

ADMINISTRATION HISTORY APPENDIX

CHAPTER THREE: IMPROVING FINANCIAL SERVICES, AND MARKETS AND THE
FEDERAL GOVERNMENT'S FINANCIAL MANAGEMENT

SYSTEMIC RISK



DEPARTMENT OF THE TREASURY
WASHINGTON, D.C.

December 17, 1999

ASSISTANT SECRETARY

**MEMORANDUM FOR SECRETARY SUMMERS
DEPUTY SECRETARY EIZENSTAT**

THROUGH: Gary Gensler *GG/LS*
Under Secretary
Domestic Finance

FROM: Lee Sachs *LS*
Assistant Secretary
Financial Markets

SUBJECT: Mitigation of Systemic Risk and Implementation of the President's Working Group Recommendations.

Introduction

The mitigation of systemic risk emerged as a central theme in both the President's Working Group's study on hedge funds, released in April 1999, and its report on OTC derivatives and the Commodity Exchange Act, released earlier this month. The Treasury Department and the President's Working Group have been pursuing measures to create an environment in which market discipline can function most effectively in constraining excessive leverage and mitigating systemic risk. Our set of policies, when taken together, is intended to:

- Reduce the likelihood or frequency of failures by constraining excessive leverage through enhanced market discipline and increased transparency and disclosure; and
- Minimize disruptions to the system when the inevitable failures do occur by increasing liquidity and creating mechanisms that minimize exposures, provide for prompt resolution, and promote mutualization of risk.

The specific recommendations set forth in the two reports of the President's Working Group would, taken together, also "improve the plumbing" by increasing the overall efficiency and transparency of certain important market segments. They would also increase the competitiveness of the U.S. financial markets and help to prevent growing market segments – such as the OTC derivatives market – from migrating overseas. Each of these improvements is not only a worthy goal in its own right, but also contributes to the broader theme of mitigating systemic risk.

Individual recommendations are in various stages of implementation in the private sector or in the regulatory or legislative arenas. What is currently lacking, however, is the strength of an overarching message to galvanize support behind the complete set of recommendations aimed at mitigating systemic risk. In particular, we are concerned that

our legislative agenda is not advancing as quickly as it might if the individual legislative initiatives were linked together in one message under the rubric of systemic risk mitigation.

This memorandum will begin by examining the specific recommendations set forth in the two reports issued by the President's Working Group, outlining how they address the systemic risk issue and providing an update on our progress in implementation in the private sector, regulatory and legislative arenas. It will then discuss legislative strategies for advancing the systemic risk agenda. Finally, the memorandum will conclude with proposed next steps for creating and advancing a public agenda addressing systemic risk. To help ensure the success of our legislative efforts, in this memorandum we are seeking:

- Your agreement to deliver a speech, preferably in January or early February, advancing the agenda for mitigation of systemic risk;
- Your recommendation on which of three alternative legislative strategies we should pursue; and
- Your concurrence with our relative prioritization of our legislative goals.

President's Working Group Reports

In the hedge fund report, the President's Working Group made eight specific recommendations (see Appendix A), and in the derivatives study, we made six (see Appendix B). Many, though not all, of these recommendations were aimed at and/or have the effect of furthering the goals outlined above and thereby helping to mitigate systemic risk.

Specifically, with regard to systemic risk, six of our recommendations could reduce the likelihood or frequency of failures by enhancing market discipline. These recommendations would enhance market discipline in three primary ways: by increasing transparency and disclosure, by calling upon regulators to encourage enhancement of counterparty discipline in regulated entities, and by serving as a catalyst for and supporter of private sector initiatives to improve risk management practices. Accordingly, we recommend the following actions to reduce the likelihood or frequency of failure:

- More frequent and meaningful information on hedge funds should be made public;
- Public companies, including financial institutions, should publicly disclose additional information about their material financial exposures to significantly leveraged institutions, including hedge funds;
- The Congress should enact the changes to the CEA proposed by the President's Working Group to remove impediments to innovation (specifically, electronic trading systems) to promote transparency, liquidity, and efficiency in the OTC derivatives markets;
- Financial institutions should enhance their practices for counterparty risk management;
- Regulators should encourage improvements in the risk management systems of regulated entities; and

- Regulators need expanded risk assessment authority for the unregulated affiliates of broker-dealers and futures commission merchants.

Although the above suggestions should help to reduce the frequency of failures, some will inevitably occur. Thus, in our approach to reducing systemic risk, we have sought to minimize the disruptions that such failures create and diminish their impact by reducing the likelihood of a “domino effect” by proposing steps to “improve the plumbing”.¹ With regard to minimizing disruptions to the system when failures do occur, we recommend:

- The regulation of clearing systems for OTC derivatives and steps to promote their development;
- The enactment by Congress of the provisions proposed by the President’s Working Group to support financial contract netting; and
- The enactment by Congress of the changes to the Commodity Exchange Act (CEA) proposed by the President’s Working Group to create legal certainty for OTC derivatives.

Status of Implementation

Regulatory and Private Sector Recommendations. While many of our recommendations for mitigating systemic risk require legislative action, we have made progress in implementing or furthering a number of our non-legislative recommendations. Our call to regulators to encourage improvements in the risk management systems of regulated entities has been answered by the bank regulators. In the area of supervisory oversight, the bank regulators — namely, the Federal Reserve Board and the Office of the Comptroller of the Currency — earlier this year issued new guidance urging improvements in the risk management systems of regulated entities.

With regard to our role as a catalyst for and supporter of private sector initiatives, in each of the President’s Working Group reports, we maintain regulation where necessary, and identify a number of additional regulatory steps that should be taken if our current approach proves inadequate. Our recommendation that financial institutions enhance their practices for counterparty risk management has been taken seriously by the private sector. Two private sector groups were formed to help implement the report’s recommendations. As you know, the first group, the Counterparty Risk Management Policy Group (CRMPG), produced a report entitled *Improving Counterparty Risk Management Practices*. Their report sets forth a number of recommended actions that the members of the group, which includes twelve globally active banks and investment banks, intend to take and encourages others to follow their lead. This lays the foundation for industry-wide improvements in risk management practices. As you are aware, we are engaged in an ongoing dialog with representatives of this group in order to move beyond the recommendations made in their report. Though there are obviously challenges in the area of public disclosure, our simultaneous work with this group and other private sector entities should result in progress.

¹ While we did not specifically address Herstatt risk in the derivatives study, the adoption of our recommendations would facilitate the development of clearing systems that would serve to mitigate this risk. A memorandum is being drafted specifically addressing this issue.

A more recently formed group, consisting of four leading hedge funds, is exploring the development of a set of sound practices for their risk management and internal controls, among other things. This group intends to develop its own recommendations on ways to further the work done by the CRMPG and to make suggestions targeted specifically for hedge funds. They anticipate releasing their report within the next month.

We are working with each of these groups and with other private sector industry participants to encourage such advances. This dialog will be an ongoing process and one we expect to continue to contribute to the development of increased transparency and disclosure and enhanced risk management practices.

Legislative Recommendations. While our legislative recommendations are at various stages in the legislative process, this appears to be the arena in which we are facing the greatest challenges in implementation. It is also the area in which a strong systemic risk approach, unifying a variety of individual recommendations into a concerted platform, is likely to have the greatest impact.

Two of the recommendations from the Working Group's hedge fund study which would enhance transparency and disclosure are now in the legislative process as part of a bill sponsored by Representative Baker (the "Baker bill"), which was originally co-sponsored by Representatives Kanjorski, Leach, and LaFalce. The Baker bill would implement our recommendation that more frequent and meaningful information on hedge funds be made public. The legislation, as drafted, would require certain hedge funds to report financial information and measures of market risk on a quarterly basis to the Federal Reserve Board. Additionally, the Baker bill advances our recommendation that public companies, including financial institutions, should publicly disclose additional information about their material financial exposures to significantly leveraged institutions, including hedge funds. Representative Baker himself approached this legislation from the perspective of mitigating systemic risk. Representatives Markey and Dorgan have also introduced a proposal to increase transparency and disclosure. We plan to work with both the Baker bill supporters and the Markey constituency to attempt to adopt a common approach.

One of our key recommendations for minimizing disruptions when failures do occur was our suggestion that Congress enact provisions supporting financial contract netting in bankruptcy. This recommendation was advanced in both of the Working Group reports. There is generally wide support for such provisions, which were included in a bankruptcy bill that passed the House in May and was recently debated in the Senate. The bill failed to pass the Senate this session due to unrelated, controversial provisions in the legislation. The Working Group will continue to stress the importance of its recommendations in this area, which will likely be enacted next year, either as stand-alone legislation or again as part of a broader bankruptcy reform package. Chairman Leach has already indicated his support for stand-alone legislation to advance these provisions. Chairman Gramm also has jurisdiction over this issue and is likely to be supportive.

Another legislative recommendation which is not yet as far along in the legislative process is our call for expanded risk assessment authority for regulators for the

unregulated affiliates of broker-dealers and futures commission merchants. The SEC has recently circulated draft legislation that would implement this recommendation with respect to securities broker-dealers and government securities broker-dealers. We and the other agencies of the Working Group are currently reviewing the SEC's proposals.

Finally, since the derivatives study was released only about one month ago, we have not yet taken steps toward enacting the legislative recommendations relating to systemic risk set forth in that report.

Legislative Strategy

There are many promising signs that a comprehensive legislative agenda aimed at mitigating systemic risk could receive broad-based support on the Hill. This should be a fundamentally non-partisan issue. While many committees share relevant jurisdiction, as noted above, several key players have expressed an interest in forwarding our agenda for mitigating systemic risk. In addition to the efforts described above, Chairman Leach has announced that the issues of derivatives and hedge funds will be a priority for his Committee when Congress returns. Mitigation of systemic risk may be the type of non-partisan issue that could be taken up even in this abbreviated session.

However, we also face significant challenges. First, there is very little time left on the Congressional calendar, and little is likely to be accomplished once the focus shifts more fully to elections. Also, this, like other issues, is an area in which there are differences of opinion about the best approach to pursue. Additionally, certain members have expressed an interest in regulating OTC derivatives, a position that could be at odds with our recommendations.

Our greatest legislative challenge will be amending the CEA. While the Agriculture Committees have primary jurisdiction, Banking and Commerce are involved as well. Bliley and Dingell (Commerce), as well as the Banking and Agriculture Committees, have all expressed support for the clearinghouse recommendation. Enacting the full slate of CEA amendments may prove more challenging, however. While we may face some resistance in the Agriculture Committees, these issues have never been presented to them as issues of systemic risk. This argument may resound with Committee members who might find themselves unwilling to delay legislation designed to mitigate systemic risk. Additionally, there are powerful private sector players with strong interests in achieving legal certainty for OTC derivatives who are likely to exert additional pressure to achieve these changes. Our best opportunity for the full slate of CEA amendments is likely to be through the CEA reauthorization process next year, but is unclear whether this process will conclude by the end of this session of Congress.

We have been drafting legislation designed to implement our derivatives recommendations. We have three options:

- Convince the President's Working Group to send up joint legislative language, which could prove challenging on a number of the issues;

- Inform the President's Working Group that the Treasury intends to send up legislation; or
- Provide technical assistance to Members with no attribution.

Although we will obviously advocate for the entire systemic risk mitigation agenda and, indeed, for all of the recommendations set forth in the Working Group reports, we must prioritize those recommendations. We must recognize that many of the issues regarding CEA reauthorization are unlikely to be addressed in this session. Thus, while continuing to advocate for the enactment of the necessary legislation for our entire slate of recommendations, the items that we recommend advancing most forcefully would be:

- *Regulated clearinghouses:* This is largely a non-controversial recommendation that enjoys bi-partisan support. However, we do anticipate a negative response from the Chicago exchanges. Nevertheless, it is an important component of our systemic risk agenda.
- *Removal of impediments to innovation (specifically electronic trading systems):* While this recommendation may face some resistance from the Chicago exchanges and their supporters, it is important to enact as soon as possible because of its impact in promoting transparency, liquidity, and efficiency in the OTC derivatives market. These are important goals in and of themselves, and they also contribute to the mitigation of systemic risk.
- *Legal certainty:* While it plays a more indirect role in systemic risk mitigation, legislating an exclusion from the CEA for OTC derivatives as recommended in our derivatives study is essential to ensure the ongoing competitiveness of the U.S. in the growing OTC derivatives markets.
- *Bankruptcy Financial Contract Netting:* Another non-controversial item with bi-partisan support. We need to remove it from the politics of consumer bankruptcy by pulling it into the systemic risk discussion.
- *Hedge Fund Disclosure:* It is already in the legislative process, enjoying support from key members. We should work with them to ensure not only its passage, but also its including as many of our recommendations as possible.

One additional recommendation which is also worth discussing, though we did not include in our list of priorities because it is not likely to be well-received by either Congress or the private sector, is granting expanded risk assessment authority to regulators for the unregulated affiliates of broker-dealers. This is an important component of systemic risk mitigation, but could cost significant political capital to implement. We would like to discuss it further with you.

Next Steps

Regardless of which approach we decide to pursue, we believe that a powerful tool for creating excitement and motivation behind our legislative agenda would be for you to make a public speech in January or early February designed to unify and amplify the message and policies behind these recommendations regarding systemic risk. This could be a speech focused solely on the systemic risk issue, or could be a broader visionary speech addressing the future of financial markets – the changes they are undergoing, the new challenges these will bring, and the appropriate role of regulation in the financial markets of the 21st century. Either speech should be combined with our legislative slate focused on systemic risk mitigation and a public affairs campaign focused on our market-oriented approach.

We look forward to discussing these options with you at your convenience.

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FEDERAL GOVERNMENT'S FINANCIAL MANAGEMENT

TREASURY
INFLATION
PROTECTED
SECURITIES
(TIPS)



ASSISTANT SECRETARY

September 11, 1998

MEMORANDUM FOR DEPUTY SECRETARY SUMMERS

FROM: David W. Wilcox DW

SUBJECT: Deflation and TIPS Yields

You asked about the effect of deflation on the real TIPS yield relative to the nominal yield on conventional coupon securities.

I had James Girola take a look at this, and in general, deflation would cause the real yield on TIPS, *even as calculated according to market convention*, to be above the nominal yield on conventional securities. This conclusion is illustrated in the following three tables for a hypothetical 10-year indexed note with a principal value of \$100.

- In each table, the real rate of return required by the market is assumed to be 3.00 percent, and the real coupon rate on the note is assumed to be 2.75 percent.
- In the first table, the inflation rate is assumed to be 1.00 percent per year, which implies that the nominal yield on conventional securities is 4.00 percent, given the 3.00 percent real rate of return. The first three columns show the real stream of coupon payments, the real principal payment of \$100, and the sum. Applying the 3.00 percent real rate, the market price for this note is 97.85. The fourth column provides the stream for calculating the real yield, which comes out to be the same 3.00 percent.
- In the second table, the inflation assumption is changed to zero. Since none of the real payments is affected by the inflation rate, the real price and real yield are unchanged. The nominal yield is now also 3.00 percent.
- In the third table, deflation at 1.00 percent per year is assumed. The main effect is to cause the real principal payment at maturity to increase: this occurs because the note promises that the final repayment of principal will not be below \$100 in nominal terms regardless of deflation, with the result that in real terms the payment rises to \$110.57. After applying the 3.00 percent real market discount rate, the price of the bond is \$105.70.

- **However, the market method for calculating the yield uses the \$100 figure rather than the enlarged final payment, as shown in the fourth column. This gives a yield of 2.11 percent, which falls below the 3.00 percent rate of return, but is still above the 2.00 percent nominal yield implied by the deflation assumption.**

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CHAPTER THREE: IMPROVING FINANCIAL SERVICES, AND MARKETS AND THE
FEDERAL GOVERNMENT'S FINANCIAL MANAGEMENT

UNITED STATES
ENRICHMENT
CORPORATION
(USEC)



DEPARTMENT OF THE TREASURY
WASHINGTON

96-154892

January 23, 1996

GENERAL COUNSEL

MEMORANDUM FOR LAWRENCE H. SUMMERS
DEPUTY SECRETARY OF THE TREASURY

FROM: EDWARD S. KNIGHT *ESK*
GENERAL COUNSEL

SUBJECT: United States Enrichment Corporation (USEC)
Privatization Process

I want to raise several issues with you concerning the USEC privatization process. Under the current law, the Secretary of the Treasury is the sole shareholder of the USEC. The USEC is required to consult with appropriate agencies of the United States on the implementation of any privatization.

Working closely with Domestic Finance and after extensive discussions with the USEC's Chief Financial Officer and General Counsel, we obtained a letter last July to the Department from the USEC's President which clarifies the Department of the Treasury's role in the privatization process. Specifically, the letter states that the USEC will take the following actions with the concurrence of the Department of the Treasury:

- (1) the decision as to whether to finalize an IPO or M&A transaction;
- (2) agreement to the terms contained in the underwriting agreement relating to an IPO transaction; and
- (3) agreement to the terms contained in the sale agreement relating to an M&A transaction.

