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Are Rising Health Care Costs Reducing  
U.S. Global Competitiveness?

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### ***Introduction***

The notion of a relationship between rising health care costs and declining competitiveness has become something of a mantra among U.S. auto executives, who frequently complain in “per-vehicle” terms when quantifying the extent of the health care “burden.” More recently, these complaints have been extended to the macro level, as numerous researchers, reporters and politicians, have echoed the sentiments of the Big Three, arguing that rising health care costs are reducing the competitiveness of U.S. firms in the global marketplace. Surprisingly, the claim has been promulgated with little effort to substantiate it on the basis of empirical evidence. The purpose of this paper is to offer an informed opinion regarding the validity of these claims. Thus, in what follows, we seek empirical evidence to affirm (or cast doubt upon) the claim that increasing health care costs are reducing the competitiveness of U.S. firms. To do this, we examine unit labor costs (not just the cost of health care) to determine whether U.S. producers face a comparative disadvantage relative to competitor nations where universal health care coverage prevails. We also explore alternative explanations for the problems facing the Big Three as well as the United States’ recent slide from first- to sixth-place in the *World Economic Forum’s* Global Competitiveness Index.

### ***Part I: The Claims Being Made***

In this section, we examine the claims of the U.S. industrial and business community that the increased cost of employer-provided health care coverage has placed U.S. producers at a comparative cost disadvantage. The claim has been especially pronounced in the automobile industry, where CEOs from the Big Three have met privately with President George W. Bush and also testified before Congress about the effects of rising health care costs on their ability to compete with foreign manufacturers. The

Daimler Chrysler Company has testified that it operates at an average \$1,000 per-vehicle cost disadvantage, compared to Japanese-based car manufacturers “due solely to health care costs” (Daimler Chrysler, 2007), and General Motors has shown that it spends about \$1,525 per-vehicle on health-related expenses (Cooney and Yacobucci, 2007, p. 67). Ford Motor Company has emphasized the company’s “competitive disadvantage related to health care costs” (2006-2007), and General Motors has called for global competition that is unfettered by “disproportionate health care costs” (2006).

Broadening the scope of the discussion, the CEOs of America’s Big Three automakers released a joint statement in which they stressed “the serious competitive disadvantage that upwardly spiraling health care costs are placing on our industry and America’s manufacturing base” (Ford Motor Company, 2006a).

But these kinds of claims have not been restricted to corporations in the automobile industry. Executives from other manufacturing firms, such as Intel Corporation, have echoed the sentiments of the Big Three, arguing that increased health care costs threaten U.S. competitiveness and undermine the stability of numerous corporations (Intel, 2006; eHealth Initiative, 2006). And a variety of private research groups have made similar arguments. In both cases, two key points are raised. First, U.S. producers refer to health care expenditure differentials between the U.S. and other industrialized economies. Their complaint is that foreign producers benefit from lower health care expenses as well as slower rates of increase in these costs, compared with the experience in the U.S. The following are typical of the claims being made:

Rising health care costs are a huge burden for American businesses. As U.S. companies compete globally with firms in countries whose health care costs are much lower, it is not just our physical health at stake but our economic health (American Electronics Association, 2006, p. 3).

American manufacturers are finding it increasingly difficult to compete with foreign companies.

Due to high and rising health insurance premiums, businesses find themselves in a competitive disadvantage with foreign competition that have operations in countries with . . . slower health care cost inflation. Over \$1,500 is tacked on to each and every car and truck that General Motors makes because of health care costs (National Coalition on Health Care, 2007, p. 3).

The increasing cost of employer-based health insurance continues to affect the global competitiveness of U.S. companies. [. . .]. When higher health care costs are passed off to the consumers, U.S. employers are placed at a competitive disadvantage compared to employers in other industrialized countries with lower health care costs (The Lewin Group, 2005, p. 21).

While General Motors now spends more than \$1,400 per vehicle on health care costs, non U.S.-based competitors spend as much as \$1,000 less. Aside from the implications of passing these costs along to consumers, the considerable difference burdens U.S. competitiveness in that industry, exemplifying the impact of high health care costs on the nation's international competitiveness (ibid., p. 8).

[H]ealth care is the single most important external cost element for manufacturers – significantly above other countries because of their respective national health care policies. Health care cost reductions are as important to overall manufacturing competitiveness as any other cost element (The Manufacturing Council, 2005, p. 9).

A second point relates to the perceived benefits that accrue to producers in countries with universal health care coverage, where, it is argued, firms can avoid (or contribute relatively little to) the cost of employee health insurance because it is paid for by the government. In contrast, U.S. manufacturers must bear the brunt of employee and retiree health care coverage, which, they argue, drives up their costs and makes their products more expensive. The following are representative of these claims:

. . . health care costs for U.S. companies could greatly undermine their international competitiveness. Many foreign competitors do not incur these costs (American Electronics Association, 2005, p. 27).

Today we [GM] compete mostly against foreign-owned companies whose governments cover much of their employee and retiree health care and pension costs (General Motors, 2006).

Our foreign-based competitors have just a fraction of these costs because they have few retirees in this country. And in their own country, where the bulk of their people are, their government pays a much greater proportion of their employee and retiree health-care costs (Statement by Richard Wagoner, GM Chairman and CEO, in Szczesny, 2004).

Other concerns have been raised regarding the issue of *domestic* competition, where the Big Three contend that they are disadvantaged by the activity of transplant auto manufacturers (Cooney and Yacobucci, 2007, p. 22). Here, the problem is related to the health care and retiree expenditures incurred by the Big Three as compared with domestic-based foreign competitors, who do not have to confront these kinds of “legacy” costs (ibid., p. 22). However, while most of these “transplants” are non-unionized, they still provide health care and retiree benefits to their employees. But being newer investors in the U.S., they are not burdened by the build-up of obligations that have accumulated over many decades. Additionally, American automakers argue that “transplants” employ younger workers for whom health care costs are usually lower (ibid., p. 67).

Before moving on to examine actual cost structures, let us pause to address the claim that producers operating in countries where universal health care coverage prevails do not incur similarly burdensome health care expenses because coverage is paid for by the government. It is simply not the case that universal health care plans allow our foreign competitors to avoid costly contributions to health insurance plans. The fact is, in most of the countries with universal or nearly universal health insurance coverage employers make substantial contributions towards the employees’ health care and retirement insurance. This is done through various social security schemes and/or taxation. The following section examines the way in which the business community shares in the provision of health care in a sample of competitor nations.

## ***Part II: Health Care Financing in Europe and Japan***

Under the German system of nearly universal health insurance coverage, contributions towards health care plans are shared equally between an employer and an employee. Taking the summer 2004 average contribution rate of 14.2%<sup>1</sup>, employees contributed 7.1% of their pre-tax income while employers, in addition to paying wages, contributed the same percentage<sup>2</sup> (Busse and Reisberg, 2004, pp. 58-9).

German firms pay a disproportionate share of the health care bill when an employee's earnings fall below a predetermined level. In that instance, German employers bear the full burden of providing health care insurance for their employees (ibid., p. 59). Social health insurance covers nearly 88% of German population (ibid., p. 57).

One of the largest employer contribution rates to social health insurance funds is observed in France, where employers contribute 12.8% of an employee's gross salary, while the employee's share is 0.75%<sup>3</sup> (Dixon and Mossialos, 2002, Appendix Table A3). Social health insurance covers the entire population of France (ibid., Appendix Table A3). The Netherlands provides another example of health care financing through social health insurance schemes. Here, employer payments to sickness funds (ZFW) constitute 6.75% of an employee's gross income, while an employee's share is 1.7%<sup>4</sup> (Busse, 2002, p. 63). Social health care insurance under the Sickness Funds Act (ZFW) covers 64% of the Netherlands' population (Dixon and Mossialos, 2002, Appendix Table A3). Finally, in Japan, both

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<sup>1</sup> This rate does not include contributions to statutory accident insurance and long-term care insurance funds (see Busse and Reisberg, 2004, pp. 58-9).

<sup>2</sup> This parity was expected to change from July 2005, leading to higher contributions for the employees. Employees were expected to pay an additional contribution of 0.4%, which would be increased to 0.9%, leading to a financing mix of approximately 54% for employees and 46% for employers (Busse and Reisberg, 2004, p. 59).

