Will Comprehensive Health Care Reform Help or Hurt the Economy? An Empirical Assessment

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Overview

Will comprehensive health care reform significantly affect the rest of the economy? At first blush, it is hard to see how it could not. In 1993, employment in medical services accounted for nearly 10 percent of all jobs in the economy, and over the last decade has risen faster than in almost any other sector. At the same time, medical care price inflation has directly contributed about 0.2 percentage points to inflation annually since 1980. Because the medical services sector is an important part of the economy, any comprehensive reform that changes employment levels in the sector and\or the rate of price growth promises to have economic effects that go well beyond the health sector.

In order to examine the economy-wide effects of reform, we introduced a comprehensive health care reform package -- including universal insurance coverage, cost containment, employer mandates, and government taxes -- into an interindustry macroeconomic model. Our results suggest that there are short-term costs, but considerable long-term benefits to implementing a reform package that successfully reduces the share of nominal output accounted for by the health care sector. Our short-term results are similar to others who have focused solely on reform's short-term effects. However, we found that analyses extending only a few years ignore the positive effects of reduced health spending, and think this is because the differences between the pre-reform world and the post-reform world take time to compound.

How does health care reform benefit the economy overall when the rule in economics is "there's no such thing as a free lunch?" New inventions -- technical progress -- are a significant exception to the rule. Comprehensive health care reform implicitly promises a kind of technical progress. For example, proponents of reform contend that reorganizing the way the nation purchases health insurance and the way that health care is provided can lead to better health care for every dollar we spend on the sector. Looked at another way, health reform promises that we could spend less on care, keep the same level of health status, yet have resources left over to devote to other uses. Although spending on health care cannot be reduced indefinitely without affecting the quality of care, the premise behind most reform plans is that the current system allows plenty of room for cost saving without hurting health care quality.[1]

Whether any plan can contain costs but maintain care is a debate by itself, and one which we choose not to enter into here. Our work is premised on the notion that such a feat can be accomplished, and we analyze whether that aspect, along with others typical to comprehensive reform, will help or hurt the rest of the economy. Conceptually, it seems clear that if cost containment can be accomplished by reform, without introducing too many distortions, there will be benefits to the rest of the economy in the long run. Health care reform would be beneficial in the same way that an improvement in steel-making technology is good for the overall economy: the economy's overall potential to produce goods and services is higher.

In this paper, we use an interindustry macroeconomic with a long-term focus -- the INFORUM project's LIFT model -- to give a broad, but comprehensive, overview of how major health care

reform can affect the general economy.[2] To make our work comparable with other analyses, and to make use of other analysts' ideas about how a successful reform package would affect the medical sector, the specific reform package we analyze is the Health Security Act.

The Health Care Sector and the General Economy

We begin assessing the economic effects of reforming the health care sector by describing how the health care sector interacts with the rest of the economy. The primary mechanisms through which developments in the health care sector are transmitted to other sectors are prices.[3]

Of the price effects, one obvious channel is the effect on the aggregate price level. Health care price inflation has substantially outpaced inflation in other sectors. For example, since 1980, consumer prices for non-health goods and services have risen at a 4.1 percent annual rate, while medical care prices have risen 7.7 percent annually. The direct effect of faster medical price growth has been to add about 0.2 percentage points a year to inflation on average since 1980. There is a general consensus among economists that, given the current structure of the U.S. economy, lower inflation rates are associated with higher real growth in the longer run.[4] Higher inflation rates are generally associated with higher nominal interest rates, which have an inhibiting effect on economy-wide capital accumulation. Higher inflation raises the cost of inflation-indexed government entitlement programs and increases federal interest payments, raising the federal deficit.

Most analyses of health care reform ignore effects on the overall price level. For example, the influential analysis of HSA conducted by the Congressional Budget Office (CBO 1994) assumed that the plan would succeed at lowering the share of GDP accounted for by medical care. However, by assumption, this would be accomplished without affecting the overall inflation rate or real GDP growth -- even though medical care prices contribute significantly to the overall inflation rate.

The second major channel through which medical care prices affect the general economy is through their effect on labor compensation in nonmedical industries. Rising health care costs puts upward pressure on employer contributions for health insurance. Table 1 shows how the ratio of employer contributions for health insurance to total labor compensation has risen steadily through the 1980s for the economy as a whole, and for major industries. In general, extractive and manufacturing industries devoted a higher share of the labor compensation package to health benefits than have other industries. In all industries, the ratio has risen substantially over the last decade, and is projected to be considerably higher in 2010.

Rising health care prices can have one of two effects on the labor compensation package: (1) raise labor compensation and, therefore, prices; or (2) lower the share of labor compensation allocated to other kinds of labor compensation.[5]

Most economists believe that the overall supply of labor is relatively inelastic with respect to labor compensation changes, especially in the longer run. This is consistent with case (2), and suggests that, in the longer run, increasing health insurance contributions would largely come at the expense of other components of labor compensation. In simple terms, faster growth in health insurance contributions will reduce the rate of wage growth, or reduce or eliminate other benefits growth, like pensions. Table 1 illustrates the increasing shares of health benefits in labor compensation as health care costs rise faster than all other costs in the economy.

The implications of associating faster health price growth with slower wage growth are profound, especially on government budgets. Contributions for health insurance are not generally taxable, so as a larger part of the labor compensation package is shifted to health insurance contributions, growth in government revenue slows. At the federal level, the deficit would rise. States would find it harder to meet balanced-budget requirements, forcing either spending cuts or tax increases. *Overall, high rates of health price inflation catch governments between two inexorable forces: rising outlays and slackening revenues.* Health care costs are unique because they not only play a key role in government outlays, but they also influence revenues.

Previous Work

Recent analyses of the kind of comprehensive health care reform package currently under consideration have used a static approach (CBO 1994) and Aaron and Bosworth (1994) or a traditional macroeconomic model (DRI 1994). The static approach largely ignores the dynamic impact of health care reform on the overall price level and provides no empirical estimates of the interindustry effects of the reform (CBO 1994). Aaron and Bosworth (1994) address the industrial impacts, but do not empirically address the interindustry price effects, nor the macroeconomic feedback effects.

Traditional macroeconomic models, especially those designed to capture cyclical movements rather than long term trends, are of little help in assessing the effects of reform. These models focus on the short-term, while the effects of health care reform are likely to cumulate, with greater effects appearing the longer term. Further, macroeconomic models largely miss the differing effects on industries -- industrial mix effects -- that lead to macroeconomic changes.

