The Bigger They Are, The Harder They Fall:
An Estimate of the Costs of the Crisis in Corporate Governance

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This study aims to further the public debate and to invite further discussion and research on this topic. The authors welcome further discussion of their results, as well as of alternative approaches for assessing the costs of the corporate scandals.

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Abstract

The two largest bankruptcies in U.S. history, WorldCom in July 2002 and Enron in December 2001, stem from corporate mismanagement, and symbolize the broader crisis in corporate governance. We provide a ballpark estimate of the costs of the crisis, based on estimates of the effects of the crisis on stock market wealth, calibrated according to the Federal Reserve Board's model of the U.S. economy. We estimate that if the S&P 500 Index stays roughly where it was on July 19 – or near 850 – the crisis will lower U.S. GDP in the first year by $35 billion in our base case. For comparative purposes, this is in the range of what the federal government spends per year on homeland security, or a $10 increase in the per barrel price of crude oil.

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The Crisis in Corporate Governance

On July 21, 2002, the telecommunications giant WorldCom filed the largest bankruptcy petition in U.S. history, a petition almost twice the size of the next largest: Enron in December 2001.[2] Both bankruptcies resulted from accounting malpractice, and symbolize the broader crisis in corporate governance – a crisis which involves top blue chip companies, has reached political leaders at the highest levels of government, and has resulted in high levels of volatility in U.S. stock markets. In this brief we provide a ballpark estimate of the costs to the economy - which range from $37 to $42 billion off GDP in the first year – assuming the market does not recover from its July 19 level or drop substantially below it.

The collapse of Enron was a shock when it was announced early this year, both because of the size of the enterprise and, more importantly, because its underlying cause was corrupt corporate management. Yet at the time it seemed an isolated, if unfortunate and costly event. Several months down the road, Enron symbolizes the opening of a deep and dark Pandora's box, the end of which seems nowhere in sight. Since then, a surprising number of blue-chip companies, including WorldCom, Xerox, and Bristol-Myers Squibb, which for years were part and parcel of all that symbolized the seemingly endless expansion of the U.S. economy, have joined the unenviable ranks of those with scandals based in fraudulent corporate management and accounting practices.

While Enron in isolation had a limited effect on the stock market, the combined effect of the subsequent scandals has driven the market into a downward tailspin, which seems impervious to the recent speeches by President Bush and Federal Reserve Chairman Greenspan and the unanimous passage in the Senate of accounting and corporate governance reform legislation. After falling steadily and sharply the preceding weeks, the Dow Jones Industrial Average (DJIA) plunged 440 points on July 15 and then recovered to close down 45 points, or 0.5% by the end of the day, closing at 8,639, far from its 10,635 peak in March 2002. The same day the dollar fell below parity with the Euro – with the Euro trading at $1.0055 - for the first time since the currency was issued, amidst increasing skepticism among foreign investors about U.S. markets.

Part of the problem stems from the public perception that the scandal is situated at the center rather than the periphery of the system. It hinges on companies misreporting their earnings, skewing the price-earnings ratio, a measure which is at the core of most decisions investors make about where and when to invest. It has also reached actors at the highest levels of the political system. Not surprisingly, all of this has taken its toll on markets at home and abroad, and at the same time has reduced the relative advantages for investors worldwide of holding stock in U.S. companies.

While much of the public debate on corporate governance has focused on the inadequacy of accounting rules and their enforcement, there so far has been little study of the economic costs of the scandals. In this brief we attempt to fill this void. This is particularly important at a juncture in U.S. economic history when almost 50% of U.S. households own some form of stock,

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[2] WorldCom, which is unable to service its $30 billion in debt on assets of $107 billion, will draw a $2 billion line of credit to keep its operations up and running in the next months. See Stern, Christopher and Carrie Johnson, "WorldCom Files Record Bankruptcy Case," *The Washington Post*, July 22, 2002, p.A1.