<sup>3</sup> Since 1998, most of the employee component of social health insurance contributions in France was replaced by an income tax of 5.25% (called 'general social contribution' ) (Sandier et. al., 2002, p. 34).

<sup>4</sup> Health care insurance under the Sickness Funds Act (ZFW) covers normal, necessary medical care. Long-term care and high-cost treatments (AWBZ) are financed through employee contributions of 10.25% of taxable income. AWBZ covers the entire population of the Netherlands (Busse, 2002, pp. 62-3).

employers and employees contribute 4.25% of gross earnings towards government-managed sickness funds (covering around one third of the total population). In addition, employers pay 4.8% and employees 3.8% of gross earnings into what are known as society-managed sickness funds (covering around a quarter of the total population), and make contributions to municipal sickness funds (covering around 38% of the population) where contribution rates vary so much that it does not make sense to calculate an average (Henke and Schreyögg, 2004, pp. 47, 58). Membership in one of the sickness fund schemes is compulsory for the entire population of Japan (*ibid.*, p. 42).

Where employer and employee contributions to social health insurance schemes occupy a less prominent role in health care funding, taxation is used as an alternative source of finance. In the United Kingdom, value-added taxes (VAT) of 17.5% and income taxes (10%, 22% and 40%) are used as a main source of national health insurance funding (Dixon and Robinson, 2002, p. 104). Contributions to social health insurance schemes constitute only 9.8% of total health care financing in the United Kingdom. Here, employers contribute 11.9% of an employee's earned income, while employees pay 10% (Dixon and Mossialos, 2002, Appendix Table A2, Table A3). In Sweden, national health care is mainly financed through local income taxation (León and Rico, 2002, p.92). Local taxes are proportional to income, and the average combined rate of local income taxation was 31.65% in 1998. Social health insurance contributions constitute an additional source of health care funding in Sweden. These contributions are compulsory for all those in employment, and are paid by the employers as 8.5% of their employees' salaries (*ibid.*, p. 93). In Denmark, where employers make no contribution based on employee payrolls, general taxation is relied upon to finance the cost of providing health care (Vallgård et al., 2002, p. 19). Here, the nation relies upon personal income taxation, VAT (25%), and corporate income taxes (*ibid.*, p. 19).

In sum, many of our competitors in Europe and Japan rely on contributions from employers and employees and/or taxation to sustain their national health care systems. Among the countries examined, employer contribution rates, as a share of an employee's gross income, vary from a low of 6.25% in the Netherlands to a high of nearly 13% in France. Thus, we do not find evidence that U.S. manufacturers are disadvantaged by the existence of universal health care in competitor nations. To provide a comparison, in 1990 U.S. private sector employers paid roughly 8% of employee's wages and salaries towards private health care insurance funding. This figure was around 8.8% in 1995, 8.44% in 2000, and roughly 10% in 2003.<sup>5</sup>

One might rightly object that the levels of employee compensation vary across countries, so that it is not sufficient to simply compare the *share* of earnings paid to support employee health benefits. However, it is also true that health care expenses are only one element within the total structure of all labor-related costs, including taxes<sup>6</sup>. Thus, "it is not meaningful to single out one particular component," such as health care expenses, "and then to argue that the amount of this one component per unit of output makes a manufacturer noncompetitive in the product market" (Reinhardt, 1989, p. 8). Whenever such claims are being made, the role of all other labor-related expenses, including taxes, – where U.S. manufacturers may be more advantaged – is completely ignored. This means that even if U.S. producers can be shown to incur larger absolute *levels* of health care expenses relative to their competitors, this would not necessarily place them at a comparative disadvantage in terms of *total labor costs*. Therefore,

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<sup>5</sup> Authors' calculations based on the data provided in Cowan and Hartman, 2005, p. 8. Indicators obtained as the ratio of private business health care spending (billions \$) to wages and salaries (billions \$) in the private sector.

<sup>6</sup> Total labor costs include all labor-related costs incurred by employers including employer contributions to statutory social security schemes or privately funded social insurance schemes, and taxes regarded as labor costs (see OECD or U.S. Bureau of Labor Statistics definitions and methodology).



instead of arguing in terms of the relatively high cost of health care per unit of output, it would be more appropriate to examine total labor-related expenses incurred in the production of one unit of output<sup>7</sup>.

But it is also true that productivity levels vary across borders, so any claim regarding a competitive disadvantage in the U.S. must also take this into account. This means that even if U.S. producers can be shown to incur higher total labor costs relative to their competitors, this does not necessarily place them at a comparative cost disadvantage once we account for productivity differentials across countries. For example, while Japan benefits from lower levels of manufacturing labor compensation (\$21.05 per hour relative to \$23.65 in the U.S. in 2005) and lower levels of employer-incurred social insurance expenditures and labor-related taxes (U.S. Department of Labor, 2007, pp. 22, 24), it faces weaker levels of manufacturing labor productivity (Inklaar et al., 2003, pp. 11-12), which can offset (some or all of) the competitive advantage Japan enjoys in labor-related expenses.

### ***Part III: Unit Labor Costs***

Perhaps the best way to empirically address the claim that rising health care costs are reducing U.S. competitiveness is to compare unit labor costs (ULC) in a sample of competitor nations. Unit labor costs are calculated as the ratio of total labor costs to real output:

$$ULC = \frac{TotalLaborCosts}{RealOutput}$$

This ratio measures the total labor costs<sup>8</sup> expended in the production of one unit of (real) output in a particular industry, sector or economy. Both ULC level and trend comparisons across countries are routinely performed in studies of international competitiveness. The advantage of using ULCs is that

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<sup>7</sup> Of course, it would be more meaningful to refer to the total costs of production, not just the cost of labor. This type of analysis is beyond the scope of this paper.

<sup>8</sup> Total labor costs include all labor-related costs incurred by employers including employer contributions to statutory social security schemes or privately funded social insurance schemes and taxes regarded as labor costs.

they take into account both total labor costs *and* worker productivity. For our purposes, the measures are important because they demonstrate that a country's competitiveness can be improved by decreasing labor costs *or* improving labor productivity. This means that, with respect to the claim that rising health care costs are reducing U.S. competitiveness, we must recognize that cost competitiveness is not only based on labor costs growth (van Ark et al., 2005, p. 2).

There are essentially two ways to construct ULC measurements: they can be expressed in terms of national currencies or in terms of common-currency units. If the goal is to undertake cross-country comparison analysis, then ULCs must be measured in terms of a common-currency unit. In order to arrive at a measurement based on a common-currency unit, both the numerator and the denominator in the ULC ratio must be converted to a common-currency unit. The numerator, which expresses total labor costs, is routinely converted to a common-currency unit using the prevailing exchange rate.<sup>9</sup> However, when it comes to converting the denominator, the conversion can be handled in one of two ways. Most studies tend to favor a purchasing power parity (PPP)-based conversion<sup>10</sup> of output volume in the denominator of ULC measures (Sparks and Greiner, 1997). When this is done, differences in relative prices are accounted for, and the output volume measure is reported in terms of a common-currency unit. This also reflects the fact that exchange rate fluctuations do not affect labor productivity, thereby insulating the denominator from these effects. Although it has been commonly argued (Cobet and Wilson, 2002; Neef et al., 2003) that "market exchange rates are not suitable as a basis for

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<sup>9</sup> For example, if the prevailing \$/€ exchange rate is \$1.55/€ and total labor costs in the German manufacturing sector are €30 per hour, then the numerator becomes \$46.50.

<sup>10</sup> However, the purchasing power parities that are available for gross domestic product (GDP) cannot be applied to each component industry, such as manufacturing (Neef et al., 1993, p. 58). For this reason, industry-specific currency conversion factors are used, called unit value ratios (UVR), and based on producer output data (Von Ark and Timmer, 2001, p. 44) rather than derived from the expenditure side of the national accounts (Neef et al., 1993, p. 58). PPP/UVR-based ULC capture the differentials in ULC across countries due to the difference in nominal labor costs, nominal labor productivity (unadjusted for price level differences), and relative price levels (van Ark et al., 2005, p. 4).

comparing output levels” across countries (Neef et al., 1993, p. 47), the Organization for Economic Co-operation and Development (OECD) continues to report a measure of ULCs by converting output measures to a common-currency unit using prevailing exchange rates. Thus, despite an academic preference for PPP-adjusted ULC measures, the OECD produces an exchange rate-adjusted ULC measure, defending its methodology as “useful to compare developments in unit labor costs across countries...” (OECD definitions).

