries were they to adopt emissions targets. Since the Kyoto Protocol enables all countries with emissions targets to trade emissions allowances among other countries with targets, these models are well-suited to assess the economic implications of the international trading component of the agreement.

While the EMF models can assess international trading, there are several other flexibility mechanisms of the Kyoto Protocol that they cannot, at present, readily assess. For example, these models did not incorporate the effects of sinks. While several modelers did assess the economic costs of achieving the Kyoto targets with "off-line" assumptions about sink activity, none incorporated an integrated energy-land use model. Further, most of the modelers did not evaluate opportunities to reduce costs by trading across greenhouse gases. These models are primarily energy models and are focused on the economics of reducing carbon emissions from fossil fuel combustion. Again, some modelers analyzed the Protocol by making some "off-line" assumptions about the potential reductions in non-carbon dioxide greenhouse gases, but none employed a model with cost curves for these gases. Finally, it should be noted that these models did not include opportunities for emissions reduction through Administration proposals, such as

<sup>2</sup> Please refer to the attached paper copy or <http://www.doe.gov/ceca/ceca.htm> for the PDF version of the supporting analysis.

electricity restructuring or the Climate Change Technology Initiative, that could lower greenhouse gas permit prices.

The EMF results provide very useful context for the Administration's economic analysis. First, the illustrative model used by the Administration, the Second Generation Model of Battelle Laboratory, tends to fall in the middle of the range of this set of models in terms of U.S. permit prices.<sup>3</sup> For example, under Annex I trading SGM generates a permit price which is at the median of this set of models. Under full global trading, the SGM permit price is just below the median permit price. Second, the EMF exercise found that the reduction in permit price as trading expands from no trading to Annex I trading to full global trading is robust. On average, the EMF models found that Annex I trading would cut the U.S. permit price by 52% relative to a no trading scenario. Of these models, one estimated a 72% reduction in the permit price under Annex I trading. In full global trading, the permit price would be, on average, 78% lower than the no trading price. Several models estimated permit price reductions of about 90%.

#### *Analyses of Trading Constraints*

In addition to the modeling of various efficient international trading scenarios, several EMF modeling teams have considered the impact of constraints on the opportunity to buy or sell emissions allowances in an international market. These scenarios are intended to reflect potential quantifications of the term "supplemental" in the international trading article of the Kyoto Protocol (Article 17). While the United States is unambiguously opposed to trading restrictions, several parties to the agreement have indicated support for some form of a trading constraint. Trading restrictions would generate no benefit for the global climate while they could significantly increase the costs of achieving the Kyoto targets.

Before describing the economic costs of trading constraints, I would like to explain why such constraints yield no climate benefits. Regardless of where an emission reduction occurs, it has the same effect on total emissions and the same effect on the climate. A ton reduced in New York generates the same climate benefit as a ton reduced in Berlin. In proposing trading constraints, some have focused on countries that will likely have "hot air" during the commitment period. This "hot air" refers to countries, such as Russia, that will have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. If trading constraints are established that restrict the ability of Russia to sell hot air (or restrict the opportunity for other Annex I

<sup>3</sup> Please note that the version of SGM used in EMF differs from the analysis conducted by the Administration because the EMF version does not include cost curves for non-carbon dioxide greenhouse gases used by the Administration. Since efficient trading across gases would lower costs and permit prices, the EMF version of SGM yields slightly higher permit prices than the Administration version.

countries to buy hot air), then emissions during the first commitment period would be lower than in the absence of such constraints. However, Russia would simply bank its hot air and use these emissions allowances in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is relevant in terms of changes in the global climate.

To provide a sense of the economic implications of trading constraints, I would like to share with you two examples from work done by EMF modeling teams. First, consider a trading constraint that mandates that at least two-thirds of the emissions reductions necessary for a country to achieve its Kyoto target must occur through domestic actions. Evaluating this trading constraint with the EPPA model based at the Massachusetts Institute of Technology, the permit price for the United States is almost four times higher with the constraint than under an unconstrained global trading system. It is important to note that the effects of this constraint are even more pronounced for the European Union and for Japan. The permit price for the EU would be more than five times higher than the unconstrained global trading permit price, and the Japanese permit price would be thirteen times higher. As these results indicate, the trading constraint would result in each country experiencing a different marginal cost of abatement, and there would be no common permit price for a ton of carbon equivalent. Since the constraint restricts opportunities for countries like the United States, Japan, and members of the EU to buy emissions allowances, the competitive price for emissions allowances from countries like Russia would fall below the unconstrained level.