We use LIFT to analyze health care reform to address shortcomings in previous studies. First, the aggregate price level and the level of economic activity are endogenous in LIFT. Although most macroeconomic models have equations to predict the aggregate price level, in LIFT the aggregate price level is calculated as the weighted sum of all industry prices, where industry prices themselves reflect the buyer-seller relations among industries. Thus rather than assuming the effect on aggregate inflation, the effect of health prices on inflation is a result of model calculations.

Secondly, the LIFT simulation horizon extends through 2010. Analyses of health care reform have only extended through 2004 (CBO) or earlier (DRI, the Administration, others). In general,

it is likely that ten years is too short a time to evaluate the effects of health care reform, especially when the reform is implemented slowly through 1998, as most analyses have assumed. A shorter time horizon likely biases the case against health care reform. A nearly ironclad rule in economic analysis is that costs associated with economic changes almost always appear before the benefits arrive. A prime example of that rule is the economy's response to the sharp decline in oil prices in late 1985 and early 1986. Analysts were nearly unanimous in correctly pointing out the benefit for the U.S. economy as a whole. But the short-run loss of economic activity in oil-producing states and their second-round effects were large enough to slow the economy substantially in early 1986, and actually cause real GDP to drop in the second quarter of that year. *A key question to consider in health care reform is whether there are long-term benefits of health care reform that are sufficient to overcome the short-run costs.*

How We Did Our Analysis

We assumed reform would be enacted in 1994 and phased in through 1998. This was done to make our work comparable to other groups who have studied the HSA. In addition, we focused on the effects the plan will have on the non-health sectors of the economy, rather than on the health care sector itself. In our analysis, we exogenized prices for the seven LIFT health-care producing sectors, and real spending for the six LIFT health consumer spending categories.[6] Exogenizing the health care sector isolates the effects on the rest of the economy. Naturally, our analysis is then dependent on how the health care sector is characterized in the base as well as under reform. As discussed below, we attempted to use a generally-accepted view of the evolution of medical care prices and real service demand before and after reform, rather than seeking to quantify the effects of reform on the health care sector itself.

Our approach is valid to the extent that there is little feedback from changes in nonmedical industries and the overall economy to the medical sector. This could be true for one of two reasons. First, it may be that the effects on other industries and the overall economy of reforming the health care sector are small. In general, we find this *not* to be the case. Secondly, the effects on other industries and the overall economy could be sizeable, but those differences do not influence the demand for or supply of medical care substantially. For simplicity, we assume this second proposition holds.

Our conditions contrast sharply with assumptions implicit in other analyses. Other approaches hold constant the aggregate price level or real GDP growth (or both) in the face of health care reform. That approach is typical of industry studies where the industry is small relative to the overall economy, and the forward and backward linkages with other sectors in the economy are few. As already discussed, neither of those characteristics are appropriate for the health sector. *Finally, it simply seems to make little sense to assume that the overall inflation rate would be unaffected when a major part of most health care reform bills is aimed at reducing health care price inflation.*

Building the Baseline

We built a LIFT baseline using a generally-accepted long-run view of how the health care sector will evolve. Because the health sector would be exogenous relative to the rest of the LIFT model, we wanted to ensure that our estimates of health care variables were close to "mainstream" estimates. Both the CBO and the Health Care Financing Administration (HCFA) long-run projections of national health expenditures (NHE) project that prices for medical services will rise much faster than other prices.[7] Because the CBO projections were published most recently, we tried to incorporate their views into the LIFT model. Our major information source was the CBO Memorandum, Projections of National Health Expenditures: 1993 Update (October 1993).

Our first step was to try to eliminate differing macroeconomic reference cases as a possible confounding influence in our analysis by fixing the LIFT baseline forecast to look more like the CBO macro forecast. The major change was to add slightly more than 1 percentage point a year to the LIFT labor productivity forecast, which we did by raising productivity growth across all industries.[8]

Next, we tried to match the CBO health baseline by fixing LIFT model health variables to the CBO paths through 2003. We directly incorporated CBO projections for Medicare, Medicaid, and the personal health spending categories in nominal terms. The split between real personal health spending and price increases for personal health spending was determined by examining the sources of nominal spending growth by type of factor and either allocating it to real growth or price growth.[9] Where more information was available about a type of spending, say, physician services, we used the more sector specific data. Otherwise, we used the average figures.

Table 2 breaks overall spending on personal health goods into factors that account for increases in consumer spending on health care. For example, of the projected 8.5 percent annual growth in personal health spending, population growth accounts for about 0.8 percentage points (about 10 percent of spending growth). We allocated the effects of population, demographic composition, and use-per-person directly to real personal health spending. The sum of these growth factors is 2.1 percent a year. In addition, we allocated part of the category labelled "other price and intensity" to real spending. On average, real spending growth was set to about 3 percent a year, and price growth was set at about 5.6 percent a year.[10]

After 2003, we tried to maintain CBO trends by keeping each series growing at growth their rate during 2000-2004. It proved impossible to maintain overall GDP inflation at 2.5 percent annually as an increasingly larger share of the economy was taken up by high-inflation health care spending. We let the model determine the aggregate price deflator growth, which turned out to be 3 percent -- half a percentage point above the CBO baseline.

Our difficulty in adhering to the CBO macroeconomic base with rapid health price increases illustrates the inconsistencies that appear when projections do not allow changes in the health sector to influence the rest of the economy. Consider the following illustration.

Suppose the price level has been constant, and, perhaps through central bank intervention, is guaranteed to remain constant for the indefinite future. To be consistent with a constant price level, rapid increases in health prices must be accompanied by falling prices in other sectors. Unless a productivity increase in the nonhealth sectors allows prices to fall while real output remains unchanged, falling prices must lead to declining output, employment, and income in the nonmedical sectors. As the health sector begins to account for a larger share of the economy, the deflationary pressure on these other sectors would only increase.