Below we examine ULCs using both OECD exchange rate-adjusted and the more conventional PPP-based approaches. Table 1 presents data on OECD exchange-rate-adjusted manufacturing ULCs. Declining rates of growth in ULCs (or their negative growth rates) suggest an improvement in a country’s competitive position. The striking characteristic of this data is that, with few exceptions, the U.S. has sustained lower ULCs than nearly all of its European competitors over the course of the past 15 years (1990 - 2005). The only sustained challenge to this dominance came during 2000-2001, when Finland, Spain, Sweden and the Netherlands all posted brief reductions in their ULCs. But these declines were short-lived, as ULCs in the European manufacturing sector began to rise again in 2002, parallel to the appreciation of the Euro currency. The ULCs incurred by Japanese manufacturers, however, have remained considerably below U.S. levels (with the exception of 1994 and 1995), suggesting that Japanese producers enjoyed a sustained advantage relative to U.S. producers.

**Table 1: Exchange-Rate-Adjusted Unit Labor Costs in Manufacturing**

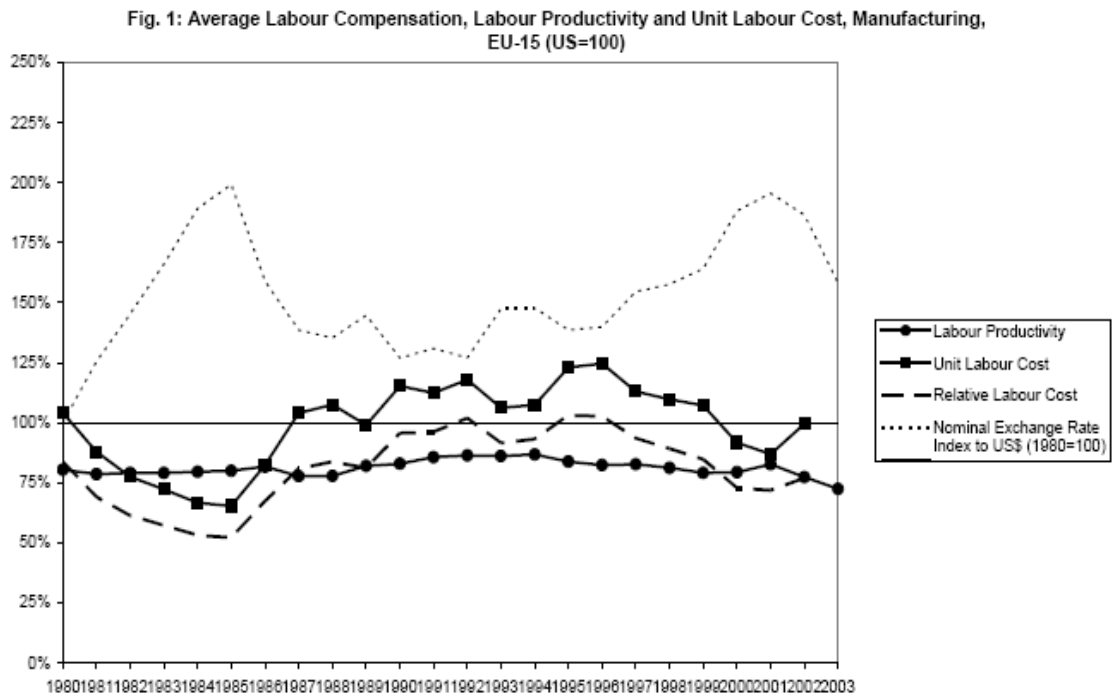
	United States	Finland	France	Germany	Japan	Spain	United Kingdom	Netherlands	Sweden	Euro Area
<b>1990</b>	0.67	1.11	0.97	0.89	0.47	0.81	0.75	0.8	1.20	0.86
<b>1991</b>	0.70	1.12	0.96	0.90	0.52	0.86	0.80	0.81	1.27	0.88
<b>1992</b>	0.71	0.94	1.01	1.03	0.57	0.94	0.77	0.89	1.31	0.96
<b>1993</b>	0.72	0.69	0.95	1.02	0.65	0.82	0.66	0.85	0.91	0.90
<b>1994</b>	0.70	0.73	0.94	1.01	0.71	0.77	0.68	0.83	0.85	0.89
<b>1995</b>	0.68	0.91	1.02	1.19	0.74	0.84	0.70	0.93	0.90	0.99
<b>1996</b>	0.67	0.87	1.01	1.15	0.62	0.87	0.70	0.88	0.99	0.98
<b>1997</b>	0.65	0.74	0.87	0.96	0.56	0.76	0.75	0.78	0.84	0.86
<b>1998</b>	0.65	0.71	0.82	0.95	0.53	0.76	0.80	0.78	0.78	0.84
<b>1999</b>	0.64	0.66	0.78	0.91	0.59	0.74	0.79	0.74	0.70	0.80
<b>2000</b>	0.66	0.54	0.67	0.78	0.58	0.65	0.74	0.63	0.63	0.68

<b>2001</b>	0.67	0.53	0.65	0.76	0.54	0.65	0.70	0.63	0.60	0.67
<b>2002</b>	0.64	0.54	0.70	0.81	0.50	0.70	0.76	0.68	0.61	0.71
<b>2003</b>	0.64	0.63	0.82	0.96	0.50	0.87	0.82	0.83	0.72	0.86
<b>2004</b>	0.61	0.67	0.91	1.03	0.50	0.97	0.92	0.90	0.73	0.93
<b>2005</b>	0.61	0.67	0.89	0.98	0.49	..	0.96	0.90	0.69	0.92

Source: OECD online statistical database, July 2007

Tables 1A and 2A in the Appendix present OECD exchange-rate-adjusted ULCs for the industrial and business sectors, and the results are strikingly similar to those obtained (above) in the manufacturing sector. That is, based on OECD exchange-rate-adjusted ULC measures, the U.S. economy does not seem to have been in a persistent ULC disadvantage relative to European manufacturers (1990 - 2005), although it does appear that the U.S. was disadvantaged relative to its Japanese competitors (again, with the exception of 1994 and 1995).

We now turn to an examination of PPP-based ULC measures. Figure 1 depicts ULCs for the EU-15 manufacturing sector relative to that of the U.S. for the period from 1980 to 2003.



Source: van Ark et al., 2005, p. 7

With the U.S. serving as a benchmark, the EU-15 enjoys a relative ULC advantage whenever these costs fall below the benchmark 100% level. Throughout most of the 1980s, the EU-15 enjoyed lower ULC levels compared to the U.S. experience. Beginning in the late 1980s, however, this relative advantage disappeared, as ULCs in the EU-15 rose above U.S. levels and remained there for more than a decade. By the turn of the century, European manufacturers had regained their competitive advantage, however, this advantage also disappeared as ULCs in the EU-15 converged to U.S. levels by 2002. With minor exceptions, the PPP-based results are consistent with the results obtained using OECD exchange-rate adjusted ULC measures.

In contrast, the U.S. - Japan ULC differentials yield different results when PPP-based measures are used instead of the exchange-rate adjusted measures. This can be seen in Figure 2, where ULCs in Japan were above the U.S. level throughout the 1990s. Again, this is in sharp contrast to the results derived using the exchange-based measured, which implied a relative ULC advantage for Japanese manufacturers throughout most of this period.



Source: Inklaar et al., 2003, p. 15

Rather than lower labor costs, it is higher levels of labor productivity in the U.S. manufacturing sector that help explain the relative ULC advantage the U.S. enjoyed throughout most of the period studied. For example, while the average worker compensation in the EU-15 manufacturing sector remained below the U.S. levels during most of the period from 1980 to 2003, the average labor productivity there remained roughly 15-20% below the U.S. experience. Despite these lower compensation levels, European manufacturers remained at a ULC disadvantage relative to the U.S. producers as a result of lower EU-15 labor productivity (van Ark et al., 2005, pp. 7, 10). The same productivity factors help explain why the PPP-based analysis showed the U.S. at a ULC advantage relative to Japanese manufacturers. As Figure 3 below shows, labor productivity in Japan lagged behind U.S. levels from 1980 to 2002. This more than offset the benefits that accrued to Japanese manufacturers from lower relative labor costs. These findings reinforce the conclusion that ULC competitiveness is not only based on labor costs, as labor productivity remains an important factor.