Second, consider a trading constraint that mandates that acquisitions of permits through international trading could not exceed 10% of a country's emissions allocation. For example, the U.S. target is approximately 1.5 billion tons of carbon equivalent on an annualized basis. Under this trading constraint, the United States, or private firms in the United States, could not purchase more than 150 million tons on an annual basis from other countries. Assessing this trading constraint with the Second Generation Model based at Battelle Laboratory, the permit price for the United States would more than triple relative to the unconstrained global trading permit price. For the EU, the permit price would nearly double, and for Japan, the permit price would be eleven times as high as the unconstrained global price.

While trading constraints increase greenhouse gas permit prices (and subsequently, energy prices) in the United States, the European Union, and Japan, they also reduce the gains from trade by the countries likely to be sellers of emissions allowances. For example, in a world where large developing countries adopt emissions growth targets and participate in international trading, Russia, China, and India would sell fewer emissions allowances at lower international permit prices under such trading constraints than in an unconstrained global trading environment.

### *Developing Country Participation*

While no non-Annex I country has yet adopted a binding emissions target, economic and environmental benefits would accrue if some developing countries do so. For example, a target set slightly below the business as usual emissions level for the commitment period would generate climate benefits by reducing global emissions below what they would otherwise have been. In addition the participation of the country in a global trading system would produce economic benefits or "gains from trade" for both the developing country and its trading partners. Emissions trading by developing countries would occur if they chose to undertake emissions reductions above and beyond their commitments -- reductions that would generate trading extra income for them as long as their marginal abatement cost is below the world trading price for greenhouse gas permits. Many of the EMF models reveal that, for large developing countries, like China, such excess reductions would indeed be profitable, so that these countries would export permits and gain from trade. Benefits from such trading would also accrue to Annex I countries. Annex I countries (and private firms in these countries), who would purchase these emissions allowances in the world market, would achieve their targets at lower cost than without the participation of the developing countries. However, it should be noted that the more stringent the target for the developing country, the lower the gains from trade both for that country and for Annex I countries such as the United States. Indeed, an extremely stringent target could conceivably make the developing country a net importer of emissions allowances, and raise the international trading price for a greenhouse gas permit. Still, these models illustrate the potential to create targets that simultaneously make the environment, the developing country, and Annex I countries all better off.

### **Conclusion**

The Administration's overall conclusion is that the economic impact of the Protocol will be modest under the conditions we have identified in our economic analysis. The purpose of this testimony has been to summarize the analysis we have presented in the Administration Economic Analysis on climate change and to provide a brief update of recent modeling efforts outside of the government.

I look forward to continuing to work with members of this Committee, as well as with other interested parties, in further analyzing the Kyoto Protocol and evaluating the net effects of reducing greenhouse gas emissions. It is my hope that economic analysis will continue to play a key role in designing policies in this area.

I welcome your questions.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Ryan D. Edwards ( CN=Ryan D. Edwards/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 1-OCT-1998 15:46:20.00

SUBJECT: Re: FW: today's article

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Douglas W. Elmendorf ( CN=Douglas W. Elmendorf/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Hi Janet and Doug,

I'm sorry; I'm a bit confused. (Who's Roseanne Cahn?) Would you like me to speak to the issues she raised, or was that purely for informational purposes? Her impressions were pretty much the opposite from what I walked away with.

Best,

-Ryan

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 2-OCT-1998 00:12:51.00

SUBJECT: Qs and As

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Janet,

Here are some Qs and As on the documents. Also, John Weyant called me tonight. I had faxed him a draft of the testimony because I wanted to be sure that he was comfortable with how we are using the EMF results -- he is very satisfied with the approach we have taken. I'll be back Sunday afternoon.

Joe

===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D14]MAIL46976447S.226 to ASCII,  
The following is a HEX DUMP:

- Q: In your 1/23/98 memo on the costs and benefits of a program to address global climate change you note that “optimistic assumptions” about international trading are necessary to “bring costs down a lot.” Could you please explain what these optimistic assumptions are, and why you consider them to be optimistic?
- A: The optimistic assumptions refer to the assessment of Kyoto with key developing countries adopting growth emissions targets and participating in international trading. We consider these assumptions optimistic because, to date, these countries have not taken on targets.
- Q: You note that even with optimistic assumptions about trading, costs are still greater than benefits. Why should the President’s economic adviser support a policy where costs outweigh benefits?
- A: It is important to recognize that the non-climate benefits do not outweigh the costs. We should view what we have done in the Kyoto Protocol as an insurance policy against the risks of climate change. So long as we implement the Protocol efficiently and globally, the costs will be modest, and the premium for this insurance will be reasonable.
- Q: It appears that you have used electricity restructuring to mask the costs of climate change. Wouldn’t you consider it good public policy to pass a winner of a policy, like electricity restructuring, and reject a loser of a policy like climate change?
- A: While our efforts on climate change are still a work in progress, I do not consider the Administration’s position on climate change a “loser”. It is important to address both the issue of electricity deregulation and the issue of climate change. It is also important to recognize how the average household will be ten years out because of the kinds of policies we are considering today.
- Q: In your analysis, you have cited that electricity restructuring will offset the costs of climate change. However, we have heard recently from Carol Browner that consumers shouldn’t worry about the higher electricity bills associated with the NOx trading program because of the Administration’s electricity restructuring proposal. How can the Administration offset the costs of both these policies with the same proposal? Will the Administration use electricity restructuring as rhetoric to mask over the costs of all future burdensome environmental regulations?
- A: HELP.