There are several important aspects to this story. We emphasize that the reductions in output and employment in other sectors take the form of repeated shocks to the economy. This is because the tendency for the health sector to increase in importance relative to the non-health sectors puts repeated pressure on the nonhealth sectors to adjust. What is progressively increasing is the price of health care relative to nonhealth prices.[11] Previous attempts to analyze reform could largely ignore the price level effects, mainly because they did not look far enough into the future. The widening difference between prices as the projection horizon lengthens is a source of the long term benefits.[12]

The economy would likely be hit harder than the simple story above would suggest. This is because rising health care prices would put upward pressure on premiums employers would have to pay for health insurance. As health insurance premiums became a larger share of the labor compensation package, wages and salaries would decline, further increasing the deflationary impact on the nonhealth sectors.[13]

Implementing Comprehensive Health Care Reform in the Model

To simulate the effects of implementing comprehensive health care reform, we needed to implement a concrete set of proposals in the LIFT model. As noted above, rather than designing our own reform proposals, we chose to implement a version of the Health Security Act. This also allowed us to make use of other analysts' estimates of the effects of reform on the health care sector itself, and focus on the implications of reform on the nonhealth portion of the economy, or the economy in general. Even though we chose to model the HSA, we implemented only the major parts of the plan and glossed over many details that, although important for specific firms, were likely to be of little importance to the overall economy. From that perspective our view of comprehensive reform consists of four parts:

- Insurance coverage extended to the uninsured and underinsured.

- Cost containment arising from reorganizing how health insurance is purchased and how health costs are monitored. In the event that these gains in managerial efficiency do not adequately constrain costs, control mechanisms are imposed.

- Raising government revenue through tax increases and fees.

- o Mandating employers to contribute to employee health insurance and setting caps on what small firms (and low-income individuals) have to pay for health insurance.

We will briefly summarize the empirical issues we encountered in implementing each part of the plan and describe what we assumed in our final analysis.

NHE and Universal Insurance Coverage

There is considerable uncertainty about how much national health expenditures will rise if there is universal health insurance coverage (see OTA (1994)).[14] A recent review of studies by OTA (1994) suggests a relatively wide range of possible increases in NHE. However, it is useful to note that all studies put the increase at less than 10 percent of NHE. A guess of the range for the amount of additional health spending is between 3 and 7 percent of health spending. We allocated all of the expected increase in NHE to real consumer purchases.

We increased real health PCE spending relative to the base during a phase-in that ends in 1998.[15] The increase peaks at 6.2 percent above base (1998-2003) and becomes smaller over time, as by assumption the health sector becomes more efficient and meets the nominal health spending guidelines implicit in the premium caps in HSA (See Table 3 for a comparison of the Reform and Base assumptions). Note that we assume that the health sector provides the same or improved health status for same base level of real health spending. By the end of the simulation period (2010), real PCE health is slightly more than 0.2 percent above baseline spending.

Cost Containment

Our assumptions about the effects of cost containment on NHE are taken directly from CBO (1994). Their analysis of the HSA projects a 6.8-percent decline in 2004, even with universal coverage. While CBO projects that nominal spending will be lower, they do not provide information about how much of the decline is attributable to lower-than-base prices or lower-than-base quantities. In the simulation presented here, we began from assumptions of the effects of universal coverage on the quantity of health care demanded. Next, we altered LIFT health price assumptions so as to approximately match the decline in national health spending projected by CBO in 2004.[16]

After 2004 we limited nominal personal health spending growth to around 5 percent, split between about 3.5 percent inflation and about 1.5 percent annual growth in real spending. Because health care reform reduced the overall inflation rate and nominal GDP, we found that we did not reduce health care spending enough to meet HSA guidelines implicit in premium growth targets. Other experiments we have conducted suggested further reducing health care spending would likely lead to even larger beneficial impacts on the economy in the long run.

As shown in Table 6, health spending is down 2 percentage points as a share of consumer spending in 2004, and the share of nominal GDP accounted for by consumer health spending is down 1.5 percentage points. The CBO (1994) analysis appears to suggest that the HSA would reduce NHE as a percentage of nominal GDP by about 1.4 percentage points.[17] Thus, it appears that the changes made to the LIFT model resulted in a fairly close correspondence to the direct aggregate impact derived by the CBO.

Government Revenues

Almost every health care reform package requires some additional financing to match higher government spending levels. For example, HSA contains some provisions that raise taxes and fees. The primary revenue provision is an additional tax on tobacco products. CBO (1994) reports that the Joint Tax Committee estimates an $11 billion increment to revenue from the tax.[18] To account for all other revenue provisions, we imposed a payroll tax of 0.2 percent, beginning in 1996. This generated about $6 billion in revenue in 1996 and about $9 billion in 2004. Because the payroll tax rate is quite small, the effect of these taxes is minimal in the model.

Government Mandates and Subsidies

HSA is an example of a plan that relies on government mandates that employers contribute to employee health insurance costs. The plan mandates businesses contribute roughly 80 percent of total insurance costs, with the federal government providing subsidies for small, low-wage business and for low-wage workers.

Subsidies to families were introduced as an addition to the current Medicare program. The value of the subsidy was taken from CBO (1994) and after 2004 was increased by the annual rate of health care inflation between 2004 and 2010.[19]

HSA mandates that business contribute to employee health insurance, but sets a cap of 7.9 percent of payroll on large firms. Lower caps are set on small firms with low-wage workers. The federal government provides a subsidy to small business with low-wage workers. The total value of the subsidy to business through 2004 was taken from CBO analysis, and extended through 2010 with low (2.6 percent) growth rate.[20]

Employer contributions to health insurance vary considerably by industry. Some industries (mostly in manufacturing) already contribute more than 7.9 percent. Others -- agriculture, some services -- contribute much less. In our analysis, we assumed that all industries move to the same level of spending per employee by 1998 (using the phase-in described above). This implies that some industries' premiums were forced up, and others' down. Table 4 shows detail on dollar values of health insurance premiums by selected industries with and without reform. As a starting point, we did not take account of retirees, so we forced each industry to pay the same premium per employee in 1998. Following Bosworth and Aaron (1994), we raised per-employee

premiums 13 percent to account for the effects of covering the uninsured and underinsured. In 1998, we forced all industries to pay $2926 per employee (in 1998 dollars).[21]

Employer contributions vary considerably across industries in the base. In general, it appears that manufacturing industries will be able to reduce their employer contributions as a result of the employer mandate part of reform, while service industries will have to raise their contributions. An interesting aspect of the table is how the differences between the Base and Reform scenarios change over time. In the base, employer contributions per employee are assumed to rise at the rate of per-capita nominal health care spending. With reform, a similar assumption is made after 1998, when all industries are forced to pay the same amount per employee.