Source: van Ark et al., 2005, p. 8

Finally, any study of international competitiveness must account for the impact of exchange rate fluctuations. For example, any appreciation of European or Japanese currencies will drive up the exchange-rate adjusted cost of labor (i.e. the numerator) thereby increasing ULCs. For the EU-15 this can be seen in Figure 1 above, which shows that beginning in the mid-1990s, a sharp depreciation of the European currencies (and since 1999 also the Euro currency) was accompanied by a downward trend in EU-15 manufacturing ULCs. Then, as the Euro began to appreciate in 2001, this pushed ULCs upward (van Ark et al., 2005).

In sum, the above analysis demonstrates two key points. First, a nation's competitiveness, as measured by ULCs, depends upon three major factors: nominal labor compensation, labor productivity and exchange rate fluctuations. Hence, (labor) costs alone do not determine a country's ability to compete. Rather, increases in labor costs can be offset by favorable movements in worker productivity and nominal exchange rates. Secondly, there is little empirical support for the claim that U.S. competitiveness has been undermined by rising health care costs. Indeed, U.S. manufacturing firms appeared to enjoy a relative ULC advantage throughout most of the period from 1990 to 2006. The only exception here is Japan, where exchange-rate adjusted ULC measures placed the U.S. at a relative disadvantage. But even in the case of Japan, the results are not unambiguous, because the PPP-based analysis suggested that U.S. manufacturers actually held a strong competitive advantage over Japan during much of this period.

#### ***Part IV: Some Labor Market Responses***

In the previous section, we examined ULCs to address the claim that rising health care costs are reducing U.S. competitiveness. In this section, we address the claim from another perspective. Here,

we consider the extent to which employers can offset the rising costs of health care benefits through various labor market practices.

As Reinhardt (1989) and Feldstein (1999) have shown, rising health care costs can be defrayed by suppressing wage growth and reducing non-medical benefits in an effort to moderate the rise in total labor compensation package (which includes *both* wages and benefits, such as health care insurance, pensions, etc.). Evidence of this behavior can be found in U.S. business sector, where employers' spending on health care benefits has outpaced the rate of growth of wages and salaries since 2001. Despite health care expenditure growing at an annual average rate of more than 7% from 2001 to 2003, the overall worker compensation package grew at an annual average of 2.2%, while the average wage growth was that of 1.23%. This means that total compensation package did not grow in line with health benefits inflation, as employers were able to keep wage growth low and reduce (or eliminate) certain non-medical benefits (Cowan and Hartman, 2005, p. 8). In other words, "employers trade wages for rising [health] benefit costs, resulting in slower wage or non-medical benefit growth for workers" (*ibid.*, p. 9).

Of course, the wage-benefit trade-off is not the only mechanism through which rising health care costs may be offset by employers. Cost-shifting to employees and health benefits eligibility management are among other common strategies. As Ford Motor Company (2006) has recently reported, it has taken steps "to have employees and retirees bear a higher proportion of the costs of their health care benefits" as well as introduced other measures "to offset health care inflation, including eligibility management" (Ford Motor Company, 2006, p. 11). As a result of these and other coping strategies undertaken by U.S. businesses, U.S. private sector employers' share in total (private) health care financing has declined from 76% in 2000 to 74.6% in 2003 (Cowan and Hartman, 2005, p. 11). Subsequently, household spending on private health insurance premiums and individual policy premiums has jumped from 23%



of household spending in 1987 to 34% in 2003 (ibid., p. 12). These statistics are also paralleled by declining private health insurance enrollment, falling manufacturing employment, reduction in full-time jobs and a dramatic shift toward part-time service sector employment where the likelihood of employer-provided health insurance coverage is typically low (ibid., p. 11). Even for the remaining manufacturing jobs “the likelihood of coverage by employer-sponsored health insurance diminished” (ibid., p. 11). For a more detailed account of employers’ coping strategies with rising costs of health care benefits see Kelton (2008).

These coping tactics, such as the wage-benefit trade-off, increased premium contributions by employees, reduced coverage rates, falling manufacturing employment and growing service sector and part-time jobs, among others, demonstrate that the employees are the ones disadvantaged most by rising costs of health care, rather than comparative costs structures, as the producers often claim. Given flexible labor market practices and a variety of cost off-setting strategies, rising health care costs do not necessarily reduce producers’ cost competitiveness, and, instead, it is the employees who suffer most.

### ***Part V: A Broad-Based Approach to Competitiveness***

In part III of this paper, we used ULCs to consider the impact of worker compensation, productivity and exchange rate fluctuations on a country’s competitiveness. The drawback of this quantitative cost-based approach lies in its failure to consider the impact of qualitative non-cost (price) factors on a country’s competitiveness.

To the neglect of such qualitative variables, it is commonly assumed that as costs and prices increase, producers tend to suffer a decline in global market shares. However, it has been empirically demonstrated that this negative relationship does not always hold (Fagerberg, 1996, p. 40). In fact, the relationship is quite the opposite when trade performance of developed capitalist economies is

considered. What was convincingly shown by Kaldor is that “for developed industrialized economies the association between relative unit costs (prices) and relative market shares in international trade is positive rather than negative as is commonly assumed (ibid., p. 40). This so called “Kaldor Paradox” implies that growing relative unit costs (prices) move together with growing market shares.

The key to this “paradox” is that developed capitalist economies do not compete solely on the basis of cost (price) factors. This idea dates back to J. Schumpeter: while low-income economies derive their competitive advantage from low-cost labor and/or natural resources (i.e. theirs is cost (price)-based competitiveness), the cost (price)-based competition is relatively less important for developed industrialized economies, where non-price qualitative factors outweigh relative cost (price) considerations, more so in the case of durable consumer goods such as automobiles (see also The National Research Council, 1992, p. 2; World Economic Forum, 2004).

In particular, product quality, technology, features, design and customization, development cycle time, time from concept to customer, after-sales services, relations between suppliers and customers, product support, marketing, effective utilization of human and technical resources, effective integration of supplier efforts (Andrea, 1992, p. 15), etc. cumulatively offset relative (cost)-price differentials among competing products. As consumer demand shifts towards products of superior quality, with unique features and customization, producers tend to focus on their technological and innovative capabilities, research and development, high-quality equipment and materials, manufacturing process sophistication, process control and design, special skills and skilled labor, etc.

As production processes become ever more high-tech and knowledge-based, traditional cost-cutting strategies (e.g. employment of cheap labor force) are superseded by such alternatives as process and product innovation, value chain specialization, modular production, specialization in ‘core’ competencies (European Commission, 2004, p. 165), minimization of work in process (efficient work

flow), reduction of inventories and material waste, just-in-time-production techniques, together with effective managerial strategies, organizational structure and relationships, and quality procedures (The National Research Council, 1992, pp. 4, 81-2). In this high-tech and knowledge-based environment “the critical labor issue shifts away from cost to quality” (ibid., p. 70, 81), where employment of skilled labor force offsets direct labor cost disadvantages (ibid., p. 6). As labor input continues to decline as a percentage of total manufacturing costs, the labor cost argument has also become relatively less important (ibid.).

As the Committee on Comparative Cost Factors and Structures in Global Manufacturing concluded, “[t]he more cost data are scrutinized, the clearer it becomes that a strict cost analysis cannot capture all the variables that determine where firms manufacture or how competitively they manufacture,” revealing the dangers of taking a limited cost-based approach (ibid., p. 19). In what follows, we will consider a range of such qualitative (non-price/cost) variables that matter for the global competitiveness of the automotive industry.

### ***Part VI: The Global Competitiveness of the Automobile Industry***

Recently, global warming and carbon resources constraints have become among the major issues impacting the standards in global automobile manufacturing. The gloomy prospects for the future of carbon fuels, mounting fuel prices, rising consumer awareness of global climate change, and a growing demand for environmentally-friendly vehicles have compelled auto-makers worldwide to focus on fuel-efficiency, low-emissions technologies, alternative fuels, and vehicle recyclability, as they perceive the alignment with green as a source of competitive advantage (Korth, 2007, p. 16).