- Q: Why is it difficult to quantify or monetize the benefits of reducing the risks of climate change? You have cited several economists who managed to do it.
- A: The economists that we have cited have assumed in their analyses long-term emissions paths for the planet. However, since the Kyoto Protocol only affects one 5-year period, and, as a work in progress, only Annex I countries, it is impossible to trace out an emissions path beyond Kyoto. Further, there are substantial difficulties dealing with the uncertainties surrounding the appropriate discount rate, danger of catastrophic events, and appropriate risk aversion.
- Q: According to your own memo, you are using the lowest cost model in the modeling community. Isn't that true?
- A: That statement refers to how SGM ranked in the EMF-14 exercise which assessed the present discounted value of foregone consumption resulting from several long-term global emissions paths (WRE, WGI). More relevant to our present purposes, the most recent EMF exercise suggests that SGM falls roughly in the middle of the field of models used to evaluate Kyoto.
- Q: Are China, India, Korea, Mexico key developing countries?
- A: For purposes of the illustrative analysis, we assumed that these countries were key. This does not reflect any official Administration position on these countries. Frankly, these 4 countries were selected as a matter of convenience -- in the SGM model, they are distinct modeling regions, and so it is easy to discern their effects in participating in trading. It would be virtually impossible to assess another developing country, like Brazil or Argentina, because they are grouped with all other developing countries into the "rest of the world" region.
- Q: Are developing country targets set at 2010 BAU emissions level meaningful participation?
- A: This emissions level was used simply for illustrative reasons. The Administration does not have a position what the appropriate target should be for a developing country that elects to adopt a target. A target should appropriately reflect that country's own circumstances. In most of the EMF exercises, it is assumed that developing countries take on targets set at BAU in 2010.

- Q: Why is it we don't understand sinks enough to include them in an economic analysis, but we were able to agree to several provisions about them in Kyoto?
- A: We recognize that making the Kyoto Protocol as comprehensive as possible in terms of emissions and sinks was critical to lowering the costs of compliance ("what" flexibility). We considered it important to lock in opportunities for sinks to help reduce net emissions. While we did not include sinks in the illustrative analysis, we did incorporate them in our assessment that the costs would be modest.
- Q: In your 1/23/98 memo, you described the 10/97 Administration position as costing \$148/ton -- is this modest?
- A: First, I would like to explain that the permit price you have quoted is for the 10/97 position assuming no where flexibility. The cost is surely modest when one accounts for cost-saving opportunities in other countries.
- Q: Why don't any of the cost estimates in these memos match the numbers in your testimony?
- A: The model outputs are in 1992 dollars. For my testimony and the Administration Economic Analysis, we changed the outputs to 1997 dollars.
- Q: Trading with "key LDCs" has the same cost as full global trading. Are all LDCs key?
- A: All LDCs are not key. This result reflects the fact that one only needs a couple of large developing countries (e.g., China, India, and Mexico) to significantly reduce our costs and to capture most of the cost-savings available in non-Annex I countries.
- Q: If sinks can lower costs by a factor of 4 (as in the case of Annex I trading going from no sinks to full sinks), then why don't we use them?
- A: The sink numbers used in these analyses were very rough and do not necessarily correspond to the definition of sinks in the Kyoto Protocol. The Administration will be working in the international community to develop rules and interpretations regarding sinks. (Defer to State Dept.)

Q: Why didn't you use the technology optimism case in your testimony and your report?

A: We used a conservative technology assumption (SGM default, calibrated to EIA's Annual Energy Outlook) for the same reason we use conservative economic assumptions in our budget forecasts. In the end, we found it more reasonable to provide an illustrative analysis with a conservative assumption about technology.

Q: Why are the air quality benefits in these documents smaller than what is the Administration's Economic Analysis?

A: These documents reflect some of the first work we did on ancillary benefits. Working with EPA, subsequent analyses using methodologies from the NAAQS Regulatory Impact Analysis from last year yielded a larger range of results. We still claim, conservatively, that these benefits would offset the costs of a policy with permit prices of \$14/ton to \$23/ton by one-quarter.