After reviewing the proposed USEC privatization language contained in the reconciliation bill, it appears that the requirements for the implementation of privatization would dictate that the Secretary approve the implementation based on a number of criteria that may conflict with each other. For example, one provision of the proposed legislation would require the Secretary to approve any sale of the USEC in a manner that provides for: (1) the long-term viability of the USEC; (2) the continuation of the operation of the gaseous diffusion plants; (3) the protection of the public interest in maintaining a reliable and economical domestic source of uranium mining, enrichment and conversion services; and (4) the maximum proceeds to the United States, to the extent not inconsistent with such criteria listed above. In addition, the proposed legislation requires the Secretary's determination that the method of transfer will provide the maximum proceeds to the Treasury consistent with the four criteria listed above.

Another section of the legislation requires the Secretary's approval on the method of the transfer and establishing terms and conditions on the transfer. The Secretary is required to use the same criteria identified above except that the "to the extent not inconsistent with such criteria" clause in (4) is not included here.

In anticipation of Congressional interest in the USEC privatization process, it appears that we should ensure that the Secretary is not placed in a legally awkward position because of conflicting criteria regarding the USEC privatization process. With regard to the pending USEC legislation, I would like to discuss with you the Department's policy views on the Treasury's role in the implementation of the USEC privatization.

It may be useful for all of us to get together and discuss the USEC privatization.

cc: Jerry Hawke
Mozelle Thompson

The Deputy Secretary of the Treasury

January 31, 1996

TO: ED KNIGHT
JERRY HAWKE
MOZELLE THOMPSON

FROM: LAWRENCE SUMMERS

RE: USEC Privatization Process

Could you all very quickly caucus on this and identify any issues on which you disagree or where I can be helpful -- or on which you agree but think I ought to focus.

Attachment

Room 3326

622-1080



DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

96-154617

January 24, 1996

MEMORANDUM TO DEPUTY SECRETARY SUMMERS

THROUGH John D. Hawke, Jr.
Under Secretary for Domestic Finance

FROM: Mozelle W. Thompson *MT*
Deputy Assistant Secretary
(Government Financial Policy)

Erika M. Irish *EMI*
Senior Policy Analyst
(Domestic Finance)

SUBJECT: USEC Privatization

ACTION FORCING EVENT

Tomorrow afternoon you will be meeting with William H. Timbers, Jr., President and Chief Executive Officer of the United States Enrichment Corporation. After discussions with USEC staff, we have learned that Mr. Timbers would like to provide you with an update on the privatization process. He may also inform you about how USEC is handling the concerns of the minority-owned investment banks that were not selected to participate in the management group. Finally, Mr. Timbers may wish to discuss certain issues raised in your letter of December 26, 1995. (see attached).

BACKGROUND

Legislative Issues

As you know, since December Domestic Finance has worked with the Office of General Counsel, Legislative Affairs and Alan Cohen in developing appropriate responses (and opposing positions) to certain provisions contained in the Reconciliation Bill. Treasury has been actively pursuing the following changes in the USEC amendments:

- 1) Inclusion of an Anti-dumping waiver,
- 2) Removal of the Treasury Certification of "Maximum Proceeds Test",
- 3) Reimbursement of costs incurred by Treasury, and
- 4) Removal of the statutory 10% anti-takeover provision

Our concerns were submitted to OMB via legislative reference, directly to OMB PAD Glauthier, and to OMB Director Rivlin through Alan Cohen. We also raised our these issues in our NEC USEC working group on privatization and through our direct phone call to

Deputy Secretary of Energy Curtis who is the Administration's lead negotiator on USEC/Energy issues. As a result, our concerns are now being addressed in WH/Congressional budget negotiations on second tier issues. Finally, Treasury's Office of Legislative Affairs was very helpful in ensuring that the Senate Energy Committee staff was aware of our concerns.

To further press our position about this and other parts of the USEC bill, OMB invited us to present our concerns directly to Congressional staff on January 4, 1996. A follow-up meeting was held last week. Although Hill staff are reluctant to accept any changes to the legislation, we are making some good progress and believe we will get some of the changes we requested. We expect the group to reconvene next week.

The Privatization Process

Valuation Issues

Treasury, OMB, CEA, NEC and USEC have been working with Ernst and Young to refine and finalize their written report which includes: 1) a study of criteria and methodologies used U.S. and foreign governments in privatizations and asset sales, 2) identification of elements of systematic and non-systematic risk to be reflected in the discount rates used in the NPV analyses, 3) identification of cash flow assumptions and projections for an "in the government" USEC NPV analysis. (A copy of the most recent draft was provided to your staff.) We expect the report to be completed within the next few weeks.

We have also been working with Tax Policy to discuss what methodology should be used to calculate future tax revenues to the government from the privatized USEC. This is a key component in the "out of the government" valuation. Preliminary Tax Policy analyses have concluded:

- If the company is sold as an IPO the standard corporate tax rate of 35% is appropriate
- Potential tax revenues would be based on the "in the government" cash flows. (The assumption is that any additional revenues as a private corporation would be revenues displaced from elsewhere in the economy.)
- The appropriate discount rate to use on the projected tax flows is a risk adjusted rate.

Treasury and OMB has also been meeting with USEC and its financial advisor to review the corporation's strategic plan, discuss dividend issues and reach agreement on all underlying assumptions.

Transaction Related Issues

The management group and counsel have had several due diligence sessions and have produced first drafts of the offering documents. Domestic Finance as well as Treasury's Office of General Counsel are currently reviewing the draft documents. However, Treasury,

OMB and USEC must reach agreement on all outstanding issues, and Congress must pass pending USEC legislation before the S1 and Offering Memorandum is further developed. The Transaction Manager has also begun hiring small and disadvantaged businesses, to fulfill the subcontracting requirements in accordance with the Federal Acquisition Rules.

Underwriter Selection Process and Concerns.

As you know, last August, USEC commenced its underwriter selection process. USEC and Treasury staff evaluated written and oral proposals, in accordance with the selection criteria, ranked the proposing investment banks and in September, proposed a recommended management group. Based on the Selection Team's evaluation and recommendation:

- Morgan Stanley & Co. was selected as the Transaction Manager, to assist USEC in preparing for privatization, in its capacity as Lead Manager for a possible IPO transaction and as M&A Advisor for a possible M&A transaction.
- In the event of an IPO, Merrill Lynch & Co, was selected as the Co-Lead Manager; and
- Dean Witter Reynolds, Janney Montgomery Scott, Lehman Brothers, M.R. Beal & Co, Prudential Securities and Salomon Brothers were selected as Co-Managers.

Only one of the selected firms is minority-owned. Last month, several minority-owned firms wrote to USEC, the Vice-President, Director Rivlin, Secretary Rubin, Secretary O'Leary, The Hill and others suggesting a flawed process. Treasury responded to two letters from minority-owned firms who sought co-manager positions in the USEC Management group. The responses indicated that the designated procurement official at USEC is the appropriate person to discuss issues related to the underwriter selection process. Most recently, Director Rivlin yesterday received a letter from another minority-owned firm expressing its dissatisfaction with the USEC underwriter selection process. To date, the Secretary has not received any such letter from this firm, but it is quite possible that he will within the next week. USEC management has informed us that the USEC Board has scheduled meetings to address these issues with the firms that wrote to the Secretary and others last month.

cc: Edward S. Knight
Linda Robertson



THE DEPUTY SECRETARY OF THE TREASURY

WASHINGTON

December 26, 1995

Mr. William H. Timbers, Jr.
President and Chief Executive Officer
United States Enrichment Corporation
6903 Rockledge Drive
Bethesda, Maryland 20817

Dear Mr. Timbers:

Since we last met in September, the United States Enrichment Corporation (USEC) and the Treasury have made substantial progress in the USEC privatization process. I am hoping that this progress will continue during the coming months. As we prepare for a possible privatization transaction, however, I thought it might be helpful to review what we have been able to accomplish thus far, and what work remains to be done. I also thought it would be helpful to articulate clearly certain concerns we have about the privatization and to set forth certain ground rules for our future activity.

At the outset, you should be aware that Secretary Rubin, Under Secretary Hawke and I have been closely monitoring USEC's privatization efforts and the important public policy issues raised by the proposed transaction. We recognize that because we will be privatizing a government corporation -- a public asset -- any privatization transaction undertaken by USEC must meet the highest standards of integrity, while fully protecting the interests of the taxpayers of the United States. This transaction will be subjected to exacting public scrutiny. Accordingly, we must do all within our power to assure that the transaction is not only in the financial best interests of the United States, but is fully transparent and above all suspicion and reproach. I know that you and the members of the Board of Directors share these objectives.

We are particularly concerned that the process by which the form of the privatization transaction is determined be able to withstand exacting scrutiny. This dictates that any circumstance that might be viewed as creating the potential for a bias in favor of one form over the other -- for an IPO, for example, as opposed to a merger -- be addressed. For this reason and to this end we have expressed to you our strong conviction that (a) existing directors of USEC not be eligible to stand for election as directors of the privatized company; (b) the investment bankers who will be advising on the form of the transaction not be eligible for engagement by the privatized company for a specified period of time; (c) insiders not be permitted to purchase stock in the privatized company; and (d) there be no statutory anti-takeover provisions or stock purchase limitations that might be viewed as intended to entrench existing management.

DRAFT

**UNITED STATES ENRICHMENT CORPORATION
PRIVATIZATION ASSISTANCE**

January 4, 1996

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ENGAGEMENT OVERVIEW

Ernst & Young LLP has been engaged to assist the United States Department of the Treasury and the United States Enrichment Corporation (USEC). Specifically we were asked to:

- A. Perform a study of privatizations and asset sales and securitizations by U.S. (including State and Local) and foreign governments:
- Determine what criteria and methodology were used to: decide whether to privatize, measure the success of the sale, select the method of transaction.
 - Determine how discount rates were used in the analysis.
 - What were the transaction costs?
 - What is their relevance to the USEC transaction?
- B. Identify the elements of systematic and non-systematic risk that would be reflected in the application of discount rates for the net present value (NPV) analysis assuming USEC remains in the government and recommend how one might quantify such risk.
- C. Based on the requirements of the Energy Policy Act of 1992 and the results of A and B above, recommend the appropriate methodology for the NPV test.
- Recommend an appropriate methodology to evaluate the total return to the government from maintaining the Corporation as a government-owned entity.
 - Identify and make recommendations on critical assumptions (e.g. discount rate, capital expenditures, power costs, and Russian HEU).

BACKGROUND

The USEC board is required by Section 1502(a) of the Energy Policy Act of 1992 to, in consultation with appropriate agencies of the United States, determine that privatization will:

1. Result in a return to the United States at least equal to the net present value (NPV) of the Corporation.
2. Not result in the Corporation being owned, controlled, or dominated by an alien, a foreign corporation, or a foreign governmental.

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3. Not be inimical to the public health and safety or the common defense and security.
4. Provide reasonable assurance that adequate enrichment capacity will remain available to meet the demands of the domestic electric utility industry.

The first requirement has been interpreted as either a requirement to calculate an "in-government" NPV to compare to the expected proceeds of a sale of USEC to the private sector or as a requirement to calculate an estimated NPV of USEC as a private corporation to evaluate bids or suggested IPO/M&A prices. In either case a discount rate and projected cash flows are needed to determine the NPV. Several Government Agencies have policies on discount rates and in certain instances these Agencies recommend or have used private market-based discount rates. See Appendix A for the general policies on discount rates and instances where these Agencies have recommended using private-market rates.

We have used certain forecasted data supplied by the management of USEC as to the likely impact of USEC remaining a government corporation in our study, as well as data obtained from public sources deemed by us to be reliable. We have not examined the forecasted data or the assumptions underlying the forecasted and related assumptions. However, there will usually be differences between forecasted and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material.

As set forth in their report¹ dated April 1995, J.P. Morgan Securities, Inc. performed discounted cash flow analyses of USEC for two scenarios - one assuming the company would pursue a strategy that included only the existing gaseous diffusion plants (GDP) and the other assuming that a plant using the atomic vapor laser isotope separation (AVLIS) process would be built. We have relied upon the information regarding the GDP-only base case for USEC as provided by the management of USEC and quantified by J.P. Morgan Securities, Inc. without independent verification.

¹ J.P. Morgan represents that the information in this presentation is based upon USEC management forecasts and reflects prevailing conditions and their views as of this date, all of which are accordingly subject to change. In preparing this presentation, J.P. Morgan relied upon and assumed, without independent verification, the accuracy and completeness of all information available from public sources or which was provided to them by or on behalf of USEC or which was otherwise reviewed by them. In addition, their analyses are not and do not purport to be appraisals of the assets, stock, or business of USEC.

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INFORMATION, DOCUMENTS AND DATA GATHERED

Our discussion of privatization in developing and transitional countries is based on Ernst & Young's experience in 30 or more countries, including virtually all the countries in Central and Eastern Europe and Latin America, most of the former Soviet Republics, and a broad cross-section of privatizing countries in Asia and Africa.

The overview of privatization in developed countries is based on Ernst & Young's experience and knowledge, a review of the technical guide for economic appraisal published by the UK Treasury, a review of current literature and a review of GAO/AIMD-96-23 entitled "Budget Issues - Privatization/Divestiture Practices in Other Nations."

During the course of our study, we conducted interviews and discussions with or reviewed materials from individuals with knowledge of the U.S. State and Local privatization experience and associated with the following organizations:

City of Petaluma, California
Orange County, California
City of Indianapolis, Indiana
City of Charlotte, North Carolina
New Jersey Governor's Privatization Committee
New York City Economic Development Corp.
Water District, Franklin, Ohio
Mayor's Office on Competitiveness, Cleveland, Ohio
Solid Waste Management, Houston, Texas
Private Technology Inc.
Rastelis Environmental
The Reason Foundation

Our discussion of the elements of business risk for USFC incorporates internal Ernst & Young LLP expertise in financial economics, corporate finance and business valuation. In addition, we relied on information provided from USFC management, primarily:

Henry Z. Shelton, Jr	Vice President & Chief Financial Officer
Michael T. Won	Manager, Financial/Strategic Programs
Michelle Pepper	Financial Analyst

We also had discussions with the following individuals:

Mozelle W. Thompson	Department of the Treasury
Sara J. Cavendish	Department of the Treasury

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Erika M. Irish	Department of the Treasury
Elgie Holstein	National Economic Council
Peter R. Orazag	Council of Economic Advisors
Dr. Robert L. Civiak	Office of Management and Budget
Professor Richard Ruback	Harvard Business School
Jim H. Derryberry	J.P. Morgan Securities, Inc.
Laurence F. Whittemore	J.P. Morgan Securities, Inc.

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EXECUTIVE SUMMARY

Survey of International And Domestic Privatization Experience

Our survey of international and domestic privatization experience shows that governments typically pursue privatization initiatives for all or some of the following reasons:

- Reduce subsidies for non-profitable state-owned entities (SOEs)
- Raise cash for the treasury
- Increase economic efficiency
- Develop capital markets
- Promote wider share ownership
- Respond to external pressure from the International Monetary Fund, World Bank, and other international lending organizations (ILOs)

After the decision is made to pursue a privatization program, governments must select specific enterprises as privatization candidates. Generally, foreign privatization programs have not used rigorous quantitative methodologies to decide whether or not a specific enterprise ought to be privatized. An exception is New Zealand which uses a market discount rate appropriate for the industry in which the SOE operates in an analysis to determine whether a particular SOE should be privatized. While foreign governments have had various motivations for privatizing particular entities, the most relevant to the USEC transaction are potential efficiency gains under private ownership and projected proceeds to the Treasury.

We have seen evidence that domestic state and local governments have used net present value (NPV) methodologies as one criteria for assessing the privatization options for government-owned assets or operating companies. Other major considerations were: effect on ratepayers, effect on employees, acceptance by constituent cities and treatment of grant funded assets.

Our survey shows that in cases where the selling entity performed financial analyses requiring discount rates to select privatization candidates, the same discount rate was used for both public and private scenarios and was designed to reflect the riskiness of the cash flows associated with the business or asset being valued. Any difference in the scenarios was reflected in the cash flows. Private market discount rates were used in benchmark valuations once the decision to pursue privatization had been made.

Implementation factors common to most foreign countries and relevant to USEC are: government motivation, method of transaction, pricing, regulation of monopolies, restructuring prior to sale, concerns of various interest groups, treatment of employees

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and limiting foreign investment/control. The main transaction methods relevant to USEC are initial public offering (IPO) and private sale to a strategic or financial buyer. An IPO has been the option for the sale of larger businesses, particularly where there was expected to be a wide range of institutional or public demand. The experience in the UK and Canada suggests that transaction costs range from 2 percent to 5 percent of total proceeds for an IPO and are on the lower end of that range for private sales.

The success of a transaction is viewed differently by the various stakeholders depending on their objective for the transaction. In the short term, for governments who do financial valuations prior to sale, any sale that brings in an amount equal to or greater than the estimated value of the enterprise or activity is judged a success. Longer term success is generally measured in broad terms such as: reduction in customer prices, improvement in financial performance, wider consumer choice and better quality services.