Environmental efficiency, vehicle safety, quality superiority and uniqueness of features appear to be among the major determinants of automobile industry’s competitiveness. Japanese vehicles seem to

have it all, allowing Japanese auto-makers to achieve unprecedented growth rates in U.S. market shares (Cooney and Yacobucci, 2007, p. 75). Perceived as “better equipped, well designed, more reliable, and cheaper to run and [to] hold their value better” (Maxton and Wormald, pp. 28-9), Japanese brands like Toyota and Honda rank near the top of the list in almost all quality surveys conducted in the U.S. (ibid., pp. 25, 28). According to *Detroit Free Press* (March 7, 2005) “Japan Dominates Magazine List” report, “[t]wenty-one vehicles, *all of them Japanese*, scored combined ‘high’ ratings for safety, reliability, fuel economy and owner satisfaction” (in Cooney and Yacobucci, 2007, p. 75; ft. 108, p. 154). A 2005 ranking of cars and trucks, published by *Consumer Reports*, showed that nine of the top ten choices were given to one of three Japanese nameplates, namely Toyota, Honda and Subaru (ibid., p. 75). Amid growing fuel prices, Japanese vehicles like Honda Fit, Toyota Yaris and Nissan Versa stand out as timely, efficient and unique, while Toyota Prius is benefiting from being the leader in hybrids (Vasilash, 2007, p. 6).

Ironically, while the Big Three complain about the loss of competitiveness due to higher prices of their vehicles compared to foreign automobiles (allegedly due to per-vehicle health care costs differentials), they make an important behavioral observation about the ‘spending habits’ of consumers in industrialized economies, noting their “propensity to purchase over time higher end, more expensive vehicles and/or vehicles with more features” (Ford Motor Company, 2006, p. 13). Taking this propensity into account, the marketing experts from Ford Motor Company expect that in the U.S. and other mature markets the “growth in spending on vehicle mix and content will change generally in line with GDP or above” yielding significant benefits to revenue growth in the automotive industry (ibid., p. 13). In such an environment, a manufacturer’s competitiveness will deteriorate should he focus narrowly on input cost minimization, instead of implementing continuous improvements in product safety, quality, design, features, and environmental performance. Thus, rather than cutting production costs

and producing more standardized and cheaper autos, auto-makers must focus on product proliferation “building an ever wider range of more lavishly equipped” and more expensive vehicles (Maxton and Wormald, 2004, p. 25) as consumers are willing to pay higher prices for vehicles that address their sophisticated, unique, and changing tastes and preferences.

Considering consumer preferences for unique, timely, superior quality vehicles with high environmental standards, the problems of the Big Three could be attributed to issues more fundamental than rising costs of health care. Firstly, price (cost)-based competitiveness has been replaced with global competition in innovation, where competitive advantages derive from technological advances, thus making product and process innovation “a pre-requisite for competitiveness” (European Commission, 2005, pp. 14-5, 34-5). For example, flexible manufacturing techniques pioneered by the Japanese producers have given them an important competitive advantage over the U.S. auto-makers, as they “have been able to respond to changes in market demand in a manner more agile than the Big Three, with high quality products ...” (ibid., p. 75). Such flexibility and modular design that allow producers to “mix and match” various component parts to create differentiated products have recently become an important source of competitive advantage in automobile manufacturing (Korth, 2007, p. 17).

Secondly, it has been widely argued that the traditional model mix of the Big Three does not adequately capture the current developments in rising fuel prices and growing environmental awareness of consumers worldwide. Realizing the loss of a competitive advantage here, the Big Three automakers have taken efforts to transform their model mix in order to address these important challenges. For example, Ford Motor Company has “embarked on a plan to restructure aggressively [its] Automotive business to address the realities of [...] higher fuel prices and the shifting model mix from trucks and large SUVs to more fuel-efficient vehicles” (Ford Motor Company, 2006, p. 12). As a compelling

necessity to remain competitive, the company has pledged to invest in flexible-fuel, hydrogen, and hybrid power trains, as well as fuel-saving technologies (ibid.).

Thirdly, quality issues seem to have plagued the U.S. auto-makers. For example, some have attributed a recent decline in Ford Motor Company's market share to the abandonment of "Quality is Job One" principle (Vasilash, 2007, p. 6). And, finally, experts have argued that "there is a qualitative difference in corporate management and organization" between foreign automakers and the Big Three, enabling foreign producers "to identify consumer needs and tastes more readily than the two largest [GM and Ford] Big Three auto manufacturers" (Cooney and Yacobucci, 2007, p. 75).

Another important aspect to be considered in the global competitiveness debate is that consumer preferences and product expectations vary across regions. For example, compared to North American consumers, European buyers share a much stronger preference for "clean, lean and safe" vehicles which help meet a host of societal goals such as clean air, reduced greenhouse gas emissions, reduced dependence on imported fossil fuels, and vehicle recyclability. This makes vehicle environmental performance one of the greatest sources of competitive advantage for auto-manufacturers in Europe (European Commission, 2005, p. 11, 13-14). Stronger environmental concerns on the European (as well as Asian) markets create a gap between the model mix of the Big Three and the expectations of consumers there<sup>11</sup>, which helps explain why the market shares of the U.S. auto-makers have been continuously declining in Europe and Asia (Cooney and Yacobucci, 2007, p. 78).

Another distinction between the European and North American buyers concerns the relative importance of vehicle branding. While in Europe brand strength matters enormously making "brand and

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<sup>11</sup> As was mentioned above, American auto-makers have recently embarked on a plan to shift their model mix from trucks and large SUVs to more environmentally-friendly vehicles, as they continue to invest into greener technologies.

brand identity [...] number one”<sup>12</sup> and “de-emphasizing the competitive pricing aspect,” on North American markets “brand matters, but value matters more” (Maxton and Wormald, 2004, pp. 26, 28). North American customers are more “interested in value –a decent-sized car for the money and one which functions decently” shifting producer model mix toward simpler, value-based vehicles with higher life cycles (ibid., p. 27). Realizing the importance of value on North American markets, Japanese car manufacturers there “offer very simple product lines, without anything like the kind and variety of change they practice in Japan” (ibid., p. 28). European consumers, on the other hand, are not the type of ‘rational buyers’ primarily interested in value-based vehicles. Rather, they are looking for vehicles with styling, ‘character,’ ‘pedigree,’ evolution, ‘heritage,’ with distinguishable characteristics carried over from one model to the next. This evolutionary tradition has been clearly maintained by Mercedes-Benz, BMW, as well as Peugeot and Volkswagen in the volume car sector. Price ceilings barely exist on the European car markets, as automobile manufacturers rely on brand identity as a source of demand and premium pricing (ibid., pp. 27-8).

Notably, the same brand may not be successfully transplanted from one regional market to another, as the meaning of a brand changes from one cultural milieu to the next. The Ford brand, for example, “is perceived as a blue-collar one” in Europe, “for which no-one will pay a premium” even if a product is known to be a technical leader in its class, as is the case with Ford Mondeo (ibid., pp. 26-7). Similarly, in Japan “Ford carries the stigma of the unacceptability of American cars” (ibid., p. 27). Another example concerns the varying success of Japanese vehicles on European and American markets. While the top Japanese brands like Toyota and Honda enjoy enormous success in the U.S. due to their ‘value’ aspect, these brands have weak images in Europe, and their market shares there are

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<sup>12</sup> Maxton and Wormald, 2004, p. 26, citing R. Eckrodt, former president of the Mitsubishi Motors.

mostly minor. Even in the upper segment of the car market, Lexus, which was very successful in replacing other luxury brands in the U.S., was not doing well in Europe (ibid., p. 28).

In addition, when studying automobile competitiveness, the impact of national affinities on consumer choices should not be overlooked. Persuaded “that their national products are better or at least worth defending,” many consumers prefer their national brands (ibid., p. 27). Such prejudices are particularly strong in Asia, where Japanese and Korean consumers demonstrate stronger preferences for Japanese and Korean vehicles respectively. Similarly, on the European markets, particularly in Germany, France and Italy, consumers have a strong bias towards their national automobiles. Preferences for domestic automobiles can also be seen in some parts of the U.S., such as Middle America, while the highest rates of foreign vehicles penetration are observed on the west and east coasts of the country (ibid., p. 27).

Considering the above, it appears that the success or failure of the Big Three on global and domestic markets must depend upon a multitude of factors that have little, if anything, to do with per-vehicle costs of health care benefits. However, attempting to shake off the health care ‘burden,’ the Big Three have purposefully narrowed the competitiveness debate to cost competitiveness issues, despite the common recognition that competitive performance is not just a matter of relative costs structures.