Q: You have apparently done some analysis on the ancillary benefits associated with traffic congestion and accidents. Why is there no discussion of these in the Administration Economic Analysis?

A: HELP (Todd).

Q: Why would congestion fall under your climate policy? Why would traffic accidents fall under your policy?

A: As our analysis indicates, gasoline prices would climb by roughly 5 cents per gallon. We estimated that this would reduce driving slightly, thereby decreasing the number of cars on the road that lead to congestion, and providing fewer opportunities for accidents.

Q: According to your 1/13/98 memo, the U.S. has to undertake more reductions than all other Annex I countries combined. Does this seem fair to you? It appears like all other countries got a better deal than us.

A: In a world with international trading, all countries participating in a trading system would bear the same marginal cost. Thus, all countries would experience the same effect of the Kyoto Protocol on their energy prices. The number of emissions a country would have to reduce relative to business as usual is not relevant in this case. Further, an assessment of "fairness" should also incorporate how expensive it is to make one's reductions, and many countries face higher abatement costs than we do.

Q: How is this Kyoto Protocol going to help the environment if you plan on buying more than 425 MMTCE of hot air every year from Russia and eastern Europe?

A: The Kyoto Protocol established a target that Annex I countries reduce their emissions to 1990 - 5.2%. This is the goal of Kyoto. To make this goal accessible and cost-effective, Kyoto included numerous important flexibility mechanisms. While making use of these mechanisms may transfer some of this so-called hot air to the U.S., Japan, the EU and others, the goal of Kyoto will still be attained.

Q: Isn't it true that under Annex I trading, according to your analysis, we would be sending \$20 billion to Russia and Eastern Europe?

A: Our analysis is predicated on the assumption that the private sector will seek out and find the least-cost abatement opportunities in all participating countries. Our analysis may yield a result similar to this, however, it is not our policy to secure only Annex I trading. Note that we have the CDM, as well as sinks, and our domestic programs (electricity restructuring, CCTI, industry consultations) that will lower the permit price and result in lower international transfers from our private sector.

Q: Could you explain how some scenarios have permit prices of \$0?

A: With some of the larger sinks assumptions we used, the supply of emissions permits at zero cost would exceed the demand established by the Kyoto targets. Again, these sink assumptions are not necessarily consistent with the sinks provision in the protocol.

Q: Did you incorporate banking in your analyses? Why not?

A: We did not include banking. To include banking would require making assumptions about targets in the second and subsequent commitment periods. The Administration does not have a position on these targets, and we did not consider it appropriate to make arbitrary assumptions about these targets.

Q: In your 1/13/98 memo you estimated 13-33 MMTCE of reductions from electricity restructuring, but now the Administration claims to get 25-40 MMTCE. Why the change?

A: The early estimate reflects an assessment of the electricity restructuring proposal while it was still undergoing internal deliberations. The final estimate for the proposal is 25-40 MMTCE. For an explanation of the difference, I recommend that you contact DOE.

Q: Isn't it true in your analysis that if we don't get trading, gas will increase 41 cents/gallon?

A: We got trading. The costs of hypothetical policies that do not reflect what we secured in Kyoto, that do not reflect the Administration's position on developing countries, and do not include our CCTI, electricity restructuring, industry consultations, etc. can easily be high. That's why they are not the Administration policy.

Q: Isn't it true that if developing countries do not participate, the costs will more than double?

A: Our analysis does indicate that there are a lot of low-cost opportunities in developing countries. That is why we have been discussing the opportunities for these countries to attract clean energy investment through international trading and the CDM. We think that with an appropriately designed target for developing countries, our costs will be lower, they will gain from trade, and global greenhouse gas emissions will be lower.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 2-OCT-1998 19:03:14.00

SUBJECT: comments on the testimony

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Quindi C. Franco ( CN=Quindi C. Franco/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

CC: Jeffrey A. Frankel ( CN=Jeffrey A. Frankel/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

We have received comments back from Bob Tuccillo. Only DOE and EPA made comments. DOE has only one substantive comment, which is to mention in the conclusions that differences in cost estimates that have been reported arise largely from different questions being posed. EPA makes a dozen comments none of which are major and the vast majority of which are simple editorial suggestions.

I plan on being in on Sunday and will coordinate with Joe on making the changes. In case you want to see the comments and I am not here, the Fax from Bob is on my desk. Steve

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 2-OCT-1998 10:10:51.00

SUBJECT: unemployment statement

TO: Steven N. Braun ( CN=Steven N. Braun/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Sandra F. Daigle ( CN=Sandra F. Daigle/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

Attached is a draft of a statement. Would you please give all changes to Sandy?