as opposed to 37% in 1992 and 19% in 1962.[3] Stock market wealth currently accounts for roughly one-third of household net worth.[4] In addition, an increasing number of Americans rely on the stock market as a place to invest their retirement funds. While only 5% of retirement funds were placed in mutual funds in 1990, 21% of them were so invested in 2001. Mutual fund shares of 401(k) assets, meanwhile, were 44% of the total in 2001, compared to just 9% in 1990.[5]

What are the implications of the crisis in governance for American consumers and for the U.S. economy more generally? What will it take to restore confidence in the markets when the shock is based in a lack of credibility of a critical measure of corporate performance and in the practices of the highest level political actors? What are the implications beyond our borders at a time when the U.S. economy plays such a pivotal role in international economic trends? In what follows, we attempt to provide at least rough answers to these questions.

The Crisis: How High Is The Cost?

A systematic measure of the economic costs of the crisis would require a complex analysis of the interaction of the effects of the drops in the stock market with a host of macroeconomic variables, as well as with actual and anticipated fiscal and monetary measures. Such an analysis would be based on a large number of assumptions about future events and policy, which are, at this juncture, difficult to predict. For the purposes of this brief, we opt for a simpler gauge of the costs of the crisis based solely on recent trends in the stock market.

We begin by looking at the drop in the market's value since its March 2002 peak. The Dow Jones has dropped by 25% since its peak on March 19, and almost 14% since the close of the market on June 24, when a brief rally was interrupted by the news of Worldcom's $3.9 billion earnings restatement. The Standard and Poor 500 index, which we use for our calculations as it is broader than the Dow, has lost a bit more: nearly 28% and 15%, respectively since its peak at 1170.[6, 7] In the absence of other obvious causes of stock market decline – such as oil embargoes or the threat of an interest rate increase – we believe that part of the drop in the stock market's value since March can be attributed to the accounting crisis. We divide the period since the market peak in March into pre- and post-WorldCom stages, since the collapse of WorldCom sparked off a broader crisis. Under alternate assumptions about the proportions of the drop in stock market value attributable to the corporate scandals, we obtain a base case and low and high estimates of the loss in stock market wealth.

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[3] Poterba, James M. and Andrew A. Samwick, "Stock Ownership Patterns, Stock Market Fluctuations, and Consumption," *Brookings Papers on Economic Activity* 2 (1995): 295-372, and Kennickel, Arthur B., Martha Starr-McCluer, and Brian J. Surette, "Recent Changes in US Family Finances: Results from the 1998 Survey of Consumer Finances," *Federal Reserve Bulletin* 86 (January 2000): 1-29.

[4] Reifschneider, David, Robert Tetlow and John Williams, "Aggregate Disturbances, Monetary Policy, and the Macroeconomy: The FRB/US Perspective," *Federal Reserve Bulletin*, January 1999.