During the first several years of the simulation, service-sector industries face increasing premiums. However, in the early 2000's the differential between the Base and Reform scenarios shrinks, and, by 2010, even service-sector industries are facing lower contributions with the reform in place. This is because, if reform is successful at reducing health care inflation, premium growth will be much lower for all industries. This last observation bears emphasis: *reducing health care prices will eventually lead to lower employer contributions in the long run, even when industries must raise their contributions in the short run to match an economy-wide average*. Shorter-run analyses of health care reform will not embody this effect.[22]

The split of Federal subsidies to employers among industries was based on information about the number of uninsured by industry, the distribution of small business by industry, and the average wage in small business in 1990.[23]

After examining this information, we arrived at the percentage distribution of employer subsidies across industries shown in Table 5. This distribution is captures which industries will receive the subsidies, not which firms receive the subsidies. For example, we allocate no subsidy to manufacturing, although in reality there are likely to be some manufacturing firms receiving a subsidy. However, the effect on manufactured goods prices will be extremely small compared to the possible impact on prices in wholesale and retail trade.

We assume, following the discussion above, that changes in employer contributions for health insurance compensation result in changes in wages and salaries, but leave the total labor compensation package unchanged. We violate that assumption in the case of the subsidized industries listed in Table 5. In those industries, the subsidies are intended to raise labor compensation, rather than reduce wages and salaries. In other words, the intent of the subsidy is to allow wages and salaries to remain unchanged after reform, while allowing total labor compensation to rise as health benefits increase.

Comparing Base and Reform Assumptions

Table 3 shows the percentage difference in major health assumptions between the Base and Reform scenarios. In summary, reform reduces nominal spending on health care by slightly more than 28 percent by 2010. Real spending is essentially unchanged, so that the entire movement in nominal health care spending is due to lower prices. In 2004, nominal spending is down nearly 11 percent, with prices down more than 14 percent and real spending up by about 4 percent.

Results of the Model Simulation

Macroeconomic Variable Effects

The effects on the general economy of comprehensive health care reform are shown in Table 6. There are several striking aspects to this table. First, real GDP is lower in the Reform scenario through 1997 -- the first three years of the plan. This is partly the result of a rise in the overall price level over the same years. The price level increases primarily because real spending on health care is higher with reform, while price declines are smaller than the real increases. Thus, the average level of consumer prices is initially higher, leading to higher nominal interest rates, lower consumer spending and lower real GDP. The lower consumer spending ($23 billion, 77$) overwhelms the assumed increase in real health spending ($16 billion, 77$).

Real GDP is higher after 1997 however, as the effects of lower prices for health care begin to have an impact on the economy. Summary results include:

- Real GDP higher by 0.6 percent in 2004, and 1 percent in 2010.

- Average consumer price inflation lower by about 0.5 percentage points for the 8 years 1996-2004. Average inflation rate 1 percentage point lower for the 6 years 2004-2010.

- Interest rates lower by between 70 to 100 basis points annually during 2004-2010.

- The number of jobs economy-wide up between 300,000 to 500,000 annually between 2004 and 2010, despite substantial job reductions in the health sector.

In general, we attempted to make assumptions that would bias the case against large macroeconomic effects. For example, we did not allow the reduction in the U.S. price level to improve our international competitiveness. That is, we assumed that the exchange rate would adjust to fully offset lower U.S. prices relative to those abroad. In effect, we assumed that purchasing power parity holds throughout the simulation. Had we not allowed the exchange rate to adjust fully, exports would have risen and imports would have slipped relative to the base. This would have led to higher real GDP and more employment, although interest rates would have been higher, and, if real GDP began to push on capacity constraints, inflation would not have fallen as much.

Government Budget Effects

Reducing health care costs substantially reduces the federal budget deficit in the long term -- even after government subsidies to employers and low-income families are considered. In the short term, the slowdown in the economy and the increase in federal spending add to the deficit. As a percent of nominal GNP, the deficit is 0.4 percentage points higher in 2000. This situation reverses itself by 2006 and by 2010 the deficit share has fallen from 2.7 percent of GNP to 1.6 percent of GNP. In 2010 the baseline deficit is $428 billion. With reform the deficit in 2010 is $189 billion. The federal debt is 4.2 percent lower under the Reform scenario in 2010. The effects of health care reform on the federal deficit and the debt are a mixture of direct effects -- higher taxes and spending -- and indirect effects -- changing inflation and interest rates.

Because Medicare is an important part of the social insurance system in the United States, changing assumptions about the path of Medicare spending has serious implications for the viability of federal social insurance funds. High health care spending in the base not only raises social insurance outlays directly, it reduces taxable wages and salaries through the channel of raising health insurance premiums. This combination reduces the combined social insurance fund surplus dramatically. By 2010, before the "baby boom" claims on the fund begin in earnest, the solvency ratio is 1.3.[24] Current Social Security projections call for an overall solvency ratio near 2.4 in 2010.[25] Under the Reform scenario, even with family subsidies labelled as Medicare, the solvency ratio is about 30 percent higher than the base in 2010. These results suggest that if we had tried to achieve the solvency ratios currently projected by the Social Security Administration in the Base and Reform scenarios, contribution rates would have to be much higher without health care reform.[26]

An often-ignored aspect of health care reform is the effect on state budgets, which are generally constrained by state law to be balanced in one form or another. States contribute nearly half of the funding for the Medicaid program. Under the reform plan, Medicaid costs decline substantially. In this implementation of LIFT, we forced the implied income tax rate for states and localities to adjust to keep the state and local NIPA deficit near zero. The high Medicaid spending in the Base helped to push up the implied state and local tax rate about 0.6 percentage point from 1994 to 1997, although the rate then declines slightly by 2004 before holding at 2.7 percent. Without as much pressure from rising Medicaid spending in the Reform scenario, state and local taxes are about 0.5 percentage points lower than the Base, with virtually no change in the state and local government deficit. Thus a health care reform package that successfully reduces health price inflation reduces pressure on Medicaid program costs and implies either lower state taxes or higher levels of state spending.

Conclusions and Future Research

Our work shows that the economy benefits if health care reform lowers health care spending relative to the rest of the economy. In the short term, reform would reduce real GDP and employment slightly. In the longer term, however, real GDP and employment are higher, while

the federal deficit is lower. States are under less pressure to raise taxes or reduce spending. Our work shows long run benefits to the economy that outweigh costs imposed through the adoption of universal coverage, the adoption of employer mandates, and increases in government revenues.

Our results differ from others who have analyzed similar programs. CBO analyses of the economic impacts typically follow an accounting approach (CBO 1994). They do not account for the effects of the expected large reduction in the overall price level. As a result, they also do not account for the effects of lower interest rate, nor the lessened pressures on entitlement program budgets. Although CBO analysis ends at 2004, they do indicate that had they carried their analysis further, it would have led to a lower Federal deficit, consistent with our results. Larger differences would have likely emerged if the CBO analysis were carried out several more years, simply because their approach eliminates the overall effect on the price level and real GDP. Further, it is not clear what assumptions were made concerning state and local tax rates or the social insurance fund contribution rates. DRI analysis ends at 2000, and shows results somewhat similar to LIFT in 2000. We conjecture that the DRI results in the long-term might be broadly similar to ours, had their reported simulation horizon been extended through 2010.