She will format it and get it ready to send out.

Thanks.===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D54]MAIL42330647U.226 to ASCII,

The following is a HEX DUMP:

**FOR IMMEDIATE RELEASE**  
**FRIDAY, October 2, 1998**

**CONTACT: MICHELE JOLIN**  
**CHIEF OF STAFF**  
**(202) 395-5084**

**STATEMENT OF JANET L. YELLEN**  
**CHAIR, COUNCIL OF ECONOMIC ADVISERS**

The unemployment rate for September was 4.6 percent, up slightly after 3 months at 4.5 percent. The unemployment rate has now been below 5 percent for xx months with no signs of inflationary pressures.

Nonfarm payroll employment rose 69,000 in September. Since January 1993, 16.7 million jobs have been created, with 15.6 million of these jobs in the private sector.

Recent indicators suggest that the U.S. economy remains on a healthy and balanced course. Despite the challenges facing the U.S. economy with the recent international financial turmoil, the U.S. economy is likely to continue on this path of solid growth with low unemployment and inflation, which has led to rising wages and higher living standards for all Americans.

RECORD TYPE: PRESIDENTIAL (NOTES MAIL)

CREATOR: Alan S. Polasky ( CN=Alan S. Polasky/OU=CEA/O=EOP [ CEA ] )

CREATION DATE/TIME: 4-OCT-1998 18:45:46.00

SUBJECT: testimony with EPA and DOE comments incorporated

TO: Michele Jolin ( CN=Michele Jolin/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Joseph E. Aldy ( CN=Joseph E. Aldy/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TO: Janet L. Yellen ( CN=Janet L. Yellen/OU=CEA/O=EOP @ EOP [ CEA ] )

READ:UNKNOWN

TEXT:

===== ATTACHMENT 1 =====

ATT CREATION TIME/DATE: 0 00:00:00.00

TEXT:

Unable to convert ARMS\_EXT:[ATTACH.D94]MAIL43640177L.226 to ASCII,  
The following is a HEX DUMP:

**TESTIMONY OF DR. JANET YELLEN  
CHAIR, COUNCIL OF ECONOMIC ADVISERS  
BEFORE THE  
U.S. HOUSE OF REPRESENTATIVES  
COMMERCE SUBCOMMITTEE ON ENERGY AND POWER**

**TUESDAY OCTOBER 6, 1998**

Thank you, Mr. Chairman. I appreciate having this opportunity to discuss with you the economics of climate change and the Administration's efforts to address this significant environmental challenge. As you know, I have testified on this topic before this Committee on two prior occasions. In my first appearance, prior to the Kyoto negotiations, I emphasized that if flexible, market-based mechanisms are effectively used, the costs of cutting greenhouse gas emissions would be significantly reduced. Elaborating on this point, I stated in March of this year that, in the Administration's view, the costs of achieving our Kyoto target would be modest if we can succeed in implementing international trading, joint implementation, and the Clean Development Mechanism in an efficient manner and we achieve meaningful developing country participation. A report released by the Administration in July, entitled "The Kyoto Protocol and the President's Policies to Address Climate Change: Administration Economic Analysis" elaborates the assumptions and analysis underlying this conclusion. In addition, the Stanford Energy Modeling Forum has been coordinating an economic modeling exercise of the Kyoto agreement, and the participating modelers, who include academic, private sector and government analysts, have made available some of their preliminary results. Today, I will provide a brief summary of the Administration's Economic Analysis and review several of the key findings of the Energy Modeling Forum effort.

**CostsThe Potential Impact of Climate Change**

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1995 that "the balance of evidence suggests that there is a discernible human influence on global climate." Current concentrations of greenhouse gases have reached levels well above those of preindustrial times. If growth in global emissions continues unabated, the atmospheric concentration of carbon dioxide (CO<sub>2</sub>) will likely double relative to its preindustrial level by midway through the next century and continue to rise thereafter. As a result of the increased concentration of CO<sub>2</sub>, the IPCC estimates that global temperatures will increase by between 2 to 6 degrees Fahrenheit in the next 100 years, with a best guess of about 3.5 degrees Fahrenheit. Potential consequences associated with this shift in climate include a rise in sea levels, greater frequency of severe weather events, shifts in agricultural growing conditions from changing weather patterns, threats to human health from increased range and incidence of diseases, changes in availability of

freshwater supplies, and damage to ecosystems and biodiversity. Further discussion of the costs of climate change is contained in the Administration Economic Analysis.<sup>1</sup>