Elements of Business Risk for USEC and Quantification of USEC Discount Rate

We believe that the best way to estimate a risk-adjusted discount rate, assuming that USEC remains in the government, is to assess the systematic portion of the variability in USEC's earnings. In general, the elements of business risk for USEC that are related to the company's flexibility to deal with market-wide changing economic conditions can be characterized as systematic while those elements of business risk that are more unique to USEC (e.g. changes in U.S. Government policy that affect the Suspension Agreement) can be characterized as non-systematic. Only systematic risk is reflected in the discount rate. Those factors that affect the level but not the variability of earnings can be captured in the cash flows.

It is neither possible nor proper to assign prices to each element of systematic risk for a government-owned USEC and add them to get its total systematic risk. The appropriate way to quantify the discount rate for a government-owned USEC is to estimate its total systematic risk. Typically, this is accomplished by examining comparable companies to estimate risk. Because no perfectly comparable companies with observable returns exist, the practical option is to use privately owned and publicly traded comparable companies and make adjustments to the resulting discount rate when necessary.

It is difficult, but necessary, to examine possible adjustments to the private market discount rate. For example:

- Systematic risk might be higher for a publicly owned USEC than for a privately owned USEC because the publicly owned USEC has less flexibility to respond to market-correlated shocks

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- The public sector discount rate might be either higher or lower than the private sector discount rate due to different costs of financial distress.
- Any private sector liquidity risk premium is likely to be small because USEC is a large, well-capitalized company.

We have considered these and other factors that could introduce differences between public and private discount rates and concluded such effects, if any, are likely to be small and may be offsetting.

Because exact quantification is impossible, we recommend that the Government use a range of adjustments of 11 percent to the 12.0 percent median discount rate developed for the private USEC for use in the NPV calculation for USEC² as a government corporation.

Summary of Recommended NPV Test

Ernst & Young LLP was engaged to recommend a methodology for calculating the NPV of USEC in the public sector and makes no representation regarding the present value results of these recommendations. Ernst & Young has not performed a valuation of USEC assuming government ownership. These results are range estimates based on information supplied by USEC management and quantified by J.P. Morgan.

We begin with the USEC GDP-only base case cash flows to derive the cash flows for a public USEC. The cash flows assumed that USEC was privatized. In developing the cash flows for a public USEC we have assumed that the entity would pay only state taxes at an assumed 6 percent rate beginning in 1998 and have removed Federal taxes. We identified and quantified, where appropriate, seven factors that influence the level of the cash flows: management costs, procurement regulations, investment projects, compliance costs, financing, power costs, and marketing effort. Furthermore, several cost elements have been refined since the original base case scenario was developed. We include these refinements as part of the cash flow adjustments.

The result of the NPV calculation for USEC assuming it remains in the government is approximately \$1.1 billion for discount rates ranging from 11 percent to 13 percent. If USEC's cash in the Treasury is added, the resulting figure is approximately \$2.3 billion.

² Adjusted from the USEC GDP-only discount rate of 13.4 percent as quantified by J.P. Morgan in April, 1995 due to the decline in the risk-free rate of approximately 140 basis points as of December, 1995.

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SURVEY OF INTERNATIONAL AND DOMESTIC PRIVATIZATION EXPERIENCE**Introduction**

Our survey of international and domestic privatization experience shows that governments typically pursue privatization initiatives for all or some of the following reasons:

- Reduce subsidies for non-profitable state-owned entities (SOEs)
- Raise cash for the treasury
- Increase economic efficiency
- Develop capital markets
- Promote wider share ownership
- Respond to external pressure from the International Monetary Fund, World Bank, and other international lending organizations (ILOs)

After the decision is made to pursue a privatization program, governments must select specific enterprises as privatization candidates. Generally, foreign privatization programs have not used rigorous quantitative methodologies to decide whether or not a specific enterprise ought to be privatized. An exception is New Zealand which uses a market discount rate appropriate for the industry in which the SOE operates in an analysis to determine whether a particular SOE should be privatized. While foreign governments have had various motivations for privatizing particular entities, the most relevant to the USEC transaction are potential efficiency gains under private ownership and projected proceeds to the Treasury.

We have seen evidence that domestic state and local governments have used net present value (NPV) methodologies as one criteria for assessing the privatization options for government-owned assets or operating companies. Other major considerations were: effect on ratepayers, effect on employees, acceptance by constituent cities and treatment of grant funded assets.

Our survey shows that in cases where the selling entity performed financial analyses requiring discount rates to select privatization candidates, the same discount rate was used for both public and private scenarios and was designed to reflect the riskiness of the cash flows associated with the business or asset being valued. Any difference in the scenarios was reflected in the cash flows. Private market discount rates were used in benchmark valuations only the decision to pursue privatization had been made.

Implementation factors common to most foreign countries and relevant to USEC are: government motivation, method of transaction, pricing, regulation of monopolies,

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restructuring prior to sale, concerns of various interest groups, treatment of employees and limiting foreign investment/control. The main transaction methods relevant to USEC are IPO and private sale to a strategic or financial buyer. An IPO has been the option for the sale of larger businesses, particularly where there was expected to be a wide range of institutional or public demand. The experience in the UK and Canada suggests that transaction costs range from 2 percent to 5 percent of total proceeds for an IPO and are on the lower end of that range for private sales.

The success of a transaction is viewed differently by the various stakeholders depending on their objective for the transaction. In the short term, for governments who do financial valuations prior to sale, any sale that brings in an amount equal to or greater than the estimated value of the enterprise or activity is judged a success. Longer term success is generally measured in broad terms such as: reduction in customer prices, improvement in financial performance, wider consumer choice and better quality services.

INTERNATIONAL PRIVATIZATION

This section discusses our general findings on privatization in seven developed countries: Australia, Canada, France, Italy, Japan, New Zealand, and the United Kingdom, and in developing and transitional countries such as those in Central and Eastern Europe and Latin America, most of the former Soviet Republics, and a broad cross-section of privatizing countries in Asia and Africa. We focus first on the most common goals which lead a country to initiate a privatization program. Second, we discuss how particular SOEs are selected for privatization. Next, we give examples of implementation issues faced by most countries after which we describe the success measures used to evaluate privatizations.

In addition to the general findings, we provide a more detailed discussion of the experience in the UK with emphasis placed on the use of discount rates in privatization implementation, types of success measures and detailed transaction cost data.

Goals of International Privatization Programs

Countries decide to initiate privatization programs as means to achieve all or some of the following primary objectives:

- Reduce subsidies for non-profitable SOEs
- Raise cash for the treasury
- Increase economic efficiency
- Develop capital markets

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- Promote wider share ownership
- Respond to external pressure from the International Monetary Fund, World Bank, and other ILOs

Countries place different emphasis on these goals. For example, while there is some recognition of efficiency gains and market forces, the key driving force behind privatization efforts in Australia has been deficit reduction. Canada initiated privatization of SOEs as part of a comprehensive range of structural reforms designed to reduce the cost and size of government and to support a more competitive and market oriented economy. In France the government is under great pressure to sell SOEs in order to cover its deficit, reduce the national debt and recapitalize remaining SOEs. A secondary objective is to develop domestic financial markets and increase share ownership by individuals.

The Italian privatization program, beyond reducing the deficit, is intended to remove the influence of political parties on SOEs. Furthermore, as in France, the government views privatization as a way to enlarge the capitalization of the market and increase share ownership by individuals. Privatizations have so far been few in number in Japan and seem to be driven both by the desire to reduce subsidies to non-profitable SOEs and to introduce competition to previously state-owned monopolies. Privatization in New Zealand is driven primarily by the interaction of fiscal considerations and political concerns.

The privatization program in the UK was introduced after stringent government control designed to replicate market forces failed to improve the performance of its SOEs. Additional objectives of the government were to promote wider share ownership and reduce the public sector borrowing requirement.

The countries of Eastern Europe and the Commonwealth of Independent States view privatization as a crucial step towards developing market economics. Transitional countries privatization programs were designed to achieve financial and efficiency goals, but also to improve capital markets and respond to pressure from ILOs.

Selection of Privatization Candidates

After the decision is made to pursue a privatization program, countries must select specific enterprises as privatization candidates.

Developed Countries

Generally, developed country privatization programs have not used rigorous quantitative methodologies to decide whether or not a specific enterprise ought to be privatized. An exception is New Zealand which performs an in- versus out-of-the-government

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discounted cash flow analysis to determine whether or not to sell a SOE. The government uses a market discount rate appropriate for the industry in which the entity operates for valuing both continued government ownership and private sector ownership.³

The goals of the UK privatization program in and of themselves did not suggest a selection strategy, and the decision to sell specific companies was driven by the overall economic and political policies rather than a strict cost-benefit analysis. Ultimately, the UK selected a number of firms in the energy, telecommunications, automotive, aerospace, steel and utility industries.

In Australia privatization selections seem to arise from the interplay among deficit reduction, commercial and political considerations. In 1993 the government abandoned the sale of Qantas because of problems with integration of the Australian Airlines business, increased international airline competition, and divergent views on value. In order to compensate for the corresponding A\$2 billion deficit in the Federal budget, the government chose to sell an additional 19% of the Commonwealth Banks to raise A\$1.7 billion.⁴

Before approving a particular privatization, the Canadian Cabinet must be satisfied that (1) the corporation does not serve a public policy purpose for which government ownership is still required, and (2) the company has the potential to become commercially viable, i.e. is likely to find a buyer.⁵ No attempt is made to quantify the financial tradeoffs between sale to a private buyer and continued public ownership. Parliament votes on each privatization and questions from MPs typically relate to either the advisability of privatization per se, or how privatization will affect the corporation or department's employees.

In France, parliament passed laws in 1986 and 1993 giving the government authority to privatize specific state enterprises. The composition of this legislative "long list" appears to be mainly a political decision.⁶ The law of 1993 followed closely the center-right RPR-UDF alliance's victory in the 1993 elections. The alliance's political platform stated that "all banks, insurance companies, and companies in competitive markets will be privatized."⁷ The law is an expression of intent to privatize. The actual privatization of a company is triggered by government decree. The government does not appear to perform a detailed cost-benefit analysis before issuing the decree.

³ "Privatization/Divestiture Practices in Other Nations", December, 1995. GAO/AIMD-96-23.

⁴ Privatization Yearbook, 1994, p243

⁵ The Honorable John McDermid, P.C., M.P. Minister of State for Finance and Privatization, Canada.

"Privatization: The Canadian Story", Carnegie Council Privatization Project No. 18, March, 1993.

⁶ Privatization International, March 1993

⁷ Ibid.

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According to the Privatization Plan designed by Italy's Ministry of Treasury pursuant to Law 359 of 1992, two groups of companies were to be privatized, i.e., those controlled directly by the state and those held through industrial holding companies.* Individual enterprises are eligible for privatization if they: are likely to find a buyer, require minimal or no restructuring, are not deemed strategically important and are compatible with a competitive market.

Developing and Transitional Countries

Developing and transitional countries typically use various screening criteria to select and prioritize companies for privatization or to separate the enterprises that are candidates for liquidation from those that can be privatized as going concerns:

- **Size** - many governments have started with small and medium enterprises before moving on to selling the larger SOEs on the grounds that smaller privatizations are easier to implement and the benefits more apparent to constituents
- **Financial Performance** - Financially troubled enterprises are most often among the first candidates for privatization, although in some cases the "jewels" may be offered in order to increase the chances of a successful sale
- **Strategic Importance** - Strategic reasons are most often cited as a reason for not privatizing a particular SOE.
- **Consistency with government sector priorities, or removing bottlenecks to economic development**
- **Degree to which the SOE operates in a competitive market**
- **Extent of restructuring necessary prior to privatization**
- **Identity of Previous Owners** - denationalization or return to original owners
- **Existence of Potential Buyers** - either based on specific expressions of interest or a general assessment of market conditions
- **International Leading Organization Preferences**
- **Strategic fit with remaining SOE portfolio**
- **Socioeconomic Impacts of Privatization**

* Privatization Yearbook, 1993 & 1994

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Most of these criteria either refer to observable characteristics of the enterprise or qualitative judgment and are not directly relevant to the proposed USEC transaction. Some of the more relevant factors are the existence of a potential market for USEC, extent of restructuring needed and financial performance.

We have found no evidence of any developing or transitional country that uses a rigorous quantitative methodology to select enterprises for privatization. In fact, the nature and objectives of the privatization process in most of these countries tends to negate the usefulness of such a methodology, for example:

- Limited or unreliable data make such a methodology impractical.
- Most of the enterprises being considered for privatization are loss-makers.
- These countries' political systems typically demand a lower standard of accountability from decision-makers who do not face the same demands to justify their actions to their constituents as those in some western democracies.

Thus, the experience of developing and transitional countries offers little guidance for interpreting the NPV calculation called for in the Energy Policy Act.

Implementation

Many implementation issues are common to privatization programs in developed as well as developing and transitional countries. We focus on the important factors commonly associated with privatizing an operating entity such as USEC and provide examples from developed countries where relevant.

Government Motivation: Governments have had to rank their motivations for privatization in terms of importance. In February 1985, the DOT recommended to the U.S. Congress that another railway be allowed to purchase Conrail because they believed a railroad would be more likely to sustain its operations. Critics suggested that the offer price considerably undervalued Conrail. The DOT plan was defeated and Conrail was finally privatized through a direct public offering of shares.

Method of Transaction: The three common methods of sale are: initial public offering of shares (IPO), competitive tenders and private sales including management and employee buyouts. The selection of a sale mechanism is usually made on a case by case basis. However, in countries such as France, Italy and the UK where increasing share ownership is a stated goal, privatization is often accomplished through public offering. Furthermore, an IPO has often been the option for the sale of larger businesses, particularly where there was expected to be a wide range of institutional or public

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demand. In general, IPOs had higher transaction costs than private sales, but in many cases had higher expected proceeds.

In Italy, private sale is treated as a residual method, to be carried out only if circumstances warrant and under special safeguards such as valuation by two different financial advisors. In Canada there is a preference for IPOs where feasible, but the government's experience has been that high transaction fees make an IPO uneconomical except for the largest transactions, such as Air Canada. New Zealand has relied almost exclusively on negotiated sales to strategic investors. Partial share sales were tried in the early stages of New Zealand's privatization program but were found to create many complications and to increase transaction costs.

Pricing: Correctly pricing a new issue is difficult. In some cases governments have been accused of unusually large underpricing after an issue was oversubscribed and the price increased immediately after the offering. If, however, an issue is overpriced and undersubscribed the validity of the SOI as a private firm can be put into question. On balance, politicians have seemed to favor underpricing because they discovered that the unassociated capital gains to private investors provided a new source of support for their privatization programs and the administration in power. In some circumstances governments have used warrants or clawback clauses to address pricing uncertainties. The problem of correctly valuing government assets or operating companies exists in a private sale as well as in an IPO, but any underpricing is not as transparent.

Although we have found little evidence of formal valuation techniques used to select privatization candidates, some countries perform a formal valuation to calculate offering prices or evaluate bids. For example, in Canada a financial advisor, usually a Canadian merchant bank, is hired to perform a valuation and develop a sales strategy. France has a Privatization Commission whose duties include fixing a floor price for transactions after the decision to privatize has been made. The floor price is set by reviewing valuations performed by professional advisors.⁹ The UK hires advisors who calculate how the private sector will value the entity when privately owned.

Regulating Monopolies: When natural or statutory monopolies were chosen for sale, the selling governments insured that the necessary regulatory controls were in place. In some cases, special legislation was enacted to cover the period until competitors were expected to enter. Still other entities were carved-up to generate separate operating companies that could compete with each other in the private market.

Restructuring Prior to Sale: Entities selected for privatization are corporatized prior to sale. Further financial, organizational or managerial changes may be needed in order for the entity to be commercially viable.

⁹ "Privatization/Divestiture Practices in Other Nations", December, 1995. GAO/AIMD-96-23.

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Other Interested Parties: In the British Gas privatization, the public was encouraged to buy the new shares with offers of reductions in service costs for all shareholders. Workers' concerns have often been managed by offering them shares. On occasions where there was management opposition, it has sometimes been diffused by giving managers board seats prior to the privatization or by the possibility of higher compensation under private competition.

Enabling Workers to Buy Shares: Some countries, such as France, do not have a long history of individual shareholding and sometimes individuals have little cash available for investment. In the Rhone-Poulenc and Elf Aquitaine privatizations, Bankers Trust developed a special loan program such that investors who paid cash for one share could borrow enough to purchase a further nine.

Limiting Foreign Interests: Many countries restrict foreign investment in privatized firms. Foreign investment in French companies was restricted by legislation to 20%. Canada, concerned about control of previously state-owned airlines, passed legislation in 1987 to restrict foreign ownership of airlines to 25%. The Japanese prohibited all foreign investment in Nippon Telephone and Telegraph from its IPO until it was fully privatized.