As always with large empirical projects, there are many places we can improve our analysis. We attempted to incorporate the features that seemed likely to have the most relevance to the economic effects of health care reform. We are currently working on several extensions and refinements of this analysis. For example, because the simulation horizon is crucial in assessing the benefits of reform, we are working on a version of the model that will simulate the effects through 2050. At the same time, we are refining our handling of employer contributions for health insurance premiums, and improving our modeling of consumer demand for medical services so that we can endogenize both consumer spending on medical care and medical care prices. Despite the opportunities to refine the current work, it unambiguously suggests the following: in the long-run, there is substantial economic benefit in reducing the amount of resources devoted to the health care sector.

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TABLE 1
Employer health contribution share of labor compensation
percent

	1980	1985	1990	1995	2000	2005	2010
ALL INDUSTRIES	3.7	4.5	5.3	6.4	7.6	8.8	10.2
Farm & agricultural services	2.1	2.3	4.1	6.0	6.9	8.0	9.4
Mining	5.9	6.7	7.8	9.5	11.3	13.4	16.2
Contract construction	2.8	3.4	4.9	6.1	7.7	9.6	12.1
Nondurable manufacturing	5.1	6.4	7.6	9.5	11.4	13.6	16.4
Durable manufacturing	6.2	7.1	8.3	10.3	12.5	15.0	18.2
Transportation	3.9	5.0	6.4	7.9	9.9	12.5	16.1
Utilities	7.2	8.0	8.8	10.9	13.1	15.9	19.4
Wholesale and retail trade	3.4	4.1	4.9	6.1	7.6	9.3	11.6
Finance,insurance,real estate	4.7	5.0	5.4	6.7	8.2	9.8	11.7
Services, excluding medical	2.6	3.5	4.0	4.9	6.1	7.4	9.0
Health services	3.5	4.1	4.6	5.3	5.4	5.4	5.4

Source: INFORUM LIFT Base Scenario and historical data files

TABLE 2

CBO Health Spending, average annual growth rates, %	1993-2003
Personal Health Expenditures	8.5
Factors accounting for Personal Health Expenditures Growth	
Population	0.8
Demographic Composition	0.4
Use per person	0.9
GDP deflator growth	2.5
Other price and intensity	4.0

Source: Projections of National Health Expenditures: 1993 Update. CBO Memorandum, October 1993. Table A-2.

TABLE 3
Comparing Health Price and Quantity Assumptions

Line 1: Base
Line 2: Reform Plan effects as percentage deviations from base.

	1994	1996	1997	1998	2000	2004	2006	2008	2010	96-04	04-10
Consumer Health Spending											
Billions of $	780.0	923.9	1005.6	1094.7	1298.0	1828.2	2171.5	2580.5	3068.2	8.5	8.6
	0.0	1.5	3.5	1.8	-1.8	-10.5	-16.3	-22.2	-28.3		
Billions of 1977 $	234.3	247.8	254.8	262.1	277.4	311.1	329.6	349.4	370.5	2.8	2.9
	0.0	2.5	6.2	6.2	5.9	4.1	2.9	1.6	0.2		
Consumer Health Prices (1977 = 100)											
Implicit Deflator	332.9	372.9	394.6	417.6	467.9	587.7	658.8	738.5	828.0	5.7	5.7
	0.0	-1.0	-2.6	-4.2	-7.2	-14.0	-18.6	-23.5	-28.4		
Health Industry Productivity											
1977 $ per hour	13.8	13.8	13.8	13.9	13.9	14.1	14.2	14.3	14.4	0.2	0.4
	-0.0	-0.0	0.3	0.6	1.3	2.8	3.7	4.5	5.4		
Miscellaneous Assumptions											
Emplyer hlth ins. contr/labor	6.2	6.6	6.9	7.2	7.6	8.6	9.1	9.7	10.2	3.2	3.0
	0.0	4.4	6.7	13.5	10.9	4.4	-0.2	-5.7	-10.9		
Medicare											
Billions of $	169.0	211.0	235.0	259.0	307.0	469.4	576.3	683.1	790.0	10.0	8.7
	0.0	3.7	6.6	9.0	12.7	5.2	-4.6	-11.4	-16.3		
Billions of 77 $	47.3	52.8	55.6	57.9	61.3	74.8	82.0	86.9	89.7	4.4	3.0
	0.0	5.2	10.0	14.5	22.5	23.6	18.7	17.5	18.9		
Medicaid											
Billions of $	159.5	205.4	230.8	256.2	307.0	465.3	571.9	678.4	785.0	10.2	8.7
	0.0	-9.1	-16.1	-21.8	-30.3	-38.0	-43.9	-47.9	-50.8		
Billions of 77 $	47.9	55.1	58.5	61.3	65.6	79.2	86.8	91.9	94.8	4.5	3.0
	0.0	-8.2	-13.9	-18.4	-24.9	-28.0	-31.1	-31.9	-31.3		

Source: INFORUM Baseline and Reform Scenarios

TABLE 4
Employer Health Contributions by Selected Industries
dollars per employee

Line 1: Base
Line 2: Reform effects as deviations from base.