### **The Kyoto Protocol and the Buenos Aires Conference of the Parties**

Previously, Undersecretary Eizenstat and I appeared before this Committee to discuss the Kyoto Protocol and the Administration's efforts to address the risks of climate change. In my testimony, I described the many important flexibility mechanisms in the Kyoto Protocol and explained how they would allow countries to achieve cost-effectively the emissions targets established in this agreement. These mechanisms, which permit what we have termed "when", "what", and "where" flexibility in meeting the Kyoto emissions targets, are described in detail in the Administration Economic Analysis. Since securing international emissions trading, the Clean Development Mechanism, and joint implementation last year in Kyoto, the Administration has worked in bilateral and multilateral arenas to promote understanding of these mechanisms and to develop rules that will promote their efficient operation. This work will continue in the talks in Buenos Aires and beyond. While I will defer to the Department of State for a discussion of the upcoming international negotiations, I will reiterate that efficient implementation of these flexibility mechanisms is critical to reducing the costs of achieving the targets established in the Kyoto Protocol.

### **Costs of Action**

In assessing the economic effects of the Kyoto Protocol, the Administration has drawn on the insights of a wide range of models and analysis. Examples include models of the energy sector and economy over the next 25 years, such as the Stanford Energy Modeling Forum, the Intergovernmental Panel ~~on~~ on Climate Change's review of the economic and social dimensions of climate change, the work of the Organization for Economic Co-operation and Development (OECD) on the economic dimensions and policy responses to global warming, and the Administration's staff-level interagency analysis. In addition, the Administration used other tools, such as a meta-analysis, basic economic reasoning, overviews of the domestic and international energy sectors, ~~simple~~ statistics regarding energy efficiency and greenhouse gas emissions, and economic indicators from World Bank, International Energy Agency, and Energy Information Administration databases.

Assuming that effective mechanisms for international trading, joint implementation, and the Clean Development Mechanism are established, and assuming also that the United States achieves meaningful ~~developing country~~ participation of key developing countries, the Administration's overall assessment is that the economic cost ~~to the United States in aggregate~~

<sup>1</sup> Please refer to the attached paper copy or <http://www.whitehouse.gov/WH/New/html/kyoto.pdf> for a PDF version of this document.

~~and to typical households~~ of attaining the targets and timetables specified in the Kyoto Protocol will be modest for the United States in aggregate and for typical households. This conclusion is not entirely dependent upon, but is fully consistent with, formal model results. The Administration continues to believe that there are limitations to relying on any single model to assess the economic impact of the Kyoto Protocol. However, model results can further inform and improve the understanding of the effects of climate change policy. To complement the economic analysis of the Administration's policy to address climate change, we have conducted an illustrative assessment with a modified version of the Second Generation Model (SGM). The results from the SGM substantiate the conclusion that the economic effects of an efficient, effective, and global policy to address the risks of climate change will be modest.

An assessment using the SGM model that accounts for effective trading and developing country participation yields permit price estimates ranging between \$14/ton and \$23/ton, and direct resource costs to the U.S. between \$7 billion and \$12 billion/year. The range reflects uncertainty about the extent of Annex I participation in international trading.

Under the assumptions of the Administration's analysis, permit prices in the range of \$14/ton to \$23/ton translate into energy price increases at the household level between 3 and 5%.

Under these permit prices, fuel oil prices would increase about 5 to 9 percent, natural gas prices about 3 to 5 percent, gasoline prices about 3 to 4 percent (or around 4 to 6 cents per gallon), and electricity prices about 3 to 4 percent. This increase in energy prices at the household level would raise the average household's energy bill in ten years by between \$70 and \$110 per year, although such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity restructuring. By 2008-2012, the anticipated 10 percent decline in electricity prices from ~~the restructuring that is part of our climate change agenda~~ is projected to lead to expenditure reductions of about \$90 per year for the average household.

The illustrative modeling analysis does not account for several key components of the Kyoto Protocol and the Administration's policies to reduce greenhouse gas emissions. These include the benefits of reducing net emissions through carbon sinks, the Administration's electricity restructuring proposal, the Administration's Climate Change Technology Initiative (R&D funding and tax incentives in the FY 1999 Budget), the Administration's sectoral consultations to encourage and support voluntary efforts by U.S. industry to undertake emissions reductions, including the provision of credit for early action, and the Administration's efforts to reduce federal energy use. There are also ancillary benefits of reducing greenhouse gas emissions -- in particular, the corresponding reductions in conventional air pollutants like sulfur dioxide or nitrogen oxides. These benefits alone could produce savings equal to about a quarter of the costs of meeting our Kyoto target.