### ***Part VII: The World Economic Forum’s Competitiveness Rankings***

Amidst the claims of the U.S. business and manufacturing community that rising health care costs are reducing U.S. global competitiveness, it may be of interest to examine actual competitiveness rankings juxtaposing countries’ competitive performance against each other over time. Here, the World Economic Forum’s (WEF) competitiveness indices are among the most prominent competitiveness indicators widely quoted in media and policy statements, as well as cited by academics in their research,



“feeding an insatiable appetite for benchmarking competitive performance” (Lall, 2001, p. 2). However, prior to examining the actual rankings produced by the Forum, let us briefly analyze the Forum’s methodology and the criteria employed in the construction of the indices.

To begin with, the Forum’s definition of competitiveness is *not* related to a country’s export performance, an export-based understanding of competitiveness being dismissed as “deeply flawed” (Porter, in WEF, 2004, p. 30). Instead, the Forum’s economists argue that competitiveness should be understood as “that set of factors, policies and institutions which determine the level of *productivity* of a country” (WEF, 2006, p. XIII, emphasis added). For the competitive performance, the goal is “not exports per se” but productivity of the entire economy<sup>13</sup> which determines a nation’s standard of living (WEF, 2004, p. 31). The three pillars of productivity, the standard of living, and a nation’s potential “to attain sustained economic growth over the medium and long term” define the Forum’s approach to competitiveness, which is also conspicuous for the absence of any explicit cost (price) considerations (ibid., p. 4).

Competitiveness finds its ultimate expression in the prosperity that countries can sustain over time (WEF, 2006, p. XXIV).

It wouldn’t be an overstatement to conclude that the Forum’s approach to global competition becomes a study of productivity and “incomes and growth as a whole” rather than an analysis of inter-country “*conflict* in gaining market shares” (Lall, 2001, p. 11).

When the Forum’s *Global Competitiveness Index* (GCI) is constructed, a country’s relative success in gaining global market share is *not* the criterion on the basis on which the *Index* is computed. Rather, it is a country’s potential to attain and sustain macroeconomic growth over time that stands

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<sup>13</sup> Productivity is defined as “the value of goods and services produced per unit of the nation’s human, capital, and natural resources” (WEF, 2004, p. 31). Hence, productivity depends on the market prices of a nation’s goods and services, as well as on the efficiency with which outputs can be produced (ibid., p. 31).

behind the GCI rankings. Computed on the basis of factors that are deemed critical to driving productivity and growth (such as the quality of domestic institutions, infrastructure, macroeconomic environment, health, education, training, market efficiency, technological readiness, business sophistication, and innovation), the *Index* is also referred to as the *Growth Competitiveness Index* (WEF, 2006, p. XIV).

Another competitiveness indicator developed at the Forum is the *Microeconomic Competitiveness Index* (MCI), also referred to as the *Business* or *Current Competitiveness Index*. While the GCI places a greater emphasis on the macroeconomic, institutional and technological foundations of *future* growth rates and productivity gains in a country, the MCI captures the microeconomic foundations of competitiveness at the level of existing firms, in their impact on *current productivity* and *current economic performance*, measured by the level of GDP per capita (Lall, 2001, p. 13, citing WEF, 2000, p. 14, emphases added). The specific factors on the basis of which the MCI is calculated are classified into the broader categories of company operations and strategy, factor and demand conditions, related and supporting industries, context for firm strategy and rivalry, etc. (WEF, 2004, pp. 42-3). We advise the reader to consult the Appendix for a more detailed description of these factors.

Table 2 below presents the Forum's *Microeconomic* (or *Current*) *Competitiveness Index* rankings for the top ten performing economies (1998 - 2006), while Table 3 depicts the *Global Competitiveness Index* rankings for the ten leading nations (1997 - 2006).

**Table 2: World Economic Forum's Microeconomic Competitiveness Index Rankings (Ten Leading Countries)**

Rank \ Year	1	2	3	4	5	6	7	8	9	10
1998	United States	Finland	Netherlands	Germany	United Kingdom	Canada	Sweden	Denmark	Switzerland	Singapore
1999	United States	Finland	Netherlands	Sweden	Switzerland	Germany	Denmark	Canada	France	United Kingdom
2000	Finland	United States	Germany	Netherlands	Switzerland	Denmark	Sweden	United Kingdom	Singapore	Australia
2001	Finland	United	Nether-	Germany	Switzer-	Sweden	United	Denmark	Australia	Singapore

		States	lands		land		Kingdom			
<b>2002</b>	United States	Finland	United Kingdom	Germany	Switzerland	Sweden	Netherlands	Denmark	Singapore	Canada
<b>2003</b>	Finland	United States	Sweden	Denmark	Germany	United Kingdom	Switzerland	Singapore	Netherlands	France
<b>2004</b>	United States	Finland	Germany	Sweden	Switzerland	United Kingdom	Denmark	Japan	Netherlands	Singapore
<b>2005</b>	...	...	...	...	...	...	...	...	...	...
<b>2006</b>	United States	Germany	Finland	Switzerland	Denmark	Netherlands	Sweden	United Kingdom	Japan	Hong Kong SAR

*Source: World Economic Forum, 1998, 2000, 2002, 2003, 2004, 2006*

According to the Forum's MCI rankings (Table 2), from 1998 to 2004 the U.S. had been alternating in its leadership position with Finland. When Finland slipped to the third position in 2006, Germany emerged as the most important challenge to U.S. microeconomic competitiveness. Overall, following the leadership of the U.S. and Finland, countries like Germany, the Netherlands, Sweden, Denmark, Switzerland and the United Kingdom appeared among the six most competitive nations in the MCI rankings. It is also remarkable that Japan appears in Table 1 only once as the ninth most competitive economy in 2006.

Whereas in the MCI rankings the U.S. appeared as a strong leader on par with Finland and never slipped below the second position, the situation is somewhat different as far as the GCI rankings are concerned. Here, as Table 3 below demonstrates, the U.S. appeared on the third position in 1997 and 1998, being challenged by the Singapore and Hong Kong. In 1999 the U.S. managed to rise to the second position, while the Singapore retained its competitive leadership. In 2000 and 2002, the global competitive lead was finally taken by the U.S., only to be challenged by Finland in 2001 and 2003. The U.S. came first again in 2005, while Finland dropped to the second position. However, from its global competitive leadership in 2005, already in 2006 the U.S. slipped to the sixth place, while Switzerland became the global competitiveness leader, and Finland appeared second. Hence, while in 2006 the World Economic Forum still assessed the U.S. economy as the most competitive in the micro-competitiveness category, its global (growth) competitiveness has plummeted.

**Table 3: World Economic Forum's Global (Growth) Competitiveness Index Rankings (Ten Leading Countries)**

Rank \ Year	1	2	3	4	5	6	7	8	9	10
1997	Singapore	Hong Kong	United States	Canada	New Zealand	Switzerland	United Kingdom	Taiwan	Malaysia	Norway
1998	Singapore	Hong Kong	United States	United Kingdom	Canada	Taiwan	Netherlands	Switzerland	Norway	Luxembourg
1999	Singapore	United States	Hong Kong	Taiwan	Canada	Switzerland	Luxembourg	United Kingdom	Netherlands	Ireland
2000	United States	Singapore	Luxembourg	Netherlands	Ireland	Finland	Canada	Hong Kong	United Kingdom	Switzerland
2001	Finland	United States	Canada	Singapore	Australia	Norway	Taiwan	Netherlands	Sweden	New Zealand
2002	United States	Finland	Taiwan	Singapore	Sweden	Switzerland	Australia	Canada	Norway	Denmark
2003	Finland	United States	Sweden	Denmark	Taiwan	Singapore	Switzerland	Iceland	Norway	Australia
2004	...	...	...	...	...	...	...	...	...	...
2005	United States	Finland	Denmark	Switzerland	Singapore	Germany	Sweden	Taiwan, China	United Kingdom	Japan
2006	Switzerland	Finland	Sweden	Denmark	Singapore	United States	Japan	Germany	Netherlands	United Kingdom

Source: World Economic Forum, 1998, 2000, 2002, 2003, 2004, 2006

The factors behind this abrupt decline in U.S. Global Competitiveness are mostly related to the country's macroeconomic environment, its public institutions,<sup>14</sup> as well as health and primary education sectors. For example, the overall macroeconomic performance of the U.S. ranked 69<sup>th</sup>, its institutions were placed on the 27<sup>th</sup> position, its infrastructure ranked 12<sup>th</sup>, while the nation's health and primary education sectors were assessed on the 40<sup>th</sup> position (WEF, 2006, pp. XIX, XXI, 30). The Forum characterized the U.S. macroeconomic environment as "by far the greatest weakness" resulting from fiscal and current account deficits, gross public debt and low savings rates, etc. (ibid., pp. 30-1).