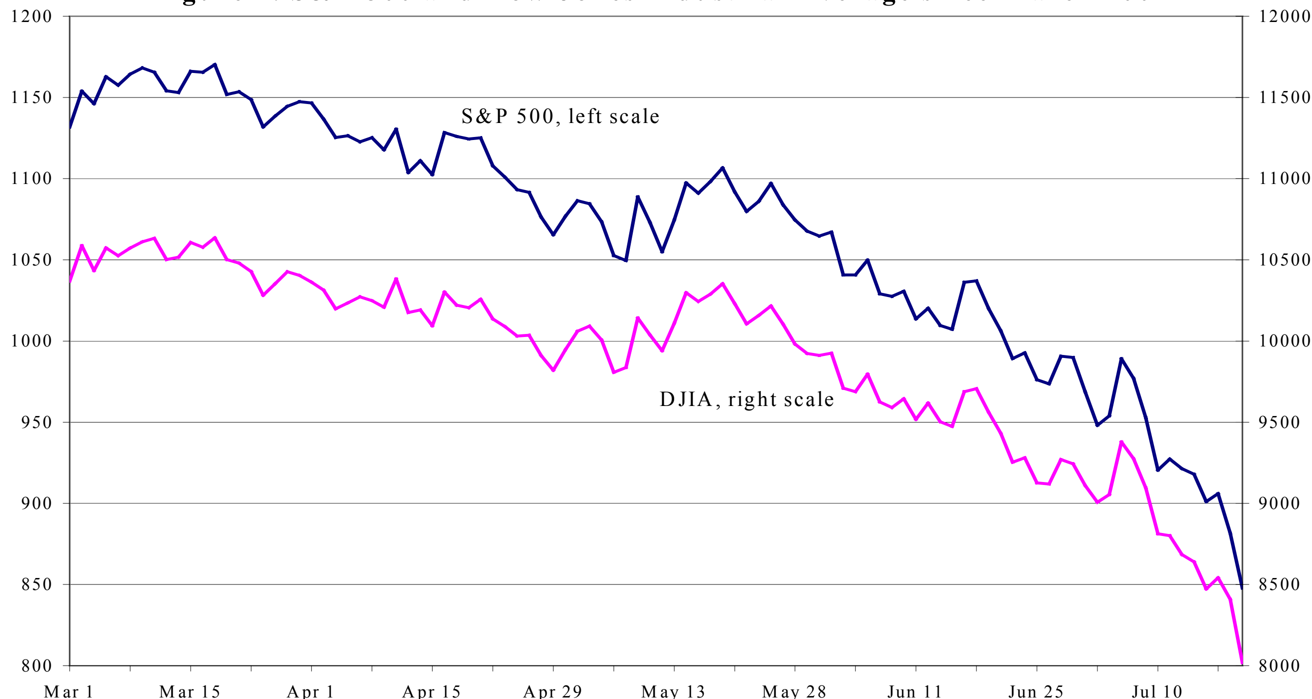
[5] "Mutual Funds and the U.S. Retirement Market in 2001," *Fundamentals: Investment Company Institute Research in Brief*, Vol.11, No.2, June 2002.

[6] All data on the S&P 500 and the Dow Jones Industrial Average from their websites, respectively http://www.spglobal.com/indexmain500_data.html and http://www.djindexes.com/jsp/industrialAverages.jsp.

[7] An even broader index, the Wilshire 5000 Index, which tries to capture all publicly traded companies in the United States, shows that the market lost $7 trillion dollars from its peak on March 24, 2000 to July 18, 2002. See Feaster, Seth W., "The Incredible Shrinking Stock Market," *The New York Times*, July 21, 2002.

Table 1: Loss in stock market wealth, %

Base case, 50% of 3/19-6/24 drop and 75% of 6/24-present drop	16.9
Low proportion of drop attributed to scandal (25%, 50%)	10.0
High proportion of drop attributed to scandal (75%, 100%)	23.8



Declines in the value of stocks can adversely affect the economy in at least two ways. One is through the so-called "wealth effect" on consumption. As consumers feel poorer, they are likely to spend less. The second channel is through the impact of falling stock prices on the "equity premium" and thus on the cost of capital. Other things equal, a lower stock market – especially one that is associated with more volatility – should drive up the cost of equity capital, and thus diminish investment.[8] Similarly, investment can be dampened to the extent firms expect lower consumption and more uncertainty, both of which can and are likely to be associated with a drop in stock prices.

Translating changes in stock market wealth to effects on consumer expenditures is the subject of much debate among economists. An important issue, for example, is distinguishing the market's causal effect on consumer spending from its role as an indicator of future economic activity. While there is disagreement on how much of a causal effect there is, most analysts believe that there is at least some "wealth effect," although we also acknowledge that there is considerable uncertainty about its magnitude and timing.[9] Recognizing this uncertainty, we nonetheless adopt here the estimate used by the Federal Reserve Board, which suggests that over a period of 12 months an extra dollar of stock market wealth increases spending an average of 3

[8] While there may also be longer term supply-side disturbances – those which affect prices or production – related to the collapse of several major large companies, these are difficult to measure at this point and we do not include them in our analysis. For a description of these, see "Aggregate Disturbances," op cit. (1999).