Since I last testified before this Committee, the Administration has released its proposed electricity restructuring legislation and the supporting analysis of this proposal. The

Administration's proposed Comprehensive Electricity Competition Act (CECA) is estimated to reduce greenhouse gas emissions by about 25 to 40 million metric tons of carbon equivalent per year by 2010. Further, the electricity restructuring proposal provides potential cost-savings in four areas: dispatch efficiency, improved capital utilization, savings in capital additions and cost reductions in fuel procurement, non-fuel operation and maintenance expenses, and administrative and general expenses. These four categories of savings are likely to reach or exceed \$20 billion annually. The Department of Energy's CECA supporting analysis documents<sup>2</sup> contain further discussion of the Administration's electricity restructuring proposal.

### **Recent Research on the Economics of Climate Change**

Since I last appeared before this Committee, many economists have conducted and made available their analyses of the Kyoto Protocol. I noted in both of my previous appearances that there are limitations to relying on one or a small set of models and that we were eager to see assessments of the Kyoto Protocol by other models. In March, I indicated that the Energy Modeling Forum (EMF) based at Stanford University, a long-running model comparison exercise involving many of the leading climate and energy models, would conduct full scale analyses of the Kyoto Protocol. We have now received a compilation of the preliminary analyses by the participating modeling teams.

#### *EMF Kyoto Analyses*

The Energy Modeling Forum comparison exercise of the Kyoto Protocol has included ten modeling teams from the United States, Europe, and Asia. In evaluating the Kyoto Protocol, all of the participating teams used economic models that incorporate the potential for international trading in greenhouse gas permits. By explicitly incorporating international trading, these models can evaluate the opportunities for cost-savings through trading among Annex I nations and among Annex I and developing countries were they to adopt emissions targets. Since the Kyoto Protocol enables all countries with emissions targets to trade emissions allowances among other countries with targets, these models are well-suited to assess the economic implications of the international trading component of the agreement.

While the EMF models can assess international trading, there are several other flexibility mechanisms of the Kyoto Protocol that they cannot, at present, readily assess. For example, these models did not incorporate the effects of sinks. While several modelers did assess the economic costs of achieving the Kyoto targets with "off-line" assumptions about sink activity, none incorporated an integrated energy-land use model. Further, most of the modelers did not evaluate opportunities to reduce costs by trading across greenhouse gases. These models are

<sup>2</sup> Please refer to the attached paper copy or <http://www.doe.gov/ceca/ceca.htm> for the PDF version of the supporting analysis.

primarily energy models and are focused on the economics of reducing carbon emissions from fossil fuel combustion. Again, some modelers analyzed the Protocol by making some “off-line” assumptions about the potential reductions in non-carbon dioxide greenhouse gases, but none employed a model with cost curves for these gases. Finally, it should be noted that these models did not include opportunities for emissions reduction through Administration proposals, such as electricity restructuring or the Climate Change Technology Initiative, that could lower greenhouse gas permit prices.

The EMF results provide very useful context for the Administration’s economic analysis.

First, the illustrative model used by the Administration, the Second Generation Model of Battelle the Pacific Northwest National Laboratory, tends to fall in the middle of the range of this set of models in terms of U.S. permit prices.<sup>3</sup> For example, under Annex I trading SGM generates a permit price which is at the median of this set of models. Under full global trading, the SGM permit price is just below the median permit price. Second, the EMF exercise found that the reduction in permit prices as trading expands from no trading to Annex I trading to full global trading is robust. On average, the EMF models found that Annex I trading would cut the U.S. permit price by 52% relative to a no trading scenario. Of these models, one estimated a 72% reduction in the permit price under Annex I trading. In full global trading, the permit price would be, on average, 78% lower than the no trading price. Several models estimated permit price reductions of about 90%.

#### *Analyses of Trading Constraints*

In addition to the modeling of various efficient international trading scenarios, several EMF modeling teams have considered the impact of constraints on the opportunity to buy or sell emissions allowances in an international market. These scenarios are intended to reflect potential quantifications of the term “supplemental” in the international trading article of the Kyoto Protocol (Article 17). While the United States is unambiguously opposed to trading restrictions, several parties to the agreement have indicated support for some form of a trading constraint. Trading restrictions would generate no benefit for the global climate while they could significantly increase the costs of achieving the Kyoto targets.

Before describing the economic costs of trading constraints, I would like to explain why such constraints yield no climate benefits. Regardless of where an emission reduction occurs, it has the same effect on total emissions and the same effect on the climate. A ton reduced in New

<sup>3</sup> Please note that the version of SGM used in EMF differs from the analysis conducted by the Administration because the EMF version does not include cost curves for non-carbon dioxide greenhouse gases used by the Administration. Since efficient trading across gases would lower costs and permit prices, the EMF version of SGM yields slightly higher permit prices than the Administration version.