	1994	1996	1997	1998	2000	2004	2006	2008	2010	96-04	04-10
Mining	5959	6914	7471	8053	9283	12428	14376	16706	19394	7.3	7.4
	0	-578	-1867	-5127	-6029	-8461	-10076	-12070	-14427	-13.2	-3.7
Contract construction	1603	1860	2010	2167	2498	3344	3868	4494	5218	7.3	7.4
	0	124	297	759	756	623	432	141	-251	1.3	-3.7
Food & tobacco	3724	4321	4669	5033	5802	7767	8984	10440	12121	7.3	7.4
	0	-215	-754	-2107	-2548	-3800	-4685	-5805	-7154	-7.8	-3.7
Textile mill products	2311	2681	2897	3123	3600	4820	5575	6478	7521	7.3	7.4
	0	16	-49	-197	-346	-853	-1275	-1843	-2554	-2.5	-3.7
Apparel and related products	1869	2168	2343	2526	2912	3898	4509	5239	6082	7.3	7.4
	0	86	170	400	342	69	-209	-604	-1115	-0.3	-3.7
Motor vehicles and equipment	6889	7994	8638	9311	10733	14369	16621	19315	22423	7.3	7.4
	0	-728	-2330	-6385	-7479	-10402	-12321	-14680	-17456	-14.9	-3.7
Communications	5780	6707	7246	7812	9005	12055	13944	16204	18812	7.3	7.4
	0	-549	-1776	-4886	-5751	-8088	-9645	-11569	-13845	-12.8	-3.7
Wholesale and retail trade	1773	2057	2223	2396	2762	3698	4277	4970	5770	7.3	7.4
	0	106	221	530	492	269	23	-335	-803	0.3	-3.7
Financial & insurance services	2962	3437	3714	4004	4615	6178	7147	8305	9642	7.3	7.4
	0	-85	-369	-1078	-1361	-2212	-2847	-3670	-4674	-5.2	-3.7
Health services	1931	2241	2422	2610	3009	4028	4660	5415	6286	7.3	7.4
	0	80	141	316	245	-62	-360	-780	-1319	-0.6	-3.7

Source: INFORUM Baseline and Reform Scenarios

TABLE 5

Sectors	% of federal employer subsidy
Wholesale and retail trade	34
Hotels and repairs	18
Miscellaneous business services	17
Construction	11
Education services	10
Agriculture	5
Movies and amusements	3
Auto repair	2

TABLE 6
Comparing Reform Plan to Base
Health Spending and Model Results Summary

Line 1: Base
Line 2: Reform effects shown as deviations from base values.

	1994	1996	1997	1998	2000	2004	2006	2008	2010	96-04	04-10
Macroeconomic Indicators											
GDP, billions of $	6768	7482	7816	8204	9175	11377	12701	14088	15665	5.2	5.3
	-0	-21	3	41	2	-169	-361	-529	-816	-0.2	-0.6
GDP, billions of 1977 $	2996	3130	3177	3244	3418	3749	3927	4096	4277	2.3	2.2
	0	-11	-3	19	14	22	23	38	44	0.1	0.1
GNP deflator (1977=100)	225.7	238.8	245.7	252.6	268.2	303.2	323.2	343.7	366.0	3.0	3.1
	0.0	0.2	0.4	-0.2	-1.0	-6.3	-11.1	-16.0	-22.6	-0.3	-0.7
PCE deflator (1977=100)	319.6	340.4	351.8	363.5	388.0	443.4	474.7	508.2	544.9	3.3	3.4
	0.0	1.3	1.3	-0.4	-3.1	-14.7	-24.4	-35.8	-50.9	-0.5	-1.1
Unemployment rate, %	6.5	6.4	6.8	6.9	6.7	6.4	6.1	6.1	6.1	0.1	-1.0
	0.0	0.2	0.0	-0.2	-0.3	-0.4	-0.2	-0.3	-0.3	-1.2	0.3
Total jobs, millions	127.3	130.2	131.3	132.7	136.7	144.5	148.6	152.2	156.1	1.3	1.3
	-0.0	-0.3	-0.0	0.3	0.4	0.6	0.3	0.5	0.4	0.1	-0.0
Three month bill rate, %	4.2	4.4	4.2	4.3	4.6	5.0	5.4	5.2	5.0	1.7	0.1
	0.0	-0.2	0.1	0.2	0.2	-0.1	-0.7	-0.7	-1.0	0.4	-3.2
10-year note rate, %	6.7	6.2	6.3	6.4	6.5	6.7	6.8	6.7	6.5	1.0	-0.5
	0.0	-0.1	0.1	0.1	0.0	-0.2	-0.7	-0.8	-0.9	-0.3	-2.0
Federal deficit, billions of $	-174	-202	-234	-249	-251	-330	-383	-422	-428	6.1	4.3
	-0	-5	-8	-16	-33	-21	48	125	189	0.5	-10.8
relative to GNP, %	-2.6	-2.7	-3.0	-3.0	-2.7	-2.9	-3.0	-3.0	-2.7	0.9	-1.0
	-0.0	-0.1	-0.1	-0.2	-0.4	-0.2	0.3	0.8	1.1	0.6	-10.1
National Accounts -- billions of 1977 $											
Personal consumption	2033	2124	2150	2188	2298	2535	2663	2782	2901	2.2	2.2
	-0	-11	-7	11	20	37	34	38	46	0.2	0.0
Health goods & services	234	248	255	262	277	311	330	349	371	2.8	2.9
	0	6	16	16	16	13	9	6	1	0.2	-0.6
Health Insurance	12	13	13	13	14	15	15	16	17	1.7	1.7
	-0	-0	0	0	0	0	0	1	1	0.3	0.3
Nonhealth goods & services	1817	1896	1915	1946	2041	2246	2355	2455	2554	2.1	2.1
	-0	-17	-23	-5	4	23	23	31	44	0.2	0.1
Fixed investment	489	515	517	532	587	662	704	736	778	3.1	2.7
	-0	-5	0	12	3	4	6	19	23	0.2	0.4
Merchandise exports	274	298	314	330	356	417	449	486	525	4.2	3.8
	-0	1	0	-1	-3	-5	-4	-3	-4	-0.2	0.1
Merchandise imports	420	441	446	459	498	577	620	659	700	3.4	3.2
	-0	-4	-2	5	5	10	10	14	18	0.3	0.1

TABLE 6 (cont'd)
Comparing Reform Plan to Base
Health Spending and Model Results Summary

Line 1: Base
Line 2: Reform effects shown as deviations from base values.