[9] See Poterba and Samwick (1995).

and a half cents.[10] The Fed model assumes that investment would fall 0.8% per year in response to a 20% decline in stock market wealth.[11]

Using our calculated base-case decline in stock market wealth that can be attributed to Enron and subsequent accounting episodes, the Fed's model suggests that *if stocks stay down at their July 19 levels and without offsetting fiscal or monetary stimulus*, GDP would be reduced (because of a drop in both consumption and investment) by 0.34% (roughly $35 billion) over a one year period. This estimate is bracketed by a GDP loss of 0.2% to nearly 0.5%, depending on what one assumes about the contribution of the recent crisis to the decline in stocks (see Table 2). Of course, should the market turn around – and eventually it should and will – these adverse effects will be reversed. But for now, the estimates suggest that the cumulative impact of the scandals on GDP is significant.

Table 2: First-year drop in GDP, % and $ billion*

	% of GDP	$ billion
Base case, 50% of 3/19-6/24 drop and 75% of 6/24-present drop	-0.34	-35.4
Low proportion of drop attributed to scandal (25%, 50%)	-0.20	-21.0
High proportion of drop attributed to scandal (75%, 100%)	-0.48	-49.9

*Calculated based on the authors' assumptions about stock market trends on the basis of the Fed's FRB/US model.

Another way to gauge the impact of the scandals is to estimate what would have happened to stocks had the accounting scandals not occurred. Of course, making projections about the market is a hazardous exercise under the best of circumstances. Nonetheless, it is useful to look at credible projections about the market before the accounting scandals as a way of checking the estimates based only on the actual stock price drop over the past three months.

In fact, credible predictions of stock market trends made in January 2002, pre-Enron, and June 2002, pre-WorldCom, were already anticipating a sluggish market, but not the impact of the accounting scandal. At the start of this year, USA Today conducted a poll of Wall Street investment strategists from leading securities firms such as Merrill Lynch and CSFB to learn their forecasts of the S&P 500. On January 2, 2002, one would have expected these analysts to factor in the effects of September 11, the economic recovery, and the Enron bankruptcy case into their forecasts, while not knowing about the full extent of the accounting scandal as the Arthur Andersen shredding news had not broken. Adjusting for the fact that these predictions were for the full year and we are at in mid-July, the average prediction for the value of the S&P 500 was 1216, a 6% increase from the 2001 year-end value of 1148. The July 19 close of 848 was 368 points or 30% lower than the mean prediction. Under low, base-case, and high assumptions about the proportion of the difference between the pre-scandal predictions and the actual trends attributable to the scandals, we obtain estimates of the loss in stock market wealth to be 9%, 18%

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[10] "Aggregate Disturbances," op cit. (1999). At this point, we are assuming that this effect is linear in nature. In other words, it does not increase or fall with the magnitude of the drop in stock market wealth. We think this is a plausible assumption while the market drops are in the range of the 20% drop that the Fed model uses to calculate the overall effects on GDP. If the market drops much further, however, the effects might become non-linear in nature: in other words, consumers might cut back even more as their overall wealth is reduced further, as long as they have the margin to cut back. (Most owners of stock market wealth have more of a margin to cut back than lower income consumers.)

[11] This assumption, which is based on a single equation, does not account for adjustment costs and other feedback effects. The overall model that calculates the combined effects of all the variables on GDP does take these costs and effects into account.

and 27% respectively. Applying these numbers to the Fed's model, the scandal-related costs for the base-case assumption would be 0.36% of GDP– or $38.2 billion in the first year.

In a related exercise, we tried to obtain our own estimates of the market's level in the absence of the scandals utilizing an unrestricted vector auto regression. We used time series data for U.S., British, German, and Japanese GDP, interest rates, and stock market values, relying on a one period lag for all values, to estimate what the second and third quarter stock market value would have been. The difference between the actual and predicted values (the sum of the error terms for the second and third quarters expressed as a percentage change from the first quarter value) for all of our regressions ranged between 15.8 and 17.3%.[12] Given that the lagged period values did not account for the effects of an exogenous shock to the market – e.g. the corporate scandals – the error term serves as a proxy for that shock. Our range of values for the error term is remarkably close to the 16.9% estimate that we use for our initial calculations, as well as the 18% difference between predicted and actual stock market values noted above.