York generates the same climate benefit as a ton reduced in Berlin. In proposing trading constraints, some have focused on countries such as Russia, that will likely have "hot air" have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. ~~This "hot air" refers to countries, such as Russia, If trading constraints are established that will have restrict the ability of Russia to sell permits (or restrict the opportunity for other Annex I countries to buy Russian permits), then emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies first commitment period would be lower than in the absence of such constraints. If trading constraints are established that restrict the ability of Russia to sell hot air (or restrict the opportunity for other Annex I countries to buy hot air), then emissions during the first commitment period would be lower than in the absence of such constraints.~~ However, Russia would simply bank its ~~hot air~~ permits and use these ~~emissions allowances~~ permits in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is most relevant in terms of changes in the global climate.

To provide a sense of the economic implications of trading constraints, I would like to share with you two examples from work done by EMF modeling teams. First, consider a trading constraint that mandates that at least two-thirds of the emissions reductions necessary for a country to achieve its Kyoto target must occur through domestic actions. Evaluating this trading constraint with the EPPA model based at the Massachusetts Institute of Technology, the permit price for the United States is almost four times higher with the constraint than under an unconstrained global trading system. It is important to note that the effects of this constraint are even more pronounced for the European Union and for Japan. The permit price for the EU would be more than five times higher than the unconstrained global trading permit price, and the Japanese permit price would be thirteen times higher. As these results indicate, the trading constraint would result in each country experiencing a different marginal cost of abatement, and there would be no common permit price for a ton of carbon equivalent. Since the constraint restricts opportunities for countries like the United States, Japan, and members of the EU to buy emissions allowances, the competitive price for ~~emissions~~ emission allowances from countries like Russia would fall below the unconstrained level.

Second, consider a trading constraint that mandates that acquisitions of permits through international trading could not exceed 10% of a country's emissions allocation. For example, the U.S. target is approximately 1.5 billion tons of carbon equivalent on an annualized basis. Under this trading constraint, the United States, or private firms in the United States, could not purchase more than 150 million tons on an annual basis from other countries. Assessing this trading constraint with the Second Generation Model based at ~~Battelle~~ the Pacific Northwest National Laboratory, the permit price for the United States would more than triple relative to the

unconstrained global trading permit price. For the EU, the permit price would nearly double, and for Japan, the permit price would be eleven times as high as the unconstrained global price.

While trading constraints increase greenhouse gas permit prices (and subsequently, energy prices) in the United States, the European Union, and Japan, they also reduce the gains from trade by the countries likely to be sellers of emissions allowances. For example, in a world where large developing countries adopt emissions growth targets and participate in international trading, Russia, China, and India would sell fewer emissions allowances at lower international permit prices under such trading constraints than in an unconstrained global trading environment. Such restrictions lessen the benefits of participation by developing countries in international trading.

### *Developing Country Participation*

While no non-Annex I country has yet adopted a binding emissions target, economic and environmental benefits would accrue if some developing countries do so. ~~For example,~~ Setting a target set slightly below the business as usual emissions level for the commitment period would generate climate benefits by reducing global emissions below what they would otherwise have been. In addition, if the target is set not too far below the business as usual emissions level, the participation of the country in a global trading system would produce economic benefits or “gains from trade” for both the developing country and its trading partners. Emissions trading by developing countries would occur if they chose to undertake emissions reductions above and beyond their commitments -- reductions that would generate trading extra income for them as long as their marginal abatement cost is below the world trading price for greenhouse gas permits. Many of the EMF models reveal that, for large developing countries, like China, such excess reductions would indeed be profitable, so that these countries would export permits and gain from trade. Developing countries would also reap ancillary benefits of reducing conventional air pollutants, which may be substantial. Benefits from ~~such~~ trading would also accrue to Annex I countries. Annex I countries (and private firms in these countries), who would purchase these emissions allowances in the world market, would achieve their targets at lower cost than without the participation of the developing countries. However, it should be noted that the more stringent the target for the developing country, the lower the gains from trade both for that country and for Annex I countries such as the United States. Indeed, an extremely stringent target could conceivably make the developing country a net importer of emissions allowances, and raise the international trading price for a greenhouse gas permit. Still, these models illustrate the potential to create targets that simultaneously make the environment, the developing country, and Annex I countries all better off.

### **Conclusion**

The Administration’s overall conclusion is that the economic impact of the Protocol will be modest under the conditions we have identified in our economic analysis. The purpose of

this testimony has been to summarize the analysis we have presented in the Administration Economic Analysis on climate change and to provide a brief update of recent modeling efforts outside of the government.

I look forward to continuing to work with members of this Committee, as well as with other interested parties, in further analyzing the Kyoto Protocol and evaluating the net effects of reducing greenhouse gas emissions. It is my hope that economic analysis will continue to play a key role in designing policies in this area.

I welcome your questions.

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