Strategic Industries: In the case of some strategic industries there is a government desire to regulate ownership and control certain aspects of the privatized SOE. In these cases the government holds special shares that grant it control under certain conditions. The provisions vary according to the individual circumstances of the company, but typically prevent any one person, or group of persons acting in concert, from controlling the equity of the company.

Success Measurement

The success of a transaction is viewed differently by the various stakeholders depending on their objectives for the transaction. For countries that perform valuation prior to sale, in the short term, any sale that brings in an amount equal to or greater than the value of the enterprise or activity is judged a success. The Japan Tobacco share sale was a major disappointment for the government. More than 40% of the shares went unsold because the share price was set too high and the timing of the deal failed to take account of the weakness of the market.

Longer term success is generally measured in broad terms such as: reduction in customer prices, increased competition in the industry, improvement in financial performance, wider consumer choice and better quality services.

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United Kingdom Experience

We discuss in detail the privatization experience of the United Kingdom because it is the international experience most relevant to the potential USEC privatization.

Goals of the UK Privatization Program

In 1979, the nationalized industries in the UK accounted for about 10% of GDP. They employed about 1.5 million people and dominated the transport, energy, communications, steel and shipbuilding sectors of the economy. However, the performance of nationalized industries was consistently disappointing in terms of total return on capital employed as well as on prices, productivity, manpower costs and customer satisfaction.

Social and commercial objectives became intertwined with the result that many of the performance problems of the nationalized industries could not be addressed. Moreover, because their borrowing for investment was underwritten by the government, the nationalized industries had to compete for public expenditure with all other government spending programs. Thus, the needs of individual state industries were often subordinated to macroeconomic requirements.

Successive governments unsuccessfully attempted to address the problem through increasingly stringent control frameworks in an attempt to try to replicate market forces. The conservative government elected in 1979 adopted a different approach and set out to:

- Introduce competition to improve efficiency
- Reduce the public sector borrowing requirement
- Promote wider share ownership
- Reduce political interference in decision making

Privatization through private sale has been a key element in the strategy to achieve these goals. Other elements in the strategy included tenders for a wide range of services in the public sector and, where cost effective, contracting out.

Selection of Privatization Candidates

As previously stated, the goals of the UK privatization program in and of themselves did not suggest a selection strategy, and the decision to sell specific companies was driven by the overall economic and political policies rather than a strict cost-benefit analysis.

When choosing an enterprise for privatization, the UK considered whether the entity was a core or non-core public sector activity or service and the extent to which there existed competition.

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ImplementationRestructuring

Although the UK has primarily sold nationalized industries, which were already in a corporate form, the Treasury first considered whether or not an entity needed to be restructured prior to sale. Restructuring could consist of financial, managerial or structural changes. When the water industry was privatized the government wrote off the industry's £5 billion public sector debt as well as injected approximately £600 million. British Airways' debt was also written off before privatization.

The prospect of privatization enabled companies to hire experienced managers from the private sector. For example, two years before British Telecom was privatized, it was possible to attract a chairman and a number of other senior executives from the private sector who may not have joined had they not known the company would be privatized.¹⁰

The electricity industry in England and Wales was split into three generating companies, twelve regional electricity distribution companies and an entity owning the national high voltage transmission network. The new structure was designed to allow for competition in electricity generation and distribution.

Regulation for Monopolies

Where natural or statutory monopolies existed and were selected for privatization, the government insured that the proper regulatory environment was in place. For example, the regulatory legislation that accompanied the British Telecom privatization limited price increases for 10 years to 3% below the cost of living growth and guaranteed distribution of services to unprofitable rural areas.¹¹

Method of Sale

After any necessary restructuring or regulatory change, one of two principle methods have been used to transfer the entity to the private sector: initial public offering or a private sale, including management buyouts and employee buyouts. The overriding factor in deciding on the method of privatization has been maximization of net proceeds. This is driven largely by capital market requirements such as: the financial track record of the entity, the size and nature of the business, and its continuing financial viability.

An IPO has been the option for the sale of larger businesses, particularly where there was expected to be a wide range of institutional or public demand. In general, IPOs had higher transaction costs than private sales, but in many cases had higher expected proceeds. In addition, IPOs have enabled the government to achieve its objective of

¹⁰ Brian W. Pomeroy, "An Assessment of Privatization in the UK: Mistakes, Successes, and Future Prospects", Carnegie Council/IDBT International Privatization Project No. 4, September, 1991.

¹¹ Privatization: The Motives and Outcomes, IUS Case 9-389-004.

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wider share ownership. In the case of some strategic industries the government retained a special share, called a "golden share" that granted it control under certain conditions.

Setting a share price for an IPO is a complex task. In the UK the share price is set by:

- announcing a fixed price, which is set on the basis of analyses performed by the government's financial advisors
- consulting with institutions to determine demand at a given price
- a combination of the two

Moreover, in some cases discounted prices have been set for small investors, consistent with the government's goal to broaden share ownership.

Smaller SOEs have typically been sold to trade purchasers. Government policy has encouraged management or employee buy-outs consistent with promoting employee share ownership. In private sales, the government's financial advisors typically conduct a discounted cash flow analysis to establish a floor price for evaluating bids.¹² The problem of correctly valuing government assets or operating companies exists in a private sale as well as in an IPO, but any underpricing is not as transparent.

Discount Rates

The UK government is obligated to secure value for money for the taxpayer and all sales are reviewed by the Public Auditor. Although no formal quantitative methodology is used to select specific companies for privatization, discount rates have been used in two ways in the privatization process:

- to compare the income stream of an entity in the public sector with the proceeds of privatization, and
- to evaluate how the private sector will value the entity if privately owned

In the UK, investments in public services (i.e. in a non-commercial part of the economy) are generally evaluated using a real discount rate of 6 percent, despite the fact that the government can borrow at a real interest rate of 3 to 4 percent, the risk-free rate. The 6 percent is supposed to give an efficient comparison to a low-risk private sector pre-tax cost of capital that such expenditure might be displacing. For example, when the government looked at whether certain prisons should be operated in the public or private sector, they used the same real discount rate for both income streams, 6 percent.¹³

¹² "Privatization/Divestiture Practices in Other Nations", December, 1995. GAO/AJMD-96-23.

¹³ Ernst & Young internal document

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Pricing public capital at 6 percent for this purpose is supposed to give a margin above the cost of government borrowing that is sufficient, but not excessive, to prevent any bias in favor of public sector financing.

Where the output of a public sector entity is sold in commercial markets, an average real required rate of return (RRR) on capital employed is set, usually at 8 percent. This RRR methodology was introduced in a white paper published in 1978 by the UK Treasury.¹⁴ John Major, then Chief Secretary to the Treasury, announced to Parliament an increase in the RRR from 5 percent to 8 percent in April, 1989¹⁵. The change was based on empirical evidence of an increase in the average real rate of return earned by industrial and commercial companies (ICC) (excluding the North Sea). According to a UK treasury working paper on discount rate issues¹⁶, the average return for all companies was believed at the time of the announcement to have increased to around 11 percent. The standard RRR of 8 percent was set somewhat below the expected ICC return over the long term to: 1) reflect the perceived lower risk of some public sector activities, and 2) mitigate disruption that a very sharp rise from 5 percent would have caused. (The measured average ICC real return on assets in 1988 has since been revised to approximately 9 percent from 11 percent, however, the standard RRR of 8 percent was not adjusted.)

According to the treasury working paper, "the general RRR of 8 percent is in practice applied to all the nationalized industries, although it is specified as a maximum for monopolies and it does not preclude higher returns for a public body that is, for example, in a cyclical market and scheduled for privatization".¹⁷ Further, standard discount rates and RRRs used in the public sector should reflect any sustained changes in projections of long term real interest rates or company rates of return.¹⁸

According to the UK's technical guide for government departments, "There is no standard discount rate for bodies controlled by an RRR regime. However, it is common in practice for a discount rate to be used which is equal to the body's RRR or higher on grounds partly of simplicity and partly that the use of such a rate, especially when applied to commercial returns on large projects, helps to ensure that the RRR will be achieved on average".¹⁹ For discounting the costs and benefits of publicly financed roads a real

¹⁴ Economic Appraisal in Central Government: A Technical Guide for Government Departments, HM Treasury (April 1991) pg. 78

¹⁵ Appendix B contains the full text of the statement made by Mr. John Major, then Chief Secretary to the Treasury, to Parliament in April, 1989 announcing the change to 8 percent.

¹⁶ Spackman, Michael, "Discount Rates and Rates of Return in the Public Sector: Economic Issues", IIM Treasury Working Paper No. 58 January, 1991

¹⁷ Ibid pg. 32.

¹⁸ Ibid pg. 42.

¹⁹ Economic Appraisal in Central Government: A Technical Guide for Government Departments, HM Treasury (April 1991) pg. 78

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discount rate of 8 percent is used. The real discount rate for railway investments is 8 percent.

Success Measurement

The success of the privatization program has been measured in broad terms, such as:

- Sale proceeds or minimization of ongoing public subsidy
- Reduction in the proportion of GDP accounted for by the public sector
- Reduction in consumer prices
- Subsequent improvement in financial performance
- Wider consumer choice
- Better quality services
- Access to private capital markets

The state sector in the UK has fallen from around 10% of GDP in 1979, to the current figure of just over 2%.²⁰ Over the same period the number of private investors has risen from 3 million to 10 million, an increase to which the privatization program has contributed greatly. About 90% of eligible employees became shareholders in their companies' privatizations.

Prices to consumers have on average fallen and the quality of service has risen. For example²¹

- Since privatization in 1986, British Gas prices to its industrial customers have fallen by about 35% in real terms.
- Since privatization of the electricity industry began in 1990, large electricity customers have been able to shop around and select another supplier offering better value for money. Choice of suppliers for consumers is under consideration.
- British Telecom's main prices, in real terms, are over 35% lower than at the time of privatization.
- By 1994 more than 95% of public pay-phones were working compared to 77% in 1977, and since privatization, BT provides 60% more of them.

²⁰ Ernst & Young: Privatization in the UK

²¹ H.M. Treasury Guide to the UK Privatization Programme (August, 1995)

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Returns on capital in the privatized industries have increased and the privatized companies have been able to raise capital in private markets.

DOMESTIC PRIVATIZATION

There are two main motivations for privatization at the state and local level: policy and financial. Privatization policy advocates hold the view that privatization can reduce government size, influence and bureaucracy. Others see privatization as a way for state and local governments to save (or raise) money without reducing services. Privatization can include divestiture of operating companies, asset sales, competitive contracting, vouchers, and public-private partnerships.

Competitive contracting is the most common form of privatization at the state and local level. For example, competitive contracting has been used for solid waste management, janitorial services, city bus operations and park maintenance. Asset sales or full divestiture of an operating company is considered most often for infrastructure projects such as: power plants, waste treatment facilities, water supply facilities, airports and roads, and real estate.

Waste Water Treatment Facilities

Typically there are three alternatives considered for city - and district - owned waste water treatment facilities: outright private sale, long-term lease with buyback option, and operating contract only. In four of the five facilities included in our survey these alternatives were compared using an NPV methodology.

The NPV analyses performed for these cities and districts used the same discount rate for all scenarios and differences in operating characteristics were reflected in the cash flows. The discount rate for all waste water treatment plant scenarios was based on the average cost of capital for the cities and districts. This low-risk discount rate reflects the belief that the cash flows are essentially risk free because a water treatment plant's revenues are not affected by market conditions.

Many other factors were considered important by the sellers including:

- Effect on ratepayers
- Control of entity
- Regulatory compliance
- Rate stability
- Quality of service
- Acceptance by constituent cities (in the case of a district-owned plant)

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- Capital expenditures
- Accountability
- Implementation
- Treatment of grant funded assets

To date, the only completed sale of a waste water facility occurred in Franklin, MA. Petaluma, CA will be sending out requests for proposals in early 1996 for a privately owned waste water treatment plant.

Wilmington, DE is currently negotiating bids on either long-term lease with an option or outright sale of its facility. One problem in Wilmington is that the county as well as the city. The county, concerned about potential rate upset that the city will get the windfall from the sale, is threatening to build

Charlotte, NC chose not to privatize, even though it was the alternative with the highest NPV, because of projected rate increases to the users under private ownership. Indianapolis decided not to sell its plant due to the treatment of its grant revenues

Airports

Under contract to John F. Brown Company, the firm Babcock & Brown, Inc. conducted a limited-scope "privatization study" for the City of Los Angeles. The report presented the alternatives of sale, lease, and City (for-profit) ownership of Los Angeles International Airport (LAX). The most critical assumption made in the study is that future revenues and expenses would be the same under different ownership, that is, whether the airport was owned by the City or by private parties. The study used a discount rate of 6.5 percent for all three scenarios. This was the approximate current yield on the City's 20-year general obligation bonds.

Robert Poole and Bryan Snyder of the Reason Foundation critiqued this analysis in a 1993 study, "Privatizing Los Angeles International Airport: Analyzing the Alternatives". They have three main criticisms of the R&B work:

- The cash flows wouldn't be the same for all three scenarios. Numerous studies show privatization in general and empirical evidence from Britain's privatizations show increased profits after privatization.
- B&B's analysis does not make the distinction between the operating costs in the three scenarios and the financing assumptions.

¹ Babcock & Brown Inc., "Los Angeles International Airport Privatization Study," submitted to the City of Los Angeles, Department of Airports, May 1992. Discussed in Poole, Robert and Bryan Snyder, "Privatizing Los Angeles International Airport: Analyzing the Alternatives", Reason Foundation, 1993.

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valuations are used to assess private bids to make sure the city is receiving the fair market value of the asset.

U.S. Resolution Trust

The Resolution Trust Corporation (RTC) does not use risk-free discount rates to value their real estate assets. The RTC was formed specifically to liquidate real estate assets. An oversight board reviews overall strategies, policies and goals of the RTC and approves, prior to implementation, RTC financial plans, budgets and periodic financing requests. Current members of the oversight board are²³:

Robert Rubin, Secretary of the Treasury
Alan Greenspan, Chairman of the Board of Governors of the Federal Reserve
Ricki Helfer, Chairman of the FDIC
Jack Ryan, Acting RTC Chief Executive Officer
Jonathan L. Fiechter, Acting Director of the Office of Thrift Supervision
Robert C. Larson, Chairman of Taubman Realty Group (Independent Member)
Herbert F. Collins, Chairman of the Board of Boston Capital Partners, Inc.
(Independent Member)

The RTC Valuation Methodology for portfolio sales is developed in Appendix II (March, 1992) and the Revised Appendix II (February, 1994). "Derived Investment Value" (DIV) is a measurement of value for income-producing real estate and land assets and is used by the RTC to evaluate bids for RTC portfolio sales. DIV is based on the discounted cash flow approach developed by a consortium that included Kenneth Leventhal, now Ernst & Young; Kenneth Leventhal. The appropriate discount rates are discussed as guideline spreads over the comparable maturity treasury index to yield private sector discount rates.

- The spreads for performing and subperforming loans range from 350 to 750 basis points depending on the asset.
- For non-performing loans the discount rates ranged from 12 to 22 percent.

These discount rates are not risk-free, but instead reflect the riskiness of the cash flows.

Comsat

The Comsat example is relevant to USFC in that a Federal Agency accepted a market-based equity rate in determining the appropriate rate of return for Comsat. The issue was

²³ Oversight Board Public Affairs Group

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²³ Oversight Board Public Affairs Group

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debated during a series of Federal Communications Commission (FCC) hearings held intermittently from 1965 to 1978 in order to determine what rate of return should be applied.

Comsat is a private corporation created in 1963 following an act of Congress to develop a commercial satellite system for international tele-communications. Although Comsat was incorporated as a private company, the Satellite Act of 1962 required it to offer its customers the benefits of the new communications technology in terms both of improved quality and reduced charges. Comsat has statutory monopoly on provision of international space equipment for the types of service the U.S. considers to be in the national interest and Comsat is the U.S. signatory to the International Telecommunications Satellite Organization (INTELSAT).

From Comsat's inception there were arguments regarding its proper rate of return on capital. The FCC held hearings to set the rates both retrospectively and going forward. The Commission heard from various experts each using different methods of calculating a cost of capital.²⁴ Dr. Stuart C. Meyers, an expert for Comsat, used the CAPM methodology and calculated a midpoint estimate of 14 percent. Dr. Meyers was also asked to comment on Comsat's riskiness relative to AT&T. He reported that Comsat was twice as sensitive to general market movements as AT&T. He also showed that Comsat's total variability in return was greater than AT&T's.

Dr. Eugene F. Brigham, a second witness for Comsat, used the historical returns on 602 industrial firms and 56 utilities plus his judgment that Comsat's risk was roughly equivalent to the industrials and higher than the utilities to estimate a range of 12 percent to 14 percent. Dr. Willard T. Carleton, a witness for the FCC trial staff²⁵, added a risk premium of 2 to 4 percent to the U.S. Treasury Bond rate to arrive at an estimate of 7 percent. The small risk premium was based on the staff's position that Comsat investors face relatively little risk.