Table 3: First-year effect on GDP using forecasting differences and Fed Model

	Loss in stock market wealth, %	Effect on GDP, %	Corresponding loss in $ billion
Base case, 60% of difference between forecast and actual	18.2	-0.36	38.2
Low proportion of difference attributed to scandal (30%)	9.1	-0.18	19.1
High proportion of difference attributed to scandal (90%)	27.3	-0.55	57.3

The above estimates are based on the drop in the value of the stock market as of July 19. It is impossible to predict what the market will do next, and how long it will stay down. A more pessimistic estimate of the costs of the scandal would assume that the market stays as low as its July 22 close – 820 for the S&P500 – for a prolonged period of time. Using our base-case assumption about the loss in stock market wealth between March 19 and July 22, our estimate for the change in GDP based on actual drops is -.37% or $39.2 billion in the first year, and based on the difference between actual trends and pre-scandal forecasts is -.39% or $41.1 billion. On the other hand more optimistic estimates, assuming the market stays at its July 30 closing values, would be respectively -.27% and -.31% of GDP - $28 and $32.8 billion - in the first year.

Table 4: Optimistic and Pessimistic estimates of stock market value

	Pessimistic, July 22 close			Optimistic, July 30 close		
	% market loss	% drop gdp	$ billion	% market loss	% drop gdp	$ billion
From actual drops	18.7	-0.37	-39.2	13.4	-0.27	-28.0
From forecast differences	19.6	-0.39	-41.1	15.6	-0.31	-32.8

A much "closer to home" way of gauging the impact of the scandals is to measure the impact of the stock market decline not on GDP but on a typical retirement portfolio. Take, for example, a consumer from the Washington metropolitan area with the median income for the region – $66,888 in 2001 – who had chosen an S&P 500 index fund in her company's retirement plan since 1990, and had been contributing 7% of her salary with a 3% employer match. If the retiree had cashed out her 401K plan at the end of 1999, it would have been worth $149,371, with a contribution of $52,166 and a gain of $97,205. In contrast, if the retiree had cashed out on July 1, 2002, her retirement fund would be worth $117, 814, with a contribution of $68,765 and a

[12] Results available from the authors.

gain of only $49,049.[13] While the market will eventually turn around, allowing younger cohorts to recover some of their earnings, the market downturn has the most direct effects for those who are near or at retirement age.

In addition to what the Fed model has already assumed about the effects of the stock market decline on investment, there may be investment-related trends whose origin is independent of the corporate scandals but still have effects on the economy. Investment at present is suffering from what economists at the Goldman Sachs group call the “paradox of corporate thrift,” in which business investment lags behind other activity in the recovery as firms wait to ensure that any new capacity is taken up. Given earlier over-investment, firms today are controlling costs. Goldman forecasts a 6% drop in business investment this year and a modest 5% increase next year.[14] The paradox is that if enough firms cut costs, it can become pervasive enough to undermine the predicted economic expansion. Confidence in predictions of future consumer demand play a role in determining how much companies are willing to invest, and the uncertain environment created by the declining market and the crisis in corporate governance could serve as a negative feedback loop in the process.

Moreover, the corporate governance crisis almost certainly has discouraged foreign investment into the United States, which has manifested itself in, among other things, a decline of the value of the dollar. For example, between March 19 and July 19, the trade-weighted value of the dollar fell by 5.2% percent.[15] The drop in the dollar is not unwelcome, however. Although a lower dollar pushes up the price of imports and domestically produced goods that compete with imports, the underlying rate of inflation has been low, so any crisis-induced inflationary impact is unlikely to induce the Federal Reserve to raise interest rates any time soon (to the contrary, the demand-depressing impact of the crisis may cause the Fed to *lower* interest rates). Furthermore, a lower dollar will encourage foreigners to buy more U.S. exports, which should offset at least some of the negative effects of the crisis on consumption and investment, while bringing down the current account deficit that has soared to more than 4% of GDP.