	1994	1996	1997	1998	2000	2004	2006	2008	2010	96-04	04-10
Personal Income Components											
Personal income	5709	6351	6655	7001	7864	9923	11204	12526	13998	5.6	5.7
	-0	-32	-12	21	-15	-234	-546	-843	-1250	-0.2	-1.2
Labor compensation	3994	4398	4562	4759	5285	6448	7164	7914	8786	4.8	5.2
	-0	-22	8	51	37	-21	-109	-174	-319	0.0	-0.6
Wages and salaries	3272	3576	3691	3832	4224	5063	5575	6094	6695	4.3	4.7
	-0	-32	-17	-10	-19	-44	-85	-91	-144	0.0	-0.2
Supplements	723	822	871	926	1062	1385	1589	1819	2091	6.5	6.9
	0	10	25	61	56	23	-24	-84	-174	0.1	-1.7
Employer health ins. contr	250	292	315	341	401	553	650	765	900	8.0	8.1
	0	11	22	50	47	22	-11	-60	-127	0.0	-3.2
Interest income	712	772	808	853	979	1295	1497	1685	1885	6.5	6.3
	0	-4	-1	7	19	-4	-69	-123	-193	0.0	-1.8
Government transfers	981	1131	1221	1304	1476	1968	2283	2615	2960	6.9	6.8
	0	-6	-20	-36	-63	-186	-331	-485	-648	-1.2	-2.5
Medicare	169	211	235	259	307	469	576	683	790	10.0	8.7
	0	8	16	23	39	24	-27	-78	-129	0.2	-3.8
Fed. Grants-in-Aid Medicaid	90	116	131	145	174	264	324	385	445	10.2	8.7
	0	-11	-21	-32	-53	-100	-142	-184	-226	-4.8	-3.9
State & local direct relief	199	248	275	302	357	524	636	747	860	9.4	8.2
	0	-19	-37	-56	-93	-179	-254	-330	-406	-4.2	-3.7
Medical	159	205	231	256	307	465	572	678	785	10.2	8.7
	0	-19	-37	-56	-93	-177	-251	-325	-399	-4.8	-3.9
Disposable income	4985	5517	5774	6076	6835	8659	9779	10933	12227	5.6	5.7
	-0	-19	5	40	22	-156	-422	-675	-1035	-0.2	-1.2
Income Tax Rates											
State and Local	2.3	2.7	2.9	2.9	2.8	2.7	2.7	2.7	2.7	-0.3	-0.1
	0.0	-0.1	-0.2	-0.3	-0.5	-0.5	-0.5	-0.5	-0.4	-1.9	0.4

TABLE 6 (cont'd)
Comparing Reform Plan to Base
Health Spending and Model Results Summary

Line 1: Base
Line 2: Reform effects shown as deviations from base values.

	1994	1996	1997	1998	2000	2004	2006	2008	2010	96-04	04-10
Employer provided health insurance contribs as a percent of:											
Labor compensation	6.2	6.6	6.9	7.2	7.6	8.6	9.1	9.7	10.2	3.2	3.0
	0.0	0.3	0.5	1.0	0.8	0.4	-0.0	-0.6	-1.1	0.0	-2.6
Supplements	34.5	35.5	36.2	36.9	37.8	39.9	40.9	42.0	43.1	1.5	1.3
	0.0	0.9	1.4	2.8	2.3	0.9	-0.1	-1.4	-2.7	-0.0	-1.5
Health Sector Indicators											
Nominal PCE, % of GDP	11.5	12.3	12.9	13.3	14.1	16.1	17.1	18.3	19.6	3.3	3.3
	0.0	0.2	0.4	0.2	-0.3	-1.5	-2.4	-3.5	-4.8	-1.4	-3.1
Nominal PCE, % total PCE	16.6	17.7	18.4	19.0	20.1	22.5	23.7	25.2	26.8	3.0	2.9
	0.0	0.3	0.6	0.3	-0.4	-2.0	-3.0	-4.4	-5.9	-1.4	-2.7
Real PCE, % total PCE	11.5	11.7	11.9	12.0	12.1	12.3	12.4	12.6	12.8	0.6	0.7
	0.0	0.4	0.8	0.7	0.6	0.3	0.2	0.0	-0.2	-0.1	-0.7
Aggregations of Health Sectors (LIFT Producing Sectors 79-85)											
Output Sum, billions of 1977 $	241	254	261	267	281	312	328	346	365	2.6	2.6
	0	6	14	15	15	12	10	7	3	0.2	-0.5
Employment, millions jobs	10.1	10.7	11.0	11.3	11.8	13.0	13.6	14.2	14.9	2.4	2.3
	0.0	0.2	0.6	0.6	0.5	0.1	-0.1	-0.4	-0.7	-0.2	-0.9
as a percent of total jobs	9.6	9.9	10.1	10.3	10.5	10.9	11.1	11.3	11.6	1.2	1.0
	0.0	0.3	0.5	0.5	0.4	0.0	-0.1	-0.3	-0.5	-0.3	-0.9
Productivity, output/hrs	13.8	13.8	13.8	13.9	13.9	14.1	14.2	14.3	14.4	0.2	0.4
	-0.0	-0.0	0.0	0.1	0.2	0.4	0.5	0.6	0.8	0.4	0.4
Funding Health PCE											
Share of PCE funded by (percent)											
Public	42.1	45.1	46.3	47.1	47.3	51.1	52.9	52.8	51.3	1.6	0.1
	0.0	-1.8	-3.6	-3.7	-3.4	-3.3	-5.0	-5.0	-3.8	-0.3	-0.1
Private	57.9	54.9	53.7	52.9	52.7	48.9	47.1	47.2	48.7	-1.5	-0.1
	0.0	1.8	3.6	3.7	3.4	3.3	5.0	5.0	3.8	0.4	0.1
Value-added for Medical Services Sector ($ bill)											
Labor compensation	347	425	470	518	630	929	1127	1367	1658	9.8	9.7
	-0	-3	3	-8	-40	-163	-264	-402	-586	-2.3	-4.1
Corporate profits	14	18	20	22	28	45	56	70	86	11.7	10.8
	-0	-0	1	-0	-1	-8	-12	-19	-28	-2.3	-3.5
Proprietor income	62	79	89	100	125	192	236	289	351	11.1	10.0
	-0	3	6	2	-2	-23	-47	-80	-125	-2.0	-5.2

Source: INFORUM Base and Reform Scenarios

Notes

1. The productivity gain has less to do with technological innovation than with organizational innovation. In that sense, health care reform proponents are relying on a sort of x-efficiency gain, a concept developed by Leibenstein (1966).

2. LIFT tracks output, employment and prices for 85 producing industries, as well as more than 10 components of value added by 51 industries. It is also a complete macroeconomic model. See McCarthy (1991) for a recent overview of the LIFT model.

3. Analysts have noted several other mechanisms through which reform might affect the general economy. CBO (1994) notes the possibility of labor force adjustments in response to changing health insurance eligibility requirements and in the elimination of "job lock." Many of these adjustments are offsetting, and for simplicity we assume that the sum of these adjustments is less important for the economy as a whole than the effects discussed here.

4. A summary of recent work can be found in Cogely (1994). The literature seems to be divided over the issue of whether a perfectly anticipated inflation would hurt the economy, or whether we can devise a set of institutions that would alleviate the worst of the inflation effect.