Based on the evidence presented by the various witnesses, the FCC decided to "determine as riskless return on invested capital as we can find, and add to it a risk premium reflecting the risks found present in Comsat's fulfillment of its statutory mission. We also find it useful, as a yardstick, to compare Comsat's risks and cost of capital to AT&T."²⁶ The staff's position was that Comsat was no more risky than AT&T in 1964, and probably a little less, and that by 1975 Comsat was certainly less risky than AT&T. The FCC's recommended 1972 cost of capital for Comsat was 8 and 1/3 percent based on

²⁴ Communications Satellite Corporation (COMSAT), 118S Case 9-276-195 Rev. 6/11/95 and First Year Finance teaching notes.

²⁵ In the FCC proceeding, representatives of the Common Carrier Bureau's trial staff took the role of public advocate. To fulfill this role, they were segregated from the Commission's decision making personnel.

²⁶ FCC Docket No. 16070, "Communications Satellite Corporation, Investigation into Charges, Practices, Classifications, Rates and Regulations", released December, 1975.

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qualitative adjustments to AT&T's authorized rate of return announced in 1971 of 9 and 3/4 percent.²⁷ Thus, the recommended rate of return for Comsat was not a risk-free rate but rather a market-based equity rate.

TRANSACTION COSTS

Costs incurred in the privatization process in the UK have been the subject of evaluation by the National Audit Office (NAO). They fall under a number of headings: underwriting and commissions, selling commissions, clearing bank costs, marketing and advertising costs, and advisors' fees. Tables One and Two (pages 60 and 62) give details of the cost of various privatizations. Table Two shows more detail than Table One, but only covers 11 transactions since 1984. The highest absolute costs were incurred in the case of the utilities. In the case of BT (1984) and British Gas (1987) this was due to the high underwriting costs of 0.375 percent and 0.75 percent of proceeds respectively.

It is helpful to look at the costs incurred as a percentage of the total proceeds. The highest ratio of costs to proceeds since 1984 was BT in 1984 at 3.9 percent, with four other deals also exceeding 3 percent. The lowest costs on this basis are British Steel and the Regional Electric Companies at 1.9 percent and 1.4 percent respectively.

Transaction costs (including sales commission and legal fees) in Canada ranged from about 2 percent for a trade sale to 5 percent in the case of an IPO. Most of Canada's major privatizations have been private sales.

²⁷ AT&T as calculated by FCC rate hearings that used equity return for regulated utilities as a base and made subjective corrections based on whether AT&T was more or less risky than the electric utilities. See FCC Docket No. 19129 released August, 1973

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ELEMENTS OF BUSINESS RISK FOR USEC

We believe that the best way to estimate a risk-adjusted discount rate, assuming that USEC remains in the government, is to assess the systematic portion of the variability in USEC's earnings. In general, the elements of business risk for USEC that are related to the company's flexibility to deal with market-wide changing economic conditions can be characterized as systematic while those elements of business risk that are more unique to USEC (e.g. changes in U.S. Government policy that affect the Suspension Agreement) can be characterized as non-systematic. Only systematic risk is reflected in the discount rate. Those factors that affect the level but not the variability of earnings can be captured in the cash flows.

It is neither possible nor proper to assign prices to each element of systematic risk for a government-owned USEC and add them to get its total systematic risk. The appropriate way to quantify the discount rate for a government-owned USEC is to estimate its total systematic risk. Typically, this is accomplished by examining comparable companies to estimate risk. Because no perfectly comparable companies with observable returns exist, the practical option is to use privately owned and publicly traded comparable companies and make adjustments to the resulting discount rate based on qualitative considerations.

It is difficult, but necessary, to examine possible adjustments to the private market discount rate.

- Systematic risk might be higher for a publicly owned USEC than for a privately owned USEC because the publicly owned USEC has less flexibility to respond to market correlated shocks.
- The public sector discount rate might be either higher or lower than the private sector discount rate due to different costs of financial distress.
- Private investors sometimes require additional return for an investment that they believe will be difficult to recall -- a premium for liquidity risk. While the U.S. Government may face liquidity risk, it does not require remuneration for bearing this risk. However, because USEC is a large, well-capitalized company, any private sector liquidity premium is likely to be small.

We have considered these and other factors that could introduce differences between public and private discount rates and concluded such effects, if any, are likely to be small and may be offsetting.

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Because exact quantification is impossible, we recommend that the Government use a range of adjustments of ± 1 percent to the 12.0 percent median discount rate developed for the private USEC for use in calculating the NPV of USEC²⁸ as a government corporation.

Introduction

We have identified the major elements of business risk that may or may not be reflected in the application of discount rates for the NPV calculation assuming USEC remains in the government. Before we begin discussing the elements of business risk, we provide a brief review of the theoretical background including a discussion of public versus private activity, concepts of risk, and the characteristics of systematic and non-systematic risks. Next, we briefly discuss how to apply these concepts to government activity and how a change in ownership can affect the value of an enterprise. Our discussion of the elements of business risk is next. For each identified element of risk we provide a brief discussion on the impact of the risk element on USEC in the private sector then on USEC in the public sector followed by a characterization of the risk element as more appropriately reflected in the cash flows or more systematic or non-systematic in nature. Finally, we make a recommendation on how one might quantify such risk.

Theoretical Background

Economic theory presumes a different objective for a benevolent government than it does for individuals or businesses. While the latter are motivated by individual self interest and the desire to maximize profits, the government is assumed to maximize social welfare. Consequently, the government, according to traditional economics, *ought* to pursue policies and actions that benefit society as a whole.

- Privately owned companies have clear benchmarks with which to judge their performance: firm value and profits.
- Publicly owned companies often have several different objectives to fulfill, some hard to measure and some even contradictory.

In a world with no market imperfections, the actions of private individuals and businesses will result in outcomes that are socially optimal.²⁹ If, however, there are market imperfections, the actions of private individuals and businesses will diverge to some

²⁸ Adjusted from the USEC GDP-only discount rate of 13.4 percent quantified by J.P. Morgan in April, 1995 due to the decline in the risk-free rate of approximately 140 basis points as of December, 1995.

²⁹ Market imperfections include any distortions such as monopoly power, imperfect information, the lack of contingent markets, or even distortions caused by government policy.

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extent from those that are socially optimal. Consequently, the scope for government activity in the economy becomes wider.

Economic theory recognizes, however, that governments do not necessarily behave as they *should*. As a result, governments sometimes intervene in the economy in ways that do not improve social welfare. This can be especially true for government-operated businesses that are commercially viable in the private sector. In most cases, government-operated businesses have not responded well to market signals. Furthermore, they are often constrained by a political environment that limits management's ability to make decisions to operate the business efficiently, that is, to make profitable use of its available resources. For example, the Government-operated USEC had made several poor decisions with regard to the uranium enrichment business. The economy as a whole suffers because the resources employed by the government could be more productively used elsewhere.

Economists have developed a methodology to evaluate government investment projects and government activity. This methodology is social cost-benefit analysis. While theoretically sound, it is cumbersome to implement and requires many (sometimes arbitrary) assumptions.²⁰ Social cost-benefit analysis may be required in cases where there are large market imperfections because the actions of the private sector are expected to differ from those that are in the public interest.

The financial valuation of a business generally does not take into account the externalities associated with the business. However, government regulation can address specific externalities and market imperfections such as the cost of pollution and the existence of monopolies. Regulation can force the private owners and managers of a company to face the additional social costs they impose on society through the operation of the business. In such cases, a standard financial valuation should provide an accurate estimate of value to both public and private owners.

- Many privately-owned companies in several industries generate environmental and public safety externalities that are addressed by government regulation. For instance, nuclear power plants, oil refineries, coal mining and chemical plants all generate externalities that would be the same as or exceed those produced by USEC.
- We assume that the critical externalities associated with the operation of USEC are addressed by regulation. Consequently, we proceed with a financial analysis.

²⁰ Social cost-benefit analysis is commonly used by the World Bank to evaluate government programs. For an example of how cost-benefit analysis could be applied to evaluate privatization see Galal, Jones, Tandon and Vogelsang, *Welfare Consequences of Selling Public Enterprises*, New York: Oxford University Press, 1994.

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Background on Risk

Cash flows that will not fluctuate from projected amounts over time are risk-free. To individual investors, a U.S. Government bond is considered risk-free because it is assumed that the U.S. Government will never renege on its financial obligations.³¹ The probability, therefore, that the future cash flows will deviate from stated interest and principal payments is zero.

- The discount rate used to value risk-free cash flows reflects the time value of money.³²

Cash flows that may deviate from their projected amounts over time are risky. In general, investors must be compensated for the uncertainty associated with risky cash flows. Consequently, when uncertain cash flows are valued, they are valued at discount rates that are higher than those used to discount risk-free cash flows.

- The discount rate used to value risky cash flows reflects both the time value of money and compensation for bearing risk.
- The difference between the net present value of risky cash flows discounted at a risk-inclusive rate and the net present value of the same risky cash flows discounted at a risk-free rate is a measure of the present value of the risk.

Treasury Bond Rates Should Not Be Used To Discount Risky Cash Flows

The U.S. Treasury's long-term cost of borrowing, the yield on a 30-year Treasury bond, is not an appropriate discount rate to estimate the present value of risky cash flows.

- Using the 30-year Treasury bond yields as a discount rate to evaluate higher risk activities will lead to investment in activities that have high risk and low return.
- It would, however, be an appropriate discount rate for cash flows that are risk-free.

Using the yield on a 30-year Treasury bond to value government investments implicitly assumes that an alternate use of the funds would result in a similarly low rate of return.

³¹ Assuming the bond is held to maturity.
³² Assuming real cash flows.

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Government Ownership and Risk

Business risk comes from several sources:

- Operating Risk
- Market Risk
- Financial Risk
- Government Regulatory/Policy Risk

The inherent risk from running a business does not change with ownership unless the new ownership:

- Changes the operations
- Changes the markets of the business
- Changes the financing
- Changes the exposure to government regulation or policy

We examine all of these factors to determine how a change from public to private ownership might affect the business risk of USEC.

Systematic and Non-Systematic Risks

The Capital Asset Pricing Model (CAPM) is a theoretically sound method used to estimate a company's opportunity cost of capital. One of the key tenets of CAPM states that the risk of a well-diversified portfolio depends on the market risk of the securities included in the portfolio. It is the non-diversifiable market risk that sophisticated investors care about and that can be used as a benchmark for the required rate of return for a company's equity. Another name for non-diversifiable market risk is systematic risk. It is measured as the ratio of the covariance between the returns of a stock and the equity market as a whole to the variance of returns of the equity market. This measurement is called Beta. The systematic risk of a security as measured by Beta indicates the behavior of a share of the company's stock relative to movements of the market as a whole. In other words, if the Beta of a company's stock is 2, then the stock would increase 2 percent for each 1 percent increase in the market or in a like manner it would decrease 2 percent for each 1 percent decrease in the market.

The unique or non-systematic risk of a company's equity is diversifiable and is not correlated to movements in the market. An investor can reduce the variability of returns of a single security by adding securities whose returns are in part uncorrelated. In other words, a certain portion of the variability of returns on one security will be canceled out by the movements of another security's returns. An investor will not expect to be compensated for the portion of variability of returns that are unique to a security because

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words, a certain portion of the variability of returns on one security will be canceled out by the movements of another security's returns. An investor will not expect to be compensated for the portion of variability of returns that are unique to a security because almost all of unique risk can be eliminated through diversification. Only the systematic portion of the total variability of security returns to a risk averse investor represents risk for which the investor expects to be compensated.

The Government's Portfolio is Total Economic Activity

The government, by virtue of its power to tax, holds the most diversified portfolio possible: the whole economy. This does not mean, however, that it should not be compensated for any additional risk that it may bear by holding a risky investment.

- Specifically it should be compensated for the additional systematic risk that the investment exhibits.
- A broad market indicator such as the S&P 500³³ is a reasonable proxy for total return to economic activity in the United States.

If the government invests in projects or businesses with risky cash flows without proper compensation it is passing the risks on to the taxpayers. Taxpayers may not want to be exposed to those risks without proper compensation.

The Effect of Ownership On The Value of A Business

If two different owners would allow a business to run in exactly the same way, then the value of the business would not change with the change of ownership. Ownership changes affect value because of different choices that a different owner would impose or be forced to impose on the company's management. Specifically, a change in ownership can affect the value of a business in two ways:

- A change in the different values that are included in the projected cash flows associated with alternative scenarios. These could arise, for example, because of changes in operations or certain investment decisions that are preferred or precluded by specific owners.
- A change in the probability of occurrence associated with the alternative scenarios.

³³ In general the S&P 500 is used for practical reasons. See Appendix C for further discussion.

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The effect that a change in ownership has on the value of a business can be measured in two different ways: through different cash flows or through a change in the discount rate used to estimate the value of the business.²⁴

- If the change in ownership affects the forecasted amounts of the cash flows, then these differences can be reflected in cash flows.
- If the change in ownership affects the variability of earnings, then to the extent it represents an increase/decrease in systematic risk it should be reflected in the discount rate.

Specific Elements of Business Risk for USEC

We believe that the best way to estimate a risk-adjusted discount rate, assuming that USEC remains in the government, is to assess the systematic portion of the variability in USEC's earnings. To develop a specific methodology that is practical to implement requires deviation from pure theory. Moreover, implementation of any methodology depends on judgments with which reasonable experts can disagree.

In addition, we have been asked to evaluate the systematic and non-systematic nature of each business risk that USEC faces in and out of the government. It is difficult to measure with any accuracy how much systematic risk each element of business risk adds to total systematic risk, because, for example, one element of business risk can offset or enhance another's effect on earnings, and hence systematic risk. A discussion of each element of business risk is intended to help clarify how the public sector discount rate might differ from the private sector discount rate. Before identifying each element of business risk, we outline the methodology used to separate systematic from non-systematic risk.

- Security returns include capital gains and dividend payments which are both dependent on a company's earnings. Each risk element's impact on earnings variability and the relationship of the resulting earnings variability to changes in the economy in general are key determinants in characterizing the risk element as systematic or non-systematic in nature.
- Factors that primarily affect only the level of earnings were reflected in the cash flows.

²⁴ A third possibility is to simulate all the different possible alternate scenarios. In this case, one would change the values in each of the alternate scenarios, and change the probability of outcome that is associated with each alternate scenario.

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- If the risk element can be characterized on balance as unique, then it is more non-systematic in nature and is not a component of the discount rate. If, on the other hand, the risk element can be characterized on balance as more related to market-wide conditions, then it is more systematic in nature and contributes to the discount rate.

In general, the elements of business risk for USEC that are related to the company's flexibility to deal with market-wide changing economic conditions can be characterized as systematic risk while those elements of business risk that are more unique to USEC (c.g. changes in U.S. Government policy that affect the Suspension Agreement) can be characterized as non-systematic.

Costs

In general, a shift from public ownership to private ownership expands an enterprise's ability to adjust its costs.

- Flexibility of adjusting costs is beneficial to the company because it allows management to offset fluctuations in revenue.
- A reduction in flexibility increases fixed costs which is analogous to increasing the debt burden of a company.

Labor

There are three characteristics of labor costs that contribute to the variability or level of profits. These include: the ability of USEC to adjust the size of the labor force in response to changing market and economic conditions; the level of compensation for executive management at USEC headquarters; and, the possibility of production stoppages or slow-downs due to labor strikes.

USEC in the private sector would have greater flexibility to adjust the size and total costs of the labor force than in the public sector in order to respond to changing market conditions. Assuming management has good predictive, timing and implementation skills, these adjustments would be in line with changing revenues resulting in lower earnings volatility. USEC in the public sector would find it difficult to overcome U.S. Government regulations regarding public sector employment. Management would be more constrained, for example, in its efforts to reduce labor costs in line with any reduction in revenues. This reduced flexibility would result in higher earnings volatility. Because it is likely that the higher volatility of earnings in the government is positively correlated with general economic trends, this element of risk should be categorized as systematic and would be reflected in a higher discount rate for the public sector.

SECRETARY OF THE TREASURY
WASHINGTON

April 1, 1993

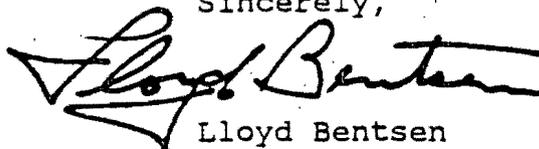
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Sincerely,



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The compensation for executive management of USEC in the private sector would likely be higher than that of USEC in the public sector, however they may be less managers. The overall effect of executive compensation on earnings variability for either a private sector or public sector USEC is likely to be negligible. Accordingly, any differences of executive compensation levels should be reflected in the cash flows and not in the discount rate.

The possibility of labor strikes exists whether USEC is considered in the private sector or in the public sector. In fact, USEC in the public sector has experienced labor strikes in the past. The result of a strike can be significant in terms of earnings variability because of production stoppages or slow-downs. Although a labor strike may result from economy-wide conditions, in general, any specific incidence of labor strike is unique to a specific company and is more non-systematic in nature. Accordingly, well-diversified investors should not expect to be compensated for the risk of labor strikes. The discount rate is unaffected by this element of risk whether USEC is in the private or public sector.