How Long Will it Take to Restore Confidence?

Our assumptions about the costs of the scandal suggest that the economic price that we will pay will be fairly large and may last for a prolonged period of time. An important question is how long will it take to restore confidence and reverse the downward trend? This is difficult to answer given that we do not yet know the full extent of the scandals. Yet we can use historical evidence to give a ballpark estimate of how long it takes for the market to turn around after major downturns.

An important distinction here is between what we call “V-shaped” stock market downturns, or those that are generated by one-shot steep declines, such as October 1987, October 1989, and September 11, 2001; and those that we call “drip-drip” downturns, which are those which are step-by-step declines over a prolonged period of time, as occurred in the mid-seventies and seems to be occurring now. The historical record since World War II suggests that the latter type of downturns result in much slower stock price recoveries. As the following graph

[13] Estimates by the Greater Washington Board of Trade, cited in the *Washington Post*, July 17, 2002, p.A18.
[14] Sender, Henry, “Data Disconnect: Beleaguered Market Trails Economic Recovery,” *The Wall Street Journal*, July 1, 2002.
[15] From 129.58 to 122.81. Index=100 in July 1997.
http://www.federalreserve.gov/releases/H10/summary/indexb_b.txt

demonstrates, it took an average of 11 weeks for the market to recover (its nominal value) from one day drops like those in October 1987 and 1989 and September 11, but 4 years to recover from the "drip-drip" downturn in the 1970's.

Table 5: Largest 1 day drops in DJIA over the past half century[16]

Date of Drop	% Decline	Weeks to recovery
September 17, 2001	-7.13	4
April 14, 2000	-5.66	2
August 31, 1998	-6.37	2.5
October 27, 1997	-7.18	3.5
October 12, 1989	-6.91	8.5
January 8, 1988	-6.85	7
October 26, 1987	-8.04	1
October 19, 1987	-22.61	66
May 28, 1962	-5.71	1
September 26, 1955	-6.54	10
Average	**-8.30**	**10.6**
Average without 10/19/87	**-6.71**	**4.4**

Table 6: Largest "Drip-Drip" declines in DJIA over the past half century[17]

Date of peak	% Decline	Months to Trough	Years to return to last peak
July 16, 1990	-21.2	3	0.75
Aug 25, 1987	-36.1	2	2
Apr 27, 1981	-24.1	16	1.5
Sep 21, 1976	-26.9	17	4.5
Jan 11, 1973	-45.1	23	9.8
Dec 3, 1968	-35.9	18	3.9
Feb 9, 1966	-25.2	8	6.8
Dec 13, 1961	-27.1	6	1.75
Average	**-30.2**	**11.6**	**3.9**

To be sure, the worst "drip-drip" downturn of the post-War era – the one that began in 1973 – was associated with "stagflation" (high inflation and unemployment) that is not present today. Nonetheless, the current market downturn has unique worrisome characteristics of its own: a fundamental loss in public confidence in both the principal measure of company performance and in corporate – and political – leadership. Indeed, as the table below suggests, the market failed to turn up after two major economic addresses by President Bush, the unanimous Senate approval of the Sarbanes legislation to overhaul the regulation of corporate governance, and, most importantly, an upbeat speech on the economy by Federal Reserve Board Chairman Alan Greenspan. Generally the market turns up prior to economic recoveries, serving as a leading indicator. In this case the recovery that seems to be underway could be slowed by the exogenous effects of the scandal on the market.

[16] Calculated using data from http://www.djindexes.com/jsp/industrialAverages.jsp

[17] Table adapted from Ip, Greg, "Bear or Correction? Wall Street Debates Whether Stock Market Now Has Claws," *Wall Street Journal,* September 3, 1998.