5. Of course, any combination of the two is possible. Further, rising labor compensation could be met with profit reductions to keep prices constant. Because of LIFT's long run focus, we adopted the assumption that the inelastic labor supply will force changes in the composition of labor compensation without changing its level. Further simulations are being conducted that relax this assumption.

6. LIFT differentiates producing sectors (input-output producing industries) from the National Income and Product Account (NIPA) consumer spending categories.

7. National health expenditures consist of spending by consumers, business, and government on health goods and services or buildings. To simplify our work, we focus only on consumer purchases of health goods and services. Note that major health transfer programs are a part of consumer spending on health. The primary exclusions from NHE would be spending on research and development and construction. An example of very long-run projections can be found in Waldo (1991).

8. Between 1995 and 2003, CBO assumes 2.3 percent real GDP growth annually and 2.5 percent annual growth in the GDP deflator. Before "fixing" productivity, the LIFT model shows considerably slower labor productivity growth than that implied by the CBO. The reasons behind the productivity differences are not yet apparent. Our empirical work shows that "reasonable" looking productivity forecasts by industry are consistent with slower-growing aggregate productivity than is generally assumed in macro analyses. From a slightly different perspective, to incorporate the faster growing productivity typical in macro analysis, we need to make some guess about which industries will show the gain. With service sectors accounting for the lion's share of employment, the difference between CBO and LIFT productivity projections is essentially a different view of service-sector productivity. Because CBO does not provide explicit information about sectoral productivity trends, it is hard to reconcile the two views.

9. These are taken from CBO (1994), Tables A-2, and A-4 to A-7.

10. Generally LIFT forecasts prices by forecasting the components of value added (labor compensation, profits, etc) by industry and making use of the input-output relationship that equates prices in any industry to the input-requirement-weighted-sum of input prices and value-added per unit of output. When we exogenize prices, we need to allocate the value-added implied by the exogenous prices back to the individual components of value-added. The model results are sensitive to this allocation, since some value-added components enter personal income directly, and others do not. Further, tax rates are different on different components of value-added. In general, we tried to preserve the relative importances of the value-added components in our health care value-added sector between the Base and Reform simulations.

11. That it is the relative price of health care that is important should be emphasized, especially to those analysts who point to historically low health care price inflation in the last year to conclude that no reform is necessary. Despite being relatively low, health care inflation is still nearly twice as high as nonhealth inflation. It should also be emphasized that this difference is a major source of the expected gain in the economy from reform. A substantially larger part of a dollar spent on health care goes to inflation, compared with other goods. Thus, switching a dollar from health care to other goods creates more real output, and possibly, more jobs.

12. Enacting a meaningful health care reform package might do more to ensure longer-run price level stability and reasonable economic performance than policies the Federal Reserve might use.

13. Health insurance likely operates as a price subsidy on health care purchases, rather than an income transfer. Consumers are not likely indifferent between a dollar of wages and a dollar of health insurance contributions.

14. One difficulty is that the increment to NHE depends on the kind of insurance coverage that will be made universal. More generous plans will add more to NHE, while "bare bones" plans will add commensurately less. A mitigating aspect of extending insurance coverage is that the uninsured are typically healthier than the insured, largely by virtue of their age (Economic Report of the President: 1994, p. 136).

15. The phase-in schedule is 15 percent in 1996, 40 percent through 1997, and 100 percent in 1998. This is the schedule used by the Administration, CBO and DRI.

16. We made several alternative simulations varying the extent to which we lowered prices or real spending to achieve the desired declines in NHE. Somewhat surprisingly, even when we lowered NHE -- contained costs -- only by reducing real activity in the health sector, we found that the economy benefited as a whole. Inflation was down, real GDP was up, and the deficit was down. However, unemployment was still higher in 2010 when the NHE decline was the result of reducing real activity only. Even by 2010, the economy had not absorbed the labor resources released from medical services. From a public policy perspective, the improvement in the federal deficit gives some room for a more stimulative fiscal policy to offset the activity loss in the medical sectors when NHE is lowered by reducing quantity rather than price. In sum, our major results do not appear unduly sensitive to whether NHE is lowered by reducing quantity or reducing prices.

17. CBO did not publish nominal GDP figures for 2004 in their analysis of the HSA. We calculated a nominal GDP for 2004 by raising their published nominal GDP figure for 2003 by 4.7 percent, the published growth rate for 2003.

18. This is about 20 percent of nominal tobacco PCE (using 1992 data). We added $11 billion to Federal revenue for every year of the simulation, matching the CBO assumption through 2004. We kept the added revenue constant at $11 billion thereafter. This probably understates the tax yield with respect to Federal revenue over time, since the constant nominal revenue implies a smaller percentage of the price is going to the tax. To account for the effect of higher taxes on tobacco product prices, we also raised consumer tobacco prices by 20 percent over the baseline. Real consumer spending on tobacco is determined endogenously by the model, and seemed little affected by the imposition of the tax. In both the base and reform simulations, real tobacco spending falls about 1.6 percent a year throughout the 17-year simulation horizon.

19. The subsidy amounted to $95 billion in 2004.

20. This assumption probably overstates the amount of government outlays, since, under the HSA, the subsidy wage triggers are not indexed to inflation, and therefore are not scheduled to rise with the average wage rate.

21. Note that these figures will not match the premium that must be paid per full-time employee according to the legislation. LIFT does not keep track of the ratio of full-to-part-time employees by industry. To the extent that the HSA does not seriously affect the tendency for full- or part-time employment within industries, our implementation is largely correct. However, analysts have pointed out that the plan does encourage, on the margin, firms to become smaller and to offer more part-time employment. We do not account for this effect.

22. The numbers in Table 4 do not net out the effects of federal subsidies, discussed below.

23. We used aggregate data from the Statistical Abstract, 1993 edition, Table 860 and from Levit et. al. (1992) to make some preliminary guesses about which industries would receive most of the employer subsidies.

24. This means that there is about 15 months worth of social insurance fund payout available in the fund without additional inflow.

25. The LIFT social insurance fund includes all federal trust funds. By far the largest part of the trust fund total is accounted for by social insurance funds. According to the Trustees' Reports for the various funds, in 2010 the OASDI ratio will be 2.39. The HI fund is projected to be exhausted by 2004 (intermediate case). It does not appear that the likelihood of a slackening of taxable wages and salaries with rapid health care price growth discussed here has been considered in the macroeconomic assumptions underlying the trust fund viability calculations.

26. The relationship between health care outlays and prices and the viability of the current social insurance system is currently under study as a joint project of the Health Care Financing Administration and INFORUM.