Another important weakness was attributed to the U.S. health care sector. Here, the U.S. competitiveness is undermined by an unbalanced relationship between health care spending and health care indicators. Whereas U.S. health care spending has been on a continuous rise reaching 15% of GDP

<sup>14</sup> The following institutional weaknesses were cited: "inefficiencies in the use of public resources" (ranked 27<sup>th</sup>), "insufficient even-handedness on the part of government officials in their dealings with private sector interests" (ranked 39<sup>th</sup>), "inadequate levels of trust on the part of the business community in the financial integrity of the public officials (ranked 24<sup>th</sup>)," etc. (WEF, 2006, p.30).

in 2006, health indicators here have been eroding. This is in sharp contrast to the OECD countries' average rate of 8% and better health indicators there. The combination of higher health care spending and lower health indicators in the U.S. has contributed to the country's rapid decline in global competitiveness (ibid., p. 30). Note that the Forum's link between health care spending and U.S. global competitiveness is different from the relationship formulated by the U.S. manufacturing community. While they trace the effect on competitiveness through relative cost structures, the Forum's approach is concerned with per-dollar efficiency:

...at almost 15 percent of GDP, the United States spends more on health care than any other nation in the world, including France and Germany (10 and 11 percent of GDP, respectively), [...]. [...] indicators suggest that Americans receive worse health care than do the citizens of many countries that spend less, eroding the country's overall competitiveness (ibid., p. 30).

### ***Part VIII: The Difficulties with the Forum's Approach***

While few would disagree with the World Economic Forum (WEF) that the relationship between U.S. health care spending and its health indicators is a matter of great concern, should the Forum's rankings of global and microeconomic competitiveness be taken for granted? Do the rankings warrant the wide attention they receive from politicians, media experts and academics? Those, whose appetite for competitiveness benchmarks is satisfied with the Forum's rankings, often fail to consider that a number of issues are involved in the Forum's methodological and theoretical framework.

Firstly, as was noted above, the Forum's approach to global competition is *not* related to inter-country conflicts in gaining market shares. A country's relative success in gaining global market share is *not* among the criteria on the basis of which the *Global Competitiveness Index* (GCI) is calculated. Rather, competitiveness is defined as a nation's productivity and growth potential, turning the whole competitiveness analysis into a study of incomes and growth as a whole (Lall, 2001, p. 11). Likewise, the GCI measures a country's potential to attain and sustain macroeconomic growth over time.

Secondly, rather than utilizing quantitative data while computing the competitiveness rankings, the Forum's economists predominantly rely on business surveys' information even when quantitative statistics are readily available (ibid., p. 28):

There are many questions on which quantitative data are available but not used; instead, the WEF chooses to rely on qualitative responses (ibid., p. 28).

Those business surveys represent qualitative responses based on a seven-point scale, such as whether the respondent "strongly agrees" or "strongly disagrees" with a statement provided by the Forum (ibid., pp. 15, 27). For example, physical infrastructure - an important competitiveness factor, "is not measured by stocks of roads, railroads, air transport etc. in each country but by qualitative ratings of how 'extensive and efficient' infrastructure services are perceived by business" (ibid., p. 15). Similarly, human capital "is captured by qualitative answers to two questions: if local 'public schools are of high quality' and if 'first-class business schools' are available" (ibid., p. 15). With this type of qualitative responses from local businesses forming the main foundation of the Forum's competitiveness indices, "no stock measures of any kind, physical, human, technological or strategic" are used in the construction of the *Global Competitiveness Index* (GCI) (ibid., pp. 14, 28). Likewise, when computing the *Microeconomic Competitiveness Index* (MCI), the Forum relies upon businesses' perceptions on such matters as physical and technological infrastructure, judicial and legal framework, human resources, quality of schools and educational system, regulatory standards, national capacity for innovation, etc. (See Appendix for a more detailed description of these factors). Moreover, as Lall (2001) argues, the questions posed to businesses "often appear unclear and confusing," leading to a discrepancy when businesses' responses are juxtaposed against actual quantitative indicators (ibid., p. 28).

Thirdly, the Forum's theoretical framework explicitly bears an anti-government-intervention bias, endorsing an underlying assumption of 'free market' efficiency. This means that government spending and deficits, taxes, subsidies, regulation, oversight, union power, government-sponsored

retirement programs, etc. are all regarded injurious to a country's competitiveness. At the same time, the ability of firms to hire and fire workers freely is deemed uniformly positive for competitiveness (ibid., p. 24, 33). The higher is the 'ease of hiring and firing' practices in a country, i.e. the less is the degree to which such practices are "impeded by regulations," the more competitive will a nation be assessed. This makes countries like Germany, France, Norway, Sweden, and the Netherlands, where labor market practices are strongly protected by legislation, very uncompetitive (WEF, 2004, p. 547), while countries like Russia attain one of the highest competitiveness scores. Similarly, the higher is the flexibility of wage determination, i.e. the more it is "up to each individual company" to determine workers' remuneration, the more competitive will a nation be estimated. Again, this places countries like Germany, Finland, Norway, Sweden and the Netherlands among the least competitive nations, while Hong Kong, Estonia, U.S., Chad, Peru and Uganda rank on top (ibid., p. 548).

It is remarkable that the U.S. labor markets particularly match the Forum's ideal of "flexibility and efficiency" with "considerable ease of hiring and firing at the firm level" and a strong relationship between worker productivity and wage (WEF, 2006, p. 30). For example, *The Global Competitiveness Report 2001 – 2002* showed that the ease of hiring and firing practices in the U.S. was only challenged by Romania, Hong Kong SAR, Peru, Singapore, and Nigeria, thus placing the U.S. on the 6<sup>th</sup> position, while Sweden, Norway, Germany and France ranked in the 60s and 70s (WEF, 2002, p. 431). The flexibility of wage determination is notably high on the U.S. labor markets as well. On par with Chad and Peru, the only challenges to it come from Hong Kong SAR and Estonia (WEF, 2004, p. 548).

However, setting aside these theoretical framework considerations, the Forum's competitiveness indices suffer from severe quantitative, analytical and methodological weaknesses. Flaws with model specification, implementation, variable measurement, data, data aggregation, econometric analysis, weights assignment, etc. permeate the Forum's approach reducing its analytical reliability and making

the indices unworthy of the attention they receive (Lall, 2001, pp. 14-15, 20, 23-33). As Lall (2001) concluded:

Our examination of the WEF index shows that several analytical, methodological and quantitative weaknesses reduce its reliability as a tool of analysis. Moreover, the way it is presented does not make the audience aware of its assumptions and limitations; on the contrary, it gives an impression of precision and robustness that is quite unjustified. The WEF report does contain some useful material .... However, on the whole its shaky base of theory and data means that the indices do not merit the attention and concern with which they are greeted (ibid., p. 33).

Skillfully concealed behind the pompous presentational façade, the weaknesses and limitations of the Forum’s framework remain unknown to the majority of readers, and the publicity surrounding the indices persists. Perhaps one of the reasons why the Forum’s indices receive so much attention is the lack of alternative composite indicators that would rank nations against each other, thus satisfying the obsession for competitiveness benchmarks. So problematic and inherently flawed is the effort to construct composite competitiveness indices that very few research institutions have attempted the task.

***Part IX: Alternative Explanations for the Declining Competitiveness of the U.S. Economy***

Having shown that the Forum’s approach to competitiveness is not without analytical weaknesses and should be taken with caution, we now seek alternative explanations for the (potentially) declining competitiveness of the U.S. economy.