Table 7: The many roads to failure*

Day	Event	Market Reaction
January 22, 2002	Bush speech assails Enron executives who heavily contributed to his campaign	Down 0.73%
January 27, 2002	SEC chair Harvey Pitt announces proposal to require CEO certification of annual report	Down 0.08%
April 24, 2002	House passes weak bill on accounting regulations	Down 0.15%
June 20, 2002	SEC unanimously approves auditor oversight system	Down 1.34%
July 9, 2002 (early)	Bush gives speech on Wall Street outlining proposals to deal with crisis	Down 2.47%
July 9, 2002	Sarbanes bill tightening corporate management and accounting regulations introduced in Senate	Down 3.39%
July 15, 2002 July 16, 2002 (early)	Senate unanimously passes Sarbanes bill Fed Chair Alan Greenspan gives speech to Senate Banking Committee that is upbeat on economy	Down 1.84%

* Market reaction as measured by the change in S&P 500 closing on next trading day, unless the event was "early" that day allowing markets to react sooner.

In short, investors want more than words. They want earnings figures they can trust, as well as evidence that those figures are on their way up.[18] Continued recovery in the economy should produce rising earnings. But restoring confidence in the reported numbers, whatever their true underlying values, is another matter. Investors are likely to take a "wait and see whether they work" attitude toward all of the reforms that have been or are likely to be adopted. How long all this will take is hard to guess, but if the past record on "drip-drip" stock price downturns is any guide, the required period is likely to be at least a year, and perhaps substantially longer than that.

Effects Beyond Our Borders

A final effect of the current crisis in confidence, which is harder to measure and has so far received little public attention, is that on the commitment to market-based economic institutions and reforms elsewhere around the world. One manifestation of the scandals is the downward turn in the stock markets in Europe and Japan.[19] Effects which are more difficult to measure are those in the numerous developing countries around the globe and most notably in our hemisphere that have turned to the market in recent years. The United States, in particular, has for the most part served as a model of an efficient and effective market economy. Until recently, U.S. accounting and other corporate management standards served as a "gold standard" for many developing economies, and our stock market as the "best of breed" example of a developed equity market.

Yet in recent months the turn to the market has also met increasing public frustration in these countries, due to mixed results in some of them and to sharp economic downturns exacerbated by fluctuations in international financial markets – with Argentina being the most extreme case. There is a more general public questioning of the market, of free trade, and of the

[18] For example markets rebounded for the first time in two weeks on July 17th on positive news from Intel, Citigroup, JP Morgan Chase and Ford.
[19] See, for example, "World Markets Continue to Tumble", *The New York Times*, July 24, 2002.

wide scale privatization of pension funds that many countries have undertaken. The wavering U.S. commitment to advancing free trade post-September 11 – the most notable signs being the Presidential decision to protect the steel industry from competition and the passage of a large agricultural subsidy bill by the Congress – has exacerbated the problem.

In a region-wide survey of over 18,000 respondents in Latin America – the Latinobarometro – taken in early 2002, after the exposure of the Enron scandal but prior to the wider scale crisis, only 26% of respondents answered that they were satisfied with how the market economy was working, with the rest of respondents answering negatively. In contrast, in 2000, over 50% of respondents approved of how the market was working. One can only posit what the effects of a broader crisis of confidence in U.S. markets – which include major losses in the assets of retirees – will have on public support for market policies in these countries. In a region that offers alternatives which range from a chaotic Venezuela under Chavez and an ungovernable Argentina to a stable and market-friendly Chile, concerns about voter discontent with markets should not be taken lightly.[20]

More worrisome, these trends are coupled with the recent reality of Argentina defaulting on its sovereign debt and with warnings of a possible default by Brazil, a default which in the end could be driven by lack of confidence in emerging market equities. While in better times, one might argue that the increase in the U.S. equity premium might favor emerging market country stocks – and it might in some cases – the crisis in Argentina and market jitters about Brazil make such a scenario less likely than one of a more general downturn in the markets. Deeper downturns in the developing economies will in the longer run contribute to the costs to our own economy.

Conclusion

The bottom line is that, assuming the market stays down for a prolonged period of time, the crisis in corporate governance is likely to have sizable costs for the economy. For example, a negative impact on GDP of 0.36% translates into an absolute first year loss of $38 billion. By comparison, this is roughly what the federal government is now spending per year on homeland security, or the increase in the cost of oil imports that would result from a 38% or $10 rise in the per barrel price of crude oil.[21] These estimates will be greater if the market drops well below its July 19th levels, or lower if it stays above these levels.