Plant and Equipment

Capital expenditures made by USEC in the private sector will occur at market prices. USEC management has stated that U.S. Government procurement regulations may push purchase prices above market prices for USEC in the public sector. Moreover, USEC has found that some vendors will not do business with it due to government procurement regulations. Differences in capital expenditures due to procurement regulations between USEC in the private sector and USEC in the public sector affect the level not variability of costs and should be reflected in the cash flows not the discount rate.

Another element of risk with regard to plant and equipment involves the flexibility of management to build or close plants. Management of USEC in the private sector would have greater flexibility than management of USEC in the public sector to respond to changing market demand conditions. Changing demand conditions would impact revenues and the flexibility of management to adjust costs to match revenue changes would impact earnings volatility. Greater flexibility would imply lower earnings volatility and, conversely, limited flexibility would imply higher volatility. The flexibility to adjust to economy-wide conditions is most appropriately characterized as systematic risk. Accordingly, the discount rate for USEC in the public sector would be higher.

Investment Decisions

A private sector firm has the flexibility to make investment and disinvestment decisions as appropriate given prevailing market conditions. USEC may choose to integrate vertically by buying an electric power plant, because electricity is one of its most

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important inputs. In addition, USEC may choose to integrate horizontally by entering into the waste disposal business, capitalizing on its expertise. It is likely that neither of these options would be available to USEC if it was owned by the government.

Greater flexibility to take advantage of market opportunities as they arise would imply lower earnings volatility and, conversely, limited flexibility would imply higher volatility. The flexibility to adjust to shifts in economy-wide conditions is most appropriately characterized as systematic risk. Accordingly, the discount rate for USEC in the public sector would be higher.

However, if USEC's management were prone to take on higher risk, higher return investments, then the greater flexibility to make investments could imply higher earnings volatility and, conversely, limited flexibility could imply lower volatility. In as much as these higher risk investments are correlated with the market then a portion of the additional volatility would add to the systematic risk faced by investors in a private USEC. Consequently, the discount rate for USEC in the private sector would be slightly higher. However, because the expected return to the investment would be higher, the cash flows for the privately-owned USEC would have to be increased.

Financing

USEC management forecasts little or no long-term debt for either the privatized USEC or the publicly owned USEC. A private sector USEC will face private market rates. USEC in the public sector will most likely have access to financing at below market rates because there would likely be an implicit or explicit government guarantee even if USEC borrows from the private sector. Although the value of the public sector USEC may be greater by the amount of the government guarantee, the cost of the guarantee should be accounted for as a deduction from the U.S. Treasury by the same amount because the Treasury would absorb the risk that would otherwise be borne by USEC's creditors.

USEC's flexibility as a public corporation is further restricted by the anti-deficiency regulations. As USEC makes long term commitments (e.g. 2 year Russian HEU contract orders, annual GDP contracting, etc.) cash retained by the public USEC is significantly higher than that for a privatized USEC.

Disposal Costs

For USEC in both the private sector and the public sector, the risk of unknown changes in disposal costs stems from possible changes in government environmental regulation and potential litigation. Volatility of earnings could come from one-time shocks that would be unique to USEC. This type of risk is non-systematic in nature and would not be a component of the discount rate in either a private sector or public sector USEC.

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Changes in Regulatory Environment

The risk attributable to changes in regulatory environment can be thought of in two ways. Currently, as a Government Agency, USEC is regulated by OSHA and the EPA, and the DOE for nuclear matters. The NRC is scheduled to become the nuclear regulator whether or not USEC is privatized. Any difference in the cost of compliance should be reflected in the cash flows for each scenario.

The other type of change would result from modifications of U.S. Government policy that would impact the regulatory environment with which either a public sector or private sector USEC must comply with some unknown change in costs of compliance. Although this would impact earnings variability, the nature of the risk is more unique to USEC than market-wide. The risk is more non-systematic for both a public and private sector USEC and the discount rate is unaffected.

Accident in the Plant

If an accident is limited in scale then the risk stems from the costs of remedying damages and potential liabilities for USEC in both sectors. There may be some difference in risk if the private sector regulatory environment increases or decreases the probability of an accident. The risk would affect earnings variability and is clearly unique to USEC in nature. Consequently, there would be no compensation in the discount rate for this type of non-systematic risk for USEC in the public sector or in the private sector.

Russian HEU Agreement

In 1993, Russia agreed to sell approximately 500 metric tons of HEU extracted from dismantled Russian nuclear weapons to the United States. The HEU is to be converted by the Russians to LEU suitable for use in nuclear power reactors. Under the contract implementing the agreement, USEC, the designated U.S. executive agent, pays for the SWU component of the LEU within 60 days of receipt; it pays for the natural uranium component after it resells or uses it. Based on the initial price established under the contract, the total nominal value of the LEU is \$11.9 billion, of which \$7.6 billion is SWU and \$4.3 billion is natural uranium. Both the existing HEU agreement and potential changes to policies affecting the HEU agreement could cause profit variations for a public or private USEC.

Current State

USEC can resell the SWU component of the LEU to its current customers, but existing trade restrictions limit the commercial sale in the United States of the uranium component of the LEU imported from Russia. Trade barriers in Europe and political barriers in Asia inhibit the sale of the Russian uranium outside the United States as well. Thus, in order for USEC to sell the uranium component of the LEU these barriers will have to be removed or adjusted to provide market access for this material. Thus the

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current state exposes USEC to the trade policy and political changes in markets in the U.S., Europe and Asia, and to the market price of uranium should these markets be made accessible. The trade and policy change risk is the same for a public or private USEC, is non-systematic and not reflected in the discount rate. The market price risk is the same whether USEC is public or private and is systematic and reflected in the discount rate to the extent that uranium prices are influenced by general market conditions.

Suspension Agreement Eliminated/ USEC Obligated to Buy Russian LEU

The suspension agreement as currently amended allows certain annual specified quantities of matched sales. The U.S. uranium mining companies and mine-workers' union are challenging the amended agreement in court. If the suspension agreement is eliminated then the anti-dumping duties on Russian uranium set aside by the suspension agreement become binding. If USEC is obliged to buy Russian LEU, it would not be able to sell the Russian uranium component. In the limit, USEC would be left with a stock of "Russian" uranium that would become a non-performing asset on its books. Any risk of government policy change is the same for both a public or private USEC, is non-systematic, and is not reflected in the discount rate.

Suspension Agreement Eliminated/ USEC not Obligated to Buy Russian LEU

The suspension agreement as currently amended allows certain annual specified quantities of matched and is being challenged in court. If the suspension agreement is eliminated then the anti-dumping duties on Russian uranium set aside by the suspension agreement become binding. In this scenario USEC would not have any exposure to risks arising from Russian LEU. Any risk of government policy change is the same for both a public or private USEC, is non-systematic, and is not reflected in the discount rate.

Suspension Agreement Expanded

The suspension agreement as currently amended allows certain annual specified quantities of matched and is being challenged in court. The variability of USEC's profits could be affected if the suspension agreement is expanded allowing the more Russian SWU and uranium to enter the U.S. market. The effect would be the same whether USEC was public or private. Any risk of government policy change is the same for both a public or private USEC, is non-systematic, and is not reflected in the discount rate.

U.S. Government Changes the Executive Agent

Under the current Russian HEU contract, USEC is the designated U.S. Executive Agent. The risks faced by USEC from changes in the suspension agreement would be mitigated if a new agent was appointed. Different risks might follow due to either competition from this agent or dealing with this agent. In any case, any risk caused by a government policy change is the same for a public or private USEC, is non-systematic, and is not reflected in the discount rate.

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Raw MaterialsUranium

The cost of raw uranium is not currently a large contributor to the variability of profits. USEC enriches clients' uranium and charges a processing fee; it does not buy uranium. Thus, fluctuations in raw uranium prices would have little impact on earnings variability for either a private sector or public sector USEC and this factor would not be reflected in the discount rate. As discussed above, the price of raw uranium could become a factor under certain policy scenarios.

Cost of Electricity

There are two kinds of electricity costs for USEC, firm and non-firm. Firm power costs are fixed through 2005 when they are due to be renegotiated. An increase or decrease in firm power costs in 2005 would affect USEC's profit level but not profit variability. USEC's management believes that an in-government USEC may not be able to negotiate prices as low as a private USEC. Any projected difference in prices should be reflected in the cash flows.

Non-firm power is purchased at market rates and any fluctuations in price would be reflected as variability in USEC's profits. Thus the risk attributable to changing market prices for electricity should be characterized as systematic risk and be reflected in the discount rate. The risk is the same whether USEC is publicly or privately owned.

Revenue FactorsMarketing

Differences in the level of marketing and client service could affect the level of USEC's profitability. A private sector USEC has more incentive to improve marketing and client service than a public sector USEC. This difference in marketing efforts and client service should be reflected as a difference in cash flows. Specifically, management believes a privatized USEC would be able to increase new business at no additional cost. Because marketing effort changes the level not the variability of profits it is not reflected in the discount rate.

Domestic Demand

Variability in domestic demand contributes to variability of USEC's profits whether or not it is publicly owned. The risk of changes in domestic demand for uranium enrichment due to varying use of electricity caused by market-wide changing economic conditions can be characterized as systematic risk and would be factored into the discount

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rate. Any changes in worldwide demand that are unrelated to general market shocks, such as decreased demand for nuclear generated power following a nuclear accident, would be considered non-systematic and not reflected in the discount rate.

Foreign Demand

USEC's exposure to worldwide demand fluctuation is the same whether it is publicly or privately owned. The risk of worldwide demand fluctuations due to macro economic forces is systematic and thus reflected in the discount rate. Any changes in worldwide demand that are unrelated to general market shocks, such as, decreased demand for nuclear generated power following a nuclear accident, would be considered non-systematic and not reflected in the discount rate.

Sources of Alternative Energy

If the price of alternative energy declines (increases) then the demand for nuclear energy (and thus uranium enrichment) will fall (rise) in the long-term. This demand risk contributes equally to profit variability for a public or private USEC. To the extent that alternative energy prices are correlated with market-wide economic conditions, this risk is systematic and is captured in the discount rate.

Competition

USEC faces actual or potential competition from the Russians, Louisiana Energy Systems and foreign uranium enrichment companies. Russian competition could arise due to changes in government policy. Competition could cause variability in profit for a public or private USEC. Because the risk of competition is in part influenced by policy change risk that is non-systematic and in part by general economic conditions that are systematic, this risk would be characterized as partially systematic and reflected in the discount rate.

Cost of Failure/Operating with Sustained Losses

A firm is considered financially distressed when it breaks or has difficulty keeping promises to creditors. A firm that is financially distressed may or may not end up in bankruptcy. The costs of financial distress for any firm depend on the probability of that firm becoming financially distressed and the costs associated with the distress. There are several components of the costs associated with financial distress: inefficient operating, investing or financing costs, costs of reorganization, and bankruptcy cost.

- It is possible that the risk of entering financial distress is higher in the government because of reduced operating flexibility of a government-operated firm.

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Bankruptcy is a corrective process that allows creditors to force restructuring of a firm to return its assets to profitability. A private USEC would face all the normal costs of bankruptcy including legal, accounting, and administrative fees resulting from disputes over how to compensate creditors and maybe shareholders. A public USEC faces no cost of bankruptcy because that process does not apply to government-owned firms.

Financial distress can cause managers to make inefficient operating, investing or financing decisions that impact the earnings of the firm. The loss of earnings due to inefficient decisions would affect both a public and private USEC.

If a going concern, like USEC, defaults on its debt, its creditors are likely to push for a reorganization that will return the assets to profitable use. A government-owned USEC would probably be allowed to run sustained losses longer than a privately owned USEC and the process and time associated with returning the assets to profitable use might be longer for the government-owned USEC.

The cost of financial distress can be defined as the assumed probability of entering distress multiplied by the costs associated with that distress and should most correctly be reflected in the cash flows. The probability of entering distress may be higher for a government-owned USEC, but it would have no bankruptcy cost. These factors may or may not offset each other. In either case the adjustment to the expected cash flows is small and would result in a negligible difference in value. The cost of failure is not a systematic risk and is most appropriately reflected in the cash flows.

It is true that some factor could be added to or subtracted from the discount rate used to value a government-owned USEC to capture the effect of the cost of failure on the value of the firm. However, this method is not theoretically correct, estimating this factor is difficult and any such adjustment is likely to be small.

Quantification of the USEC Discount Rate

We have discussed each element of business risk for USEC and suggested which elements are more systematic in nature thus contributing to the discount rate for an in-government USEC. In this section we explain how the discussion of each element of business risk can be used to help estimate a discount rate for the NPV calculation of USEC assuming it remains in the government.

It is neither possible nor proper to assign prices to each element of systematic risk for a government-owned USEC and add them to get its total systematic risk for two fundamental reasons.

- First, in order to price each element of risk separately, there would have to exist a market for each risk. Most of the business risks we have identified for a

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government-owned USEC are not regularly priced in any kind of observable market and so are difficult to quantify.

Second, if we could quantify the individual prices, it is not correct to simply add up the prices of the individual risks. One element of business risk can offset or enhance another's effect on total systematic risk.

The appropriate way to quantify the discount rate for an in-government USEC is to estimate its total systematic risk. Typically this is accomplished by examining comparable companies to estimate risk and return.

No perfectly comparable companies with observable returns exist. The only other uranium enrichment companies are also government-owned, this means that they could be good comparables but don't have observable returns. The practical option is to use privately owned and publicly traded comparable companies and make adjustments to their returns to achieve the appropriate discount rate.

Because there are no privately owned uranium enrichment companies, it is necessary to identify privately owned companies that are exposed to similar business risks. The companies that J.P. Morgan used in its comparable analysis were selected from among the following industries: utilities with low nuclear exposure, utilities with high nuclear exposure, natural gas pipelines, pipeline MLPs, chemicals, and refineries. Their suggested discount rate for a privately owned USEC investing in only GDP technology ranged from 10.4 to 16.4 percent, or a median of 13.4 percent as of April 1995. A discount rate is calculated by adding an appropriate systematic risk premium to a proxy for the risk-free rate, usually a long term Treasury rate. Between April, 1995 and December, 1995 the risk free-rate as measured by the yield on 30-year government bonds fell by approximately 140 basis points. Consequently, the median private sector discount rate should be lowered from 13.4 percent to 12.0 percent. We have used as a starting point this 12.0 percent represented by the current government bond yield plus the risk premium as quantified by J.P. Morgan.

It is difficult, but necessary, to examine possible qualitative adjustments to the private market discount rate. We showed in our previous discussion that the systematic risk might be higher for a publicly owned USEC than for a privately owned USEC because the publicly owned USEC has less flexibility to respond to market correlated shocks. We also discussed that the in-government discount rate might be either higher or lower than the out-of-government discount rate due to costs of financial distress. In neither case do we think that the scale of the effect is particularly large.

Private investors sometimes require additional return for an investment that they think will be difficult to resell -- a premium for "liquidity risk". While the U.S. Government may also face liquidity risk it does not require remuneration for bearing this risk. This

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difference may appropriately be reflected as a qualitative downward adjustment to the in-government discount rate relative to the out-of-government discount rate. However, because USEC is a large, well-capitalized company, any private sector liquidity premium is likely to be small.

Because exact quantification is impossible, we recommend that the Government use a range of adjustments of ± 1 percent to the 12.0 percent median discount rate developed for the private USEC.

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Recommended Methodology for the NPV Test**Introduction**

In order to calculate the NPV of a government-owned USEC to compare to the expected proceeds of a sale of USEC to the private sector, the evidence suggests that one should:

- Develop a projection of cash flows assuming that USEC remains government-owned.
- Estimate a risk-adjusted discount rate.

Our survey of international and domestic privatization experience shows that, in cases where a selling government entity performed financial analyses requiring discount rates, the same discount rate was used for both public and private scenarios and was designed to reflect the riskiness of the cash flows associated with the business or asset being valued. Any difference in the scenarios was reflected in the cash flows. Private market discount rates were used in benchmark valuations once the decision to pursue privatization had been made.

It is possible, however, that certain economic or financial differences between public and private ownership may be more appropriately reflected in the discount rate than in the cash flows.

We identified the factors affecting the level and variability of USEC's earnings and developed an approach for understanding how those factors influenced the risk-adjusted discount rate or the cash flow projections.

- Each risk element's impact on earnings variability and the relationship of the resulting earnings variability to changes in the economy in general are key determinants in characterizing the risk element as systematic or non-systematic in nature.
- Factors that primarily affect only the level of earnings were reflected in the cash flows.
- If the risk element can be characterized on balance as unique, then it is more non-systematic in nature and is not a component of the discount rate. If, on the other hand, the risk element can be characterized on balance as more related to market-wide conditions, then it is more systematic in nature and contributes to the discount rate.