Latest figures released by the Commerce Department show that the economy grew much slower than expected in the second quarter this year. Accounting scandals and tumbling stock prices led to slow consumer spending and sluggish business investment, which in turn caused only a 1.1% growth in GDP, much lower than the 2.2% that Wall Street had forecasted. Our estimates of the costs of the scandals are in fact much more conservative than what these new figures may suggest.[22] While these costs were incurred by wealthy corporate executives, the price will be paid by consumers – for example via losses in their retirement funds. Recognition

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[20] A number of recent articles highlight these concerns. See, for example, Juan Forero, “Still Poor, Latin Americans Push for Open Markets,” *The New York Times*, July 19, 2002.

[21] This figure is based on last year’s total imports of oil. Of course the aggregate effects on the economy of such an increase would be much greater, as the price of domestic oil and other productive inputs would eventually be affected as well. We thank Charlie Schultze for his help with this.

[22] “Economy Grew Only 1.1% 2nd Quarter, Less than Expected,” *New York Times,* July 31, 2002.

of these costs should give impetus to new reforms in accounting and corporate governance, reforms which in turn can restore a sense of security in our stock market so that the costs are short-lived.

Table 8: The bigger they are, the harder they fall…[23]

Mid-October 2001	**Enron** reports $1 billion loss, SEC seeks inquiry of operations by financial officer, Enron stocks fall 20%; US attacks against Afghanistan overshadow early events
Late-November, early December 2001	Merger deal with Dynegy falls through, S&P downgrades Enron stock to "junk" status, Enron files for bankruptcy, Congressional investigations into disaster begin; Stock market worries center around Enron's complex transactions with numerous companies
January 10, 2002	In response to investigations, **Arthur Andersen** discloses it shredded Enron records
Late-January 2002	**Global Crossing** files for bankruptcy, SEC begins investigations of the company's accounting practices; accounting practices at **Kmart** and **Tyco International** also under microscope; First signs of stock market nervousness regarding accounting scandals, but economic recovery fuels rebound
March 14, 2002	Arthur Andersen indicted for obstruction of justice
March 27, 2002	**Adelphia Communications** discloses dubious practice of guaranteeing loans to executives
April 1, 2002	**Xerox** agrees to pay $10 million fine for overstating revenues by $2 billion for several years
May 21, 2002	**Merrill Lynch** settles suit with New York attorney general for stock analysts conflict of interest case
June 3, 2002	Tyco chairman **Dennis Kozlowski** forced to resign on charges of evading taxes, he is indicted the following day
June 12, 2002	**ImClone Systems** ex-CEO **Samuel Waksal** arrested on insider trading charges; **Martha Stewart** also being investigated
June 15, 2002	Andersen convicted by federal jury
June 25, 2002	**WorldCom** discloses improper accounting of $3.8 billion in expenses, fires chief financial officer, SEC announces investigation; Stocks begin large and steady decline
July 8, 2002	**Merck** announces that Medco, a subsidiary, never collected $12.4 billion in revenues as reported
July 10, 2002	Judicial Watch files suit against **Vice President Dick Cheney** for alleged accounting fraud while he headed oil company **Halliburton**
July 10, 2002	**Qwest Communications** reveals that it is under criminal investigation by the Justice Department for allegedly violating accounting rules
July 11, 2002	**Bristol-Myers Squibb** being investigated by SEC for improperly inflated revenues
July 17, 2002	**PricewaterhouseCoopers** announces that it will pay $5 million to settle SEC case for violating independency rules
July 21, 2002	WorldCom files for bankruptcy, the largest such filing in US history

[23] Compiled from http://www.washingtonpost.com/wp-dyn/business/specials/accounting/, http://www.msnbc.com/news/corpscandal_front.asp?0SB=Q712, and "Corporate Conduct: Investors React," *New York Times*, July 17, 2002.