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Based on our analysis of the systematic risk for a government-owned USEC, we recommend a range of adjustments of ± 1 percent to the 12.0 percent median discount rate³⁵ to calculate the NPV of USEC as a government corporation as of December, 1995.

We identified seven factors that influence the level of the cash flows: management costs, procurement regulations, investment projects, compliance costs, financing, power costs, and marketing effort.

Application of NPV Test to Public Sector USEC

All figures reported in this study are range estimates based on information provided by USEC management and quantified by J.P. Morgan.

Based on discussions with USEC management, a government-owned USEC would be unable to pursue the AVLIS technology for the following reasons:

- The Energy Policy Act states that an AVLIS plant can only be constructed by a private entity without using government funds.
- The Act further limits the funds that USEC can contribute to AVLIS pre-deployment to \$364 million.
- A public USEC might have difficulty attracting private financing for AVLIS commercialization because it may not incur any obligation, or expend any amount with respect to AVLIS.

Accordingly, we begin with the USEC GDP-only base case cash flows (as of April, 1995) to derive the cash flows for a public USEC. The cash flows assume that USEC was privatized. In developing the cash flows for a public USEC we have assumed that the entity would pay only state taxes at an assumed 6 percent rate beginning in 1998 and have removed Federal taxes. Furthermore, several cost elements have been refined since the original base case scenario was developed. We include these refinements as part of the cash flow adjustments.

The following factors were identified as having an influence on the level of USEC's cash flows:

Management Costs

³⁵ Adjusted from the USEC GDP-only discount rate of 13.4 percent developed in April, 1995 due to the decline in the risk-free rate of approximately 140 basis points as of December, 1995.

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Compensation for headquarters management in the public sector may be lower than in the private sector. However, the number of managers in a government-owned USEC may be higher than in a privatized USEC. To date USEC had been operating at half the staff levels of the previous operation. Moreover, salary and benefits expense is a small fraction of overall costs. Thus, the net effect on USEC management expense from a change from public to private ownership is difficult to predict and likely to be small.

Changes in Plant and Equipment Costs Due to Procurement Regulations

A publicly owned USEC may have higher costs due to Government procurement regulations. In addition, USEC has found that some vendors will not do business with it while it is a government agency because of procurement regulations. In USEC's base-case analysis annual maintenance expenses for plant and equipment range from around \$25 million to nearly \$55 million. Capital expenditures on plant and equipment may have to be adjusted upwards for the government-owned scenario to reflect government restrictions on procurement. In USEC's base-case's analysis these annual capital expenditures range from approximately \$30 million to nearly \$50 million.

Combining the maintenance expense and capital expenditures for plant and equipment, the total annual expenditures are projected to range from approximately \$50 million to \$100 million for the USEC GDP-only base case. USEC management suggests that government procurement regulations could increase these costs by 5 percent to 10 percent or between \$2.5 million to \$10.0 million annually.

To capture the effect of U.S. procurement regulations, these costs were increased by 5 percent from the USEC GDP-only base case, using the lower end of the range suggested by USEC's management.

Investment

In order to refine the USEC GDP-only base case, the cost of refurbishing one enrichment plant should be deducted from the cash flows. In the fall of 1995 USEC performed a more thorough analysis of the additional refurbishment costs needed for the GDP-only model. USEC's estimate for plant refurbishment expense is approximately \$890 million (in 1995 dollars) for the years 2001 through 2009. These refurbishment costs are for one plant only and may vary to some small degree depending on whether the Portsmouth or the Paducah facility is refurbished.

Compliance Costs

Any differences in compliance costs would have to be reflected in the cash flows. Currently, as a Government Agency, USEC is regulated by OSHA and EPA, and DOE for nuclear matters. NRC will become the nuclear regulator whether or not USEC is privatized. No adjustments to USEC's GDP base case were deemed necessary for a government-owned USEC analysis.

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Financing

No adjustments are necessary because no long-term borrowing is forecasted in the USEC GDP-only base case. The additional refurbishment costs for the existing enrichment plants, assuming USEC remains in the government, could be financed by USEC's cash on hand at the Treasury. This cash is assumed to be sufficient to cover anti-deficiency requirements of Government agencies.

Power Costs

The USEC GDP-only base case was refined to reflect the higher electricity cost that USEC (private or public) will face after 2005. This increase is projected to be \$199 million in 2005, increasing to \$217 million in 2008 with a -5 percent growth rate used to capitalize the cost in the terminal year.

Beyond this power cost adjustment that is applicable to a public or private USEC, there is a second issue with respect to power prices. USEC management has stated that a public USEC may not be able to negotiate electricity prices that are as low as a private USEC. Any such differences would have to be added to the electricity cost for a public USEC. For this analysis we assume any difference due to price negotiation is negligible.

Marketing

A private firm typically has stronger incentives to improve marketing and client service. USEC's management has estimated that a public USEC would face reduced sales volume from new customer contracts of at least 10 percent. Thus, we have adjusted the new sales volume downward by 10 percent in order to derive cash flows for a public USEC.

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Summary of Quantification

Ernst & Young LLP was engaged to recommend a methodology for calculating the NPV of USEC in the public sector and makes no representation regarding the present value results of these recommendations. Ernst & Young has not performed a valuation of USEC assuming government ownership. These figures are range estimates based on information supplied by USEC management and quantified by J.P. Morgan.

The table below summarizes the results of the NPV calculation for USEC assuming it remains in the government. [Notes explaining each entry appear below.] The result is approximately \$1.1 billion for discount rates ranging from 11 percent to 13 percent. If USEC's cash in the Treasury is added, the resulting figure is approximately \$2.3 billion.

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	NPV Calculation for Various Nominal Discount Rates		
	<u>11%</u>	<u>12%</u>	<u>13%</u>
GDP-Only Base Case ¹ (No Federal Taxes)	2,216	2,112	2,018
Capital Expenditures for Plant Refurbishment ²	(459)	(420)	(385)
Electricity Cost ³	(600)	(520)	(450)
Reduction in Sales due to less Marketing ⁴	<u>(50)</u>	<u>(47)</u>	<u>(45)</u>
Public USEC NPV calculation before adjustment for procurement costs and cash in Treasury ⁵	1,107	1,125	1,138
5% increase in capital expenditures and material expenses due to U.S. government procurement regulations ⁶	<u>(28)</u>	<u>(27)</u>	<u>(25)</u>
Public USEC NPV calculation before cash held in Treasury ⁷	1,079	1,098	1,113
USEC Cash in Treasury ⁸	<u>1,200</u>	<u>1,200</u>	<u>1,200</u>
Public USEC NPV calculation including Cash ⁹	<u>2,279</u>	<u>2,298</u>	<u>2,313</u>

- less maintenance expenses
- assumes cash at end.

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Notes on Cash Flows for NPV Calculation:

*Present value of GDP-only Base Case (No Federal Taxes): Free cash flow based on USEC base case assumptions with no AVLIS deployment as quantified by J.P. Morgan in their report dated April, 1995 except USEC pays only 6 percent state taxes beginning in 1998 and no Federal Taxes. The resulting free cash flows for discounting (in \$ millions) are:

1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
380	385	453	348	230	240	299	229	180	171	166	144	151

*Present value of refurbishing one enrichment plant: USEC management expects total plant refurbishment to cost \$890 million in 1995 dollars; however, the expenditures would occur in the 9 years from 2001 to 2009. To calculate the present value we assume the expenditure occurs uniformly at a rate of \$99 million per year and discount these cash flows (assuming 4 percent expected inflation) at real discount rates of 7, 8 and 9 percent.

*The GDP-only base case was refined to reflect higher electricity costs that USEC (public or private) expects to face after 2005. The projected increases are:

1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 & on
0	0	0	0	0	0	0	0	0	199	207	208	217

The present value of these cash outflows is calculated using nominal discount rates of 11, 12, and 13 percent with a -5 percent growth rate used to capitalize the outflow in the terminal year.

*Reduction in sales due to decreased marketing: the present value of the impact on cash flows for a 10 percent reduction in sales volumes from new customer contracts. The value of \$50 million at an 11 percent discount rate is as quantified by J.P. Morgan for discussion on October 2, 1995. The values of \$47 and \$45 million for 12 percent and 13 percent discount rates are Ernst & Young quantification estimates.

*Sum of 1 through 4.

*Present value of adjustment increasing plant and equipment maintenance expense and capital expenditure by 5 percent to capture the effect of U.S. government procurement regulations. The sum of the material, service and other expense item and the net capital expenditures item from the GDP-base case are (\$ millions):

1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
91	95	98	101	104	53	55	57	59	61	63	65	68

This total increased by 5 percent and rounded is (\$ millions):

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1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
96	100	103	106	109	56	58	60	62	64	66	68	71

The present value of the difference of these two cash outflow streams is calculated at discount rates of 11, 12 and 13 percent.

*5+6

*Cash expected to be held at Treasury as of January 1, 1996 per USEC management.

*7+8

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APPENDIX A:
**Government Discount Rate Policies and Use of Private Market-based
Discount Rates**

Several Government entities have policies on the use of discount rates in the analysis of possible asset sales.

OMB Circular No A-94 Transmittal Memo No. 64 as revised October 29, 1992:

- Real discount rates should be used for constant dollar benefits and costs.
- Nominal discount rates should be used to discount nominal benefits and costs.
- Analysis of possible assets sales should calculate the net present value to the Federal Government of holding an asset by discounting its future earnings stream using a Treasury rate. However, asset values are to be reduced by "the cost of expected defaults, or delays in payment from projected cash flows, along with Government administrative costs", and are to "consider explicitly the probabilities of event that would cause the asset to become nonfunctional, impaired or obsolete, as well as probabilities of events that would increase value".
- When there is evidence that Government assets can be used more efficiently in the private sector, valuation analyses for these assets should include sensitivity comparisons that discount the returns from such assets with the rate of interest earned by assets of similar riskness in the private sector.
- In general, variations in the discount rate are not the appropriate method of adjusting net present value for the special risks of particular projects. In some cases, it may be possible to estimate certainty-equivalents which involve adjusting uncertain expected values to account for risk.
- According to GAO/OCE 17-1-1 For asset divestitures, OMB has endorsed the use of market interest rates for comparable private sector ventures to determine the value of the asset to the government. The DOE also has used private sector rates for divestiture analysis, for example, the government's value for the Great Plains Coal Gasification Project and the naval petroleum reserves.

GAO/OCE 17.1.1 Discount Rate Policy:

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- The shadow price of capital approach to discounting which, while not recommended here for base case GAO analysis, has important support in terms of economic theory. Shadow price of capital is the present value of the social returns to capital (before corporate income taxes) measured in units of consumption.
- GAO's base case discount rate should be the interest rate for marketable Treasury debt with maturity comparable to the program being evaluated. Sensitivity analysis should be used to address issues such as differing expectations about inflation and interest rates, private sector opportunity costs, and intergenerational effects of policies on human life.
- Match nominal cash flows with nominal discount rates and use real discount rates for real cash flows. Analysts can subtract a projected inflation rate from the nominal rate to calculate a real discount rate.
- Private sector discount rates should be considered in the case of asset divestitures. Because Treasury interest rates are below those of the private sector, their use generally will yield a greater present value of future returns from an asset than would a higher private sector rate. Consequently, financial analysis could imply that government-ownership is preferable to private ownership even when there are no real efficiency gains from government-ownership. Therefore, in addition to considering private sector interest rates as part of the analysis, analysts should note that considerations other than the government's financial position -- such as views about the proper roles for the public and private sectors -- can be relevant for asset ownership decisions.

CBO Policy as discussed in GAO/OCCE 17.1.1 Discount Rate Policy:

CBO policy is that the discount rate for most analyses should be based on the real yield of Treasury debt.

Agencies' Use of Risk-Adjusted Discount Rates

The OMB, CBO, and GAO have in certain instances used risk-adjusted discount rates.³⁶

³⁶ U.S. Government Use or Acceptance of Asset Valuation Based on Discount Rates Other than the Federal Borrowing Rate, Willkie, Farr, & Gallagher October 9, 1995

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- Base Realignment and Closure Analysis (BRAC) were carried out in 1991, 1993, 1995. The OMB used market-based discount rates in 1991 and 1993, but changed to an approach tied to the U.S. Treasury's borrowing rate in 1995.
- In 1986 the CBO prepared a more than \$3 billion valuation of Conrail that used a real discount rate of 2 percent. The private investment community rejected the CBO valuation at the time it was published, in part criticizing CBO's assumptions, including discount rate. Congress and DOT also rejected this calculation. In the final Conrail privatization act there was no minimum price requirement rather a "goal" of \$2 billion from all sources. Goldman Sachs had calculated that Conrail was worth around \$1 billion using market discount rates (no detailed calculation is available). The final sale proceeds along with \$300 million in cash paid by Conrail, produced proceeds of about \$1.9 billion.
- The RTC has "established a process designed to identify realistic discount rates in a manner consistent with approaches in the private sector". Issue of discount rates has arisen more specifically in the context of GAO review of RTC asset securitization activities. GAO noted that if a government discount rate is used, retaining loans appears to provide the government with a better return than selling them. Despite this conflict, RTC has sold \$20 billion of securitized mortgages as part of its resolution activities. They have in essence rejected the idea that a federal discount rate calculation requires them to retain loans when RTC has a statutory responsibility to timely resolve insolvent thrifts.
- Committee testimony and pending Naval Petroleum Reserve sale legislation accept the idea of a market discount rate, as opposed to a Government discount rate, as the basis for a net present value calculation.

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Appendix B

The UK's Announcement on Required Rates of Return and Discount Rates in the Public Sector, April 1989³⁷

An announcement was made by the then Chief Secretary to the Treasury, in answer to a Parliamentary Question on 5 April 1989, as follows:

Mr Boswell: To ask the Chancellor of the Exchequer if he will make a statement on the rate of return required on new investment in the nationalised industries and the discount rate used for appraising investment in other parts of the public sector:

Mr Major: The Government have reviewed the level and use of discount rates in the public sector. These were last reviewed in 1978. Since then the rate of return in the private sector has risen to around 11 per cent.

In light of this, the Government have decided to raise the required rate of return for nationalised industries and public sector trading organisations from 5 per cent to 8 per cent in real terms before tax. The new required rate of return of 8 per cent will be an important factor in setting new financial targets but there will be no impact on pricing during the life of existing financial targets.

As at present, the choice of the discount rate to appraise individual projects is a matter for individual nationalised industries or trading bodies to decide in consultation with sponsor departments and the Treasury. The Government's main concern will continue to be that the industries approach should be compatible with achieving the required rate of return on the programme as a whole. In appraising whether or not new capital investment projects should be undertaken, proper attention will need to be paid to risk. The effect of full allowance for risk will often be implicitly equivalent to requiring a higher internal rate of return on riskier projects.

The Government have decided that the discount rate to be used in the non-trading part of the public sector should be based on the cost of capital for low risk purposes in the private sector. In current conditions this indicates a rate not less than 6 per cent in real terms. Risk will be analyzed separately and projects (and options) that are more risky will be required to demonstrate correspondingly lower costs or higher benefits.

These proposals will ensure that the appraisal of public projects will be no less demanding in the non-trading sector than in the trading sector, both public and private. In particular, they will provide a comparable basis for the consideration of private participation in public sector activities by taking account of the full economic cost of the public sector option.

³⁷ Speckman, Michael, "Discount Rates and Rates of Return in the Public Sector: Economic Issues", Treasury Working Paper No. 58 January, 1991

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Appendix C

Discussion of and Response to Issues Raised

Department of the Interior's Offshore Oil

CEA has noted that the Department of the Interior faced issues regarding the choice of a discount rate in the public sector when they considered selling a portion of the revenue generated by the lease of offshore oil reserves. Ernst & Young has not had the opportunity to review any written material on this subject, so our discussion is based solely on preliminary discussions with CEA and an incomplete understanding of the issues.

The U.S. Government owns all rights to offshore oil. It is our understanding that the Government leases these rights to private companies who extract the oil. The companies make lease payments to the Government based on a percentage of the cash value of the oil extracted.

As part of the initiative to reinvent government, an inter-agency committee considered selling the cash flows from the lease payments of oil fields that are already developed. They used an NPV methodology to calculate the public sector value of the cash flows using discount rates ranging from the real yield on U.S. Treasury bonds to the 7 percent real rate recommended by OMB. Because the committee believed that the private sector would discount these cash flows at higher rates, they concluded that the private sector value of the cash flows would be less than the public sector value. Consequently, the idea was not pursued any further.

Discussion

- The Government allows the private sector to extract offshore oil and accepts private sector prices in return. This implies that there are no externalities associated with the cash flows from the lease payments.
- The cash flows from the lease payments are the same whether publicly or privately owned.
- The committee implicitly concluded that the lease payments are more valuable to the Government than they are to the private sector because they believed that the Government had more capacity for risk bearing than the private sector.
- As we have discussed in the body of this report, the risk associated with a set of cash flows does not change with a change in ownership unless the new owner:
 - Changes the operations
 - Changes the markets of the business

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- Changes the financing
- Changes the exposure to government regulation or policy

None of the factors above change if the cash flows are sold to the private sector. Therefore, as we understand the situation, the public and private discount rate should be the same. However, we understand that there may have been other issues that the inter-agency committee may have taken into consideration of which we are not aware.

Use of the S&P 500 as the Market Proxy in the CAPM

There has been some concern that the S&P 500 may not be the best indicator of market return for estimating the discount rate for a publicly owned USEC.

In general, the S&P 500 is used as a measure of total market return for practical reasons. It is a widely and readily available market index that many practitioners believe is closely correlated with a theoretically proper measure of market return.

In theory the market return component of the CAPM should include returns on all capital including:

- physical capital
- real estate
- human capital

Unfortunately, there are no readily available indices that include all forms of capital. Although there are some studies which attempt to measure the return on investment in human capital, there are no observable markets for human capital. Furthermore, the general real estate market is fairly illiquid.

- Many of the attempts in the financial economics literature to use broader measures than the S&P 500 or the Wilshire 5000 have found little effect on the risk-adjusted returns.
- There are severe measurement problems with the construction of broader indices.

It has been suggested that GDI be used as the market index. GDP is not appropriate for the following reasons:

- GDI is a measure of the flow of economic activity not a measure of return on invested capital. What ought to be measured is the change in the capitalized value of GDI which, to our knowledge, is not available

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- GDP flows also incorporate book values, not market value conventions, for depreciation and the capital cost adjustment.
- GDP does not incorporate fully the expectations of future economic conditions.

Regardless of which index is selected as a proxy for the return on all marketable capital, the same index should be used to estimate the beta for both a public or private USEC.

Demonstration Effects

The CEA believes that the behavior of USEC's competition might change or that individual competitors might be privatized if USEC is privatized and that these changes might affect the value of a privately owned USEC.

In certain cases of an oligopolistic industry where the actions and reactions of the constituent firms depend on each other, there may be an effect on the industry dynamics due to the privatization of one firm. However, we have seen no evidence to suggest that USEC's competitors would change their business strategies, including the decision to privatize, in a way that would significantly change a private USEC's profits solely in response to USEC's privatization. Although other governments may react to the privatization of USEC, clearly there are many other factors that determine how government operate their uranium enrichment companies and make privatization decisions. These factors are likely to be more important than whether or not USEC privatizes.

Real Option Value to the U.S. Government of Waiting to Privatize USEC

CHA has suggested valuing the Government's option to delay privatization of USEC. It is beyond our current scope of work to address in detail the topic of real option pricing, but we offer the following observations on its relevance to the proposed privatization of USEC.

- A real option to postpone a decision may have value if there exist uncertainties about future states of the world and if the decision is irreversible or costly to reverse.
- In the case of USEC, the Government's option to postpone privatization has value only if it is possible to envision a future state in which the Government would not want to privatize. Even if such a state is identified, if the probability of reaching that state is small, then the value of the option is small.
- If it can be demonstrated that there is value in waiting, any cost of waiting due to forgone expected private sector efficiency gains must be considered.

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We have not been made aware of a future state where information is expected to be revealed that would change the relative values of a publicly owned versus a privately owned USFC. We believe that in most cases the public and private values are correlated so any new information that significantly affects the value in the public sector is likely to affect the value in the private sector in a like manner.

Table One

(DRAFT FOR DISCUSSION PURPOSES ONLY)

Privatisation Costs

		Paid by HM Government (£'000,000)			Estimated total costs	
		Underwriting	Other fees/ Commission	Advertising	£'000,000	% Proceeds
British Petroleum	1979	4	2	n/a	7	2.4
Cable and Wireless	1981	4	1	n/a	7	3.1
British Aerospace	1981	2	2	n/a	6 ²	4.0
Amersham	1982	1	1	n/a	3 ¹	4.2
Britoil	1982	9	3	n/a	14 ⁴	3.1
AB Ports	1983	1	1	n/a	3	5.4
British Petroleum	1983	7	3	n/a	10	1.8
Cable and Wireless	1983	4	1	n/a	5	1.8
ABP	1984	1	1	n/a	1	1.9
Enterprise Oil	1984	6	3	n/a	11	2.8
BT	1984	84	14	10	152 ⁴	3.9
Jaguar	1984	5	n/a	n/a	6	2.0
British Aerospace	1985	6	3	2	18	3.3
Britoil	1985	7	1	3	15	3.3

- 1 Excludes £35 million subscribed by the government for new shares.
- 2 Excludes £100 million capital injection and £55 million PDC dividends foregone by the Government.
- 3 Includes Stamp Duty (£0.86 million).
- 4 Excludes costs of employees, free shares and discounts, bonus shares and vouchers. Britoil 1982 £3 million, see table.
- 5 Underwriting costs exclude amounts for shares offered by the company in BAe 1985 (approx... £3 million) and in Cable and Wireless (approx... £8 million) which were paid by the company.

Source: National Office reports, House of Commons written answers

Table One (cont.)**Privatisation Costs (cont.)**

		Paid by HM Government (£'000,000)			Estimated total costs	
		Underwriting	Other fees/ Commission	Advertising	£'000,000	% Proceeds
Cable and Wireless	1985	7	3	2	n/a	n/a
British Gas	1986	70	10	21	175 ⁴	3.2
British Airways	1987	10	3	6	30 ⁴	3.3
Rolls Royce	1987	11	n/a	2	29 ⁴	2.1
BAA	1987	14	n/a	5	41 ⁴	3.4
British Petroleum	1987	73	n/a	18	114	2.0
British Steel	1988	21	n/a	12	46 ⁴	1.9
Water Companies	1989	33	n/a	36	131 ⁴	2.5
Regional Electricity	1990	37	n/a	15	168 ⁴	1.4
National Power/Power Gen	1991	15	n/a	7	79 ⁴	3.6
Scottish Power/ Hydro-Electric	1991	21	n/a	6	88 ⁴	2.5
BT	1991	0	n/a	n/a	107 ⁴	2.0

- 1 Excludes £35 million subscribed by the government for new shares.
- 2 Excludes £100 million capital injection and £55 million PDC dividends foregone by the Government.
- 3 Includes Stamp Duty (£0.86 million).
- 4 Excludes costs of employees, free shares and discounts, bonus shares and vouchers Britoil 1982 £3 million, see table
- 5 Underwriting costs exclude amounts for shares offered by the company in BAe 1985 (approx. £3 million) and in Cable and Wireless (approx. £8 million) which were paid by the company.

Source: National Office reports, House of Commons written answers

(DRAFT FOR DISCUSSION PURPOSES ONLY)

Table Two

	British Telecom 1984	British Gas	British Airways	RoRo-Royce	BAA	British Steel	Water Companies	Regional Electricity	National Power/PowerGen	Scottish Power/Hydro	British Telecom 1991
UK offer											
U/W - placing subscriptions	74	60	8	13	14	21	33	37	15	21	0
Selling commissions	13	9	3	4	4	2	7	10	3	4	27.5
Clearing bank costs	20	45	8	11	13	4	26	92	34	29	34.5
Marketing (incl. advertising)	14	40	6	4	10	12	36	15	7	6	34.5
Advisers fees	6	5	4	2	2	6	26	29	17	20	6.5
Overseas offer	10	23	5	-	-	3	16	19	8	9	5.0
Share Stops											2.5
	159	182	34	34	43	48	144	202	81	89	110.5
Less											
Paid by company	(1)	-	-	-	-	-	-	-	-	-	-
Interest on application money	(4)	(7)	(4)	(5)	(2)	(2)	(13)	(34)	(5)	(1)	(3)
	152	175	30	29	41	46	131	168	79	88	107
% of proceeds	3.9	3.2	3.3	2.1	3.4	1.9	2.5	1.4	3.6	2.5	2.0
Add (maximum) incentive costs											
B/E vouchers	23	63	-	-	-	-	-	23	-	10	-
Bonus shares	88	122 ²	13	-	54	-	1	38	41	53	123
Employee free shares/discounts	53	37	15	14	3	18	15	51	24	15	69.5
	316	397	58	43	98	64	146	280	144	162	300

1 Excludes costs of bonus share issues and discounts or second and third call on customer incentives estimated at £70 million, as these costs will be offset against the premium on the receipt of sales of shares retained initially for bonus issue but no longer required.

2 Of which £25 million recovered from sale of unclaimed bonus shares

Source: National Audit Office Reports



DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

NCC to TREC
8/1/96 (reading)
Barnett

INFORM

MEMORANDUM FOR SECRETARY RUBIN

FROM: Mozelle W. Thompson *MW*
Principal Deputy Assistant Secretary
(Government Financial Policy)

Erika M. Irish *EMI*
Senior Policy Analyst
Domestic Finance

Please
distribute
to LS
J3N
SMAT
SD

Thanks - VC

DATE: August 1, 1996

SUBJECT: United States Enrichment Corporation Privatization
Update

ACTION FORCING EVENT

The USEC privatization is will be an agenda item at today's NEC weekly meeting.

BACKGROUND

Process

Based on the work of the NSC and NEC agencies described below, the participants at the July 19th NEC deputies meeting decided that it was appropriate for the NEC to prepare a memorandum to the President seeking approval of a USEC Privatization Plan. The NEC working group currently contemplates that such draft will include:

- revisions to the original USEC Privatization Plan that was prepared in June 1995,
- a brief discussion of the agencies current findings regarding pertinent statutory tests, and
- a recommendation that Treasury act as lead agency in coordinating and implementing the USEC privatization. (The role is consistent with Treasury's present position as sole shareholder and its statutory role under the USEC Privatization Act of 1996.)

Once (if) the President approves the transaction, Treasury will participate in all aspects of the privatization process, and Secretary will have final approval rights on the specific terms of any sale prior to consummation.

It is worth noting that the assumptions and values in the Ernst and Young report are only relevant in calculating USEC's NPV "in the government" for the purpose of satisfying the statutory NPV test. However, we do not view this number to be the minimum acceptable sales price, and we expect the sales price to be significantly higher.

Transaction Related Issues

We are currently preparing to solicit proposals from investment banks in order to retain a financial advisor to advise the Treasury on all privatization issues.

cc: Deputy Secretary Summers
Under Secretary Hawke

1996-SE-009727



GENERAL COUNSEL

DEPARTMENT OF THE TREASURY
WASHINGTON

September 25, 1996

MEMORANDUM FOR THE SECRETARY

FROM: EDWARD S. KNIGHT *Ed*
SUBJECT: Response to Questions on Weekly Report

Regarding your questions on our weekly report for the week of September 9, 1996:

(1) The Executive order to facilitate collection of delinquent child support obligations is expected to be issued tomorrow afternoon, Thursday the 26th of September, in advance of the President's weekly Saturday morning radio address.

(2) Please find attached a memorandum I prepared for you on August 19, 1996 regarding the significant legal issues raised by the USEC privatization.

Please let me know if you need further briefings on either subject.

Attachment



DEPARTMENT OF THE TREASURY
WASHINGTON

GENERAL COUNSEL

August 19, 1996

MEMORANDUM FOR ROBERT E. RUBIN
SECRETARY OF THE TREASURY

LAWRENCE H. SUMMERS
DEPUTY SECRETARY OF THE TREASURY

JOHN D. HAWKE, JR.
UNDER SECRETARY FOR DOMESTIC FINANCE

MOZELLE W. THOMPSON
PRINCIPAL DEPUTY ASSISTANT SECRETARY
(GOVERNMENT FINANCIAL POLICY)

FROM:

EDWARD S. KNIGHT *Edward S. Knight*
GENERAL COUNSEL

SUBJECT:

Significant Legal Issues Raised by the United States Enrichment Corporation (USEC) Privatization

In order to stimulate discussion and to convey our preliminary thoughts regarding the USEC privatization, I am providing you with a brief overview of the significant legal issues that Treasury will face in the USEC privatization. In preparation for a potential USEC privatization action, my office has been actively engaged on USEC privatization issues since January 1993. During this phase, we have worked closely with Domestic Finance, met with USEC's in-house and outside counsel, and met with the Securities and Exchange Commission's General Counsel. In addition, we have contacted the Department of Energy's General Counsel to discuss the USEC privatization.

I. Background

Briefly, the following facts are significant to Treasury's interest at this stage of the USEC privatization:

- **TREASURY IS THE SOLE STOCKHOLDER OF USEC.** Treasury holds all of the USEC stock for the United States, except:
 - all the rights and duties pertaining to the management of the USEC are vested in the USEC Board.
 - Treasury may not sell, transfer, or convey USEC stock except to carry out a privatization plan.
- **UNIQUE ROLE OF THE PRESIDENT.** Presidential approval is required before the USEC Board may implement any privatization plan.

● **TREASURY HAS A SIGNIFICANT ROLE IN USEC PRIVATIZATION.**

- Based on certain statutory requirements,¹ the USEC Board, with the approval of Treasury, shall approve the method of privatization (M&A vs. IPO) and the terms and conditions for the transfer.
- The USEC Board, with the approval of Treasury, shall transfer USEC's assets and obligations to a private corporation.
- Based on certain statutory requirements,² the USEC Board, with the approval of Treasury, shall transfer the interest of the United States in the USEC to the private sector.
- Treasury shall not approve the USEC privatization unless before the sale date Treasury determines that the method of transfer will provide the maximum proceeds to the Treasury consistent with the four statutory requirements listed in footnote 2.

● **POTENTIAL LIABILITY OF THE TREASURY OR TREASURY OFFICIALS IN CONNECTION WITH THE USEC PRIVATIZATION**

- No right of action against the United States, its

¹ The requirements are that the method of transfer and terms and conditions for the transfer will provide--(i) the maximum proceeds to the Treasury of the United States; (ii) for the long-term viability of the private corporation; (iii) for the continued operation of the gaseous diffusion plants; and (iv) for the public interest in maintaining reliable and economical domestic uranium mining and enrichment industries. (A cautious reading of the statute suggests that these statutory requirements should be considered together with the determinations listed in footnote 3.)

² The requirements are that the interest of the United States in the USEC shall be transferred to the private sector in a manner that provides for--(i) the long-term viability of the private corporation, (ii) the continued operation of the gaseous diffusion plants, (iii) the public interest in maintaining a reliable and economical source of domestic uranium mining, enrichment and conversion services, and (iv) to the extent not inconsistent with such purposes, secures the maximum proceeds to the United States. (A cautious reading of the statute suggests that these statutory requirements should be considered together with the determinations listed in footnote 3.)

agents or officers for claims arising out of privatization actions.

- The statute specifically revokes any stated or implied consent for the United States, or any agent or officer of the United States, to be sued by any person for any legal, equitable, or other relief with respect to any claim arising from any action taken by any agent or officer of the United States in connection with the privatization of USEC.

II. Legal Issues

Briefly, I have identified significant Treasury legal issues at this stage of the USEC privatization as follows:

- **SCRUTINY OF TREASURY.** Although there is no legal liability for USEC privatization actions, Treasury officials will be subject to scrutiny for any USEC privatization actions.
 - Congressional interest in USEC privatization.
- **APPROPRIATE AGENCY.** Subsequent to receiving Presidential approval, USEC must determine, in consultation with appropriate agencies of the United States, that privatization will satisfy certain statutory determinations³ prior to implementing the Privatization Plan.
 - Appropriate Treasury role with respect to these four requirements.
 - NEC has apparently envisioned a significant Treasury role on these four requirements.
 - Statute does not define "implementation" of the Plan.
 - Apply conditions only at beginning of privatization vs. apply conditions throughout privatization process.
 - How to apply the four conditions.
 - Interagency mechanism for coordination.
 - Process for approval by other agencies on statutory

³ USEC must determine, in consultation with appropriate agencies of the United States, that privatization will--(i) result in a return to the United States at least equal to the net present value of USEC; (ii) not result in USEC being owned, controlled or dominated by an alien, a foreign corporation, or a foreign government; (iii) not be inimical to the health and safety of the public or the common defense and security; and (iv) provide reasonable assurance that adequate enrichment capacity will remain available to meet the domestic utility industry.

- requirements.
- Ensuring a complete record of all determinations.
- **STATUTORY CRITERIA FOR TREASURY APPROVAL.**
 - Differences in the statutory criteria for Treasury approval regarding--
 - method of privatization;
 - transferring the interest of the United States to the private sector; and
 - determining that the method of transfer will provide maximum proceeds to the United States.
 - Ensuring a complete record of all determinations.
- **REPRESENTATIONS AND WARRANTIES.** Determination as to whether Treasury should make any representations and warranties in connection with the USEC privatization.

We are currently reviewing a preliminary information package prepared by USEC for the M&A sale process. Many of our comments on this document are contingent on your determination of the appropriate Treasury role in the USEC privatization.

My office is available to assist your offices on these issues as well as any other USEC privatization issues that may arise. It may be useful for all of us to get together and discuss the USEC privatization.

NCC to RER

NCC cc to SMAT
JBN

9/26/96

Please Log In

Handwritten initials: NCC