To begin with, a number of recent competitiveness studies have voiced a uniform concern about a decline in U.S. scientific and technological potential, particularly in comparison to other nations’ experiences. Whereas scientific and engineering discoveries have been gaining strength worldwide, the scientific and technological base of the U.S. has been “eroding” (The National Academy of Sciences, 2007, p. 3). While the U.S. continues to neglect its technology infrastructure, “many countries are adopting economic reforms and are directly competing with the United States for foreign talent,



innovation, and technology products and services” (American Electronics Association, 2005, p. 23). At the time when “foreign governments are creating public-private partnerships to invest in R&D projects and persuade their brightest youth to pursue high-tech careers,” the U.S. has been cutting its federal R&D funding (ibid., p. 7). From 1.25% of GDP in 1985, federal R&D spending dropped to 0.75% of GDP in 2002. Its absolute levels peaked at \$75 billion in 1987, dropping to \$71 billion by 2002 (adjusted for inflation to 1996 dollars). Unfortunately, these negative trends have not been offset by private efforts in R&D funding, as they have been on a decline as well (ibid., p. 15). As a result, some worrisome trends are revealed in patent statistics. For example, from 1988 to 2001, “the percent of patents awarded to U.S. corporations dropped to slightly more than half,” while patents granted by the U.S. to foreign corporations increased (ibid., p. 11).

Many have argued that the quality of the K-12 and university education in the U.S. make the U.S. workforce “increasingly unprepared for the 21<sup>st</sup> century economy” that is knowledge-based and driven by technology (ibid., pp. 4, 17). To give some examples from the sphere of university education, the U.S. has been overtaken by China, Japan and the European Union by the number of bachelor’s degrees awarded in engineering. At the same time, the EU-15 countries have bested the U.S. in the number of doctoral degrees they grant in science and engineering (ibid., p. 7). The skills competition from emerging market economies such as China and India has been increasing at an alarming rate. With wage differentials between Indian and American engineers narrowing, it is the skills sets rather than cost (wage) differentials that will determine the patterns of global competitiveness (ibid., pp. 6-7).

The cumulative effect of these and other trends indicates that the U.S. leadership in science, technology, engineering and R&D is eroding with the risk of never being recovered again (ibid., p. 4; The National Academy of Sciences, 2007, p. 3). In order to remain competitive and renew and sustain its manufacturing base, the U.S. must maintain strong commitments to R&D, innovation, science,

technology, engineering, high-tech manufacturing, skills-based jobs, high quality education, advancement of knowledge, human capital, recruiting and retaining top engineers and scientists, as well as attracting the brightest of students from around the world (The Manufacturing Council, 2005, pp. 2, 8; The National Academy of Sciences, 2007). These steps, in which federal support, incentives and initiatives are crucial, define the path to competitiveness, rather than production of cheaper commodities through direct cost cutting.

### ***Conclusions***

The goal of this paper was to examine the claim that rising health care costs are reducing U.S. global competitiveness. This claim has been promulgated by the U.S. business and manufacturing community who operate under the system of employer-provided health insurance. To address this claim, we examined the specific ways in which social health insurance is financed in a sample of competitor nations. This analysis showed that employers in countries with universal or nearly universal health care coverage bear substantial contributions towards social health insurance schemes. Where contributions to such schemes are absent or play a less prominent role in health care financing, taxation is relied upon as an alternative source of funding. This analysis did not provide sufficient evidence in support of the claim that the U.S. manufacturers are disadvantaged by universal or nearly universal health care systems under which their competitors operate.

Secondly, we pointed out at the fallacy of singling out *one* component of labor-related expenses, such as health care, and claiming that this *one* component per unit of output makes a nation less competitive. Rather, we offered an analysis of *total* labor cost structures adjusted for labor productivity, or unit labor costs (ULCs). The cross-country analysis of manufacturing ULCs failed to provide conclusive evidence in favor of the claim examined. On the contrary, the U.S. manufacturing sector

demonstrated strong ULC advantages over its EU-15 competitors during most of the period from 1987 to 2003, benefiting largely from higher levels of labor productivity and favorable fluctuations in nominal exchange rates. The evidence regarding the U.S - Japan ULC differentials is ambiguous. Whereas exchange-rate-adjusted ULC measures provided by OECD revealed a comparative ULC *disadvantage* for the U.S. manufacturing sector relative to that of Japan from 1990 to 2005, the Purchasing Power Parity (PPP)-based studies revealed the opposite results, showing a strong ULC advantage in the U.S. manufacturing sector from 1987 to 2003.

Thirdly, the claim was addressed from the perspective of flexible labor market practices. It was argued that in response to rising costs of health care benefits, employers can implement various cost-offsetting strategies such as wage-benefit trade-off, cost-shifting, benefits eligibility management, employment of part-time workers, etc. As a result of these and other cost-offsetting strategies, the burden of health care inflation falls upon American workers who see their real wages stagnant or falling, health care coverage reduced, and premium contributions increased.

Fourthly, it was argued that competitiveness is not determined solely by cost (price) factors, even more so in the case of advanced capitalist economies. Here, technological advances translate into competitive advantages as manufacturers compete on the basis of engineering, R&D, innovation, and technological capabilities. As consumer preferences shift towards higher-end and more expensive products with superior quality and unique features, the price (cost)-based argument has been waning in its importance. The labor cost argument has been declining in its significance as well since direct labor input has been falling as a percentage of total manufacturing costs. As production processes become ever more high-tech and knowledge-based the critical labor issue shifts away from costs to quality, and employment of skilled labor force offsets direct labor costs disadvantages.

Lastly, it was shown that consumer preferences and behavior vary across markets, so that not every product or brand can be transplanted successfully from one market place to the next. For example, the model mix of the U.S. auto-makers does not adequately address the environmental concerns of the European citizens. Moreover, it is not uncommon that consumers exhibit strong affinities to their national products as the automobile markets in Europe and Asia demonstrate.

Overall, global competition is an extremely complex phenomenon, as the study of the automobile industry's competitiveness has demonstrated. To claim that disproportionate per-vehicle health care costs make U.S. automobiles less competitive is to ignore the impact of the complex web of factors that matter for the competitiveness of the automobile industry. Having offered a different set of explanations for the problems faced by the Big Three, we provided some alternative explanations for the declining competitiveness of the U.S. economy. In particular, it was argued that the U.S. has been losing ground in R&D, innovation, science, technology, engineering, high-tech manufacturing, skills-based jobs, human capital and education.

And finally, we examined the World Economic Forum's competitiveness rankings, and provided a critical overview of the Forum's methodological and theoretical frameworks. We concluded that the Forum's rankings suffer from a number of weaknesses, and should be taken with caution.

Overall, we cannot validate the claim that "disproportionate" health care costs incurred by the U.S. producers are reducing the country's global competitiveness. Rather, we agree with Fagerberg (1996) that in the competitiveness debate, the almost universal "tendency to blame others for one's own failures" unfolds into a strategy of blaming foreign competition for short-comings in our own performance (Fagerberg, 1996, p. 40). While 'international competitiveness' has become a catch-word for propagating the alleged negative effect of the employer-provided health insurance system, if there is an issue here, it is not with a nation's competitiveness as such, but with corporate profits maximization.

**Appendix:****Table 1A: Exchange Rate Adjusted Unit Labor Costs (Industry), Selected Countries, 1990 – 2006**

<b>Country Year</b>	<b>U.S.</b>	<b>Finland</b>	<b>France</b>	<b>Germany</b>	<b>Japan</b>	<b>Spain</b>	<b>U.K.</b>	<b>Nether- lands</b>	<b>Sweden</b>	<b>Euro Area</b>
<b>1990</b>	0.62	1.07	0.90	0.89	0.45	0.83	0.77	0.66	1.06	0.85
<b>1991</b>	0.64	1.07	0.89	0.90	0.49	0.87	0.72	0.66	1.11	0.87
<b>1992</b>	0.67	0.90	0.97	1.02	0.53	0.96	0.68	0.73	1.14	0.96
<b>1993</b>	0.67	0.66	0.93	1.01	0.61	0.83	0.58	0.70	0.79	0.90
<b>1994</b>	0.66	0.69	0.92	1.00	0.67	0.79	0.58	0.68	0.76	0.89
<b>1995</b>	0.63	0.88	1.00	1.17	0.70	0.86	0.61	0.77	0.82	0.98
<b>1996</b>	0.63	0.84	0.98	1.12	0.58	0.87	0.60	0.72	0.91	0.97
<b>1997</b>	0.62	0.72	0.85	0.94	0.52	0.77	0.64	0.65	0.77	0.84
<b>1998</b>	0.61	0.70	0.80	0.94	0.49	0.75	0.69	0.65	0.78	0.82
<b>1999</b>	0.60	0.64	0.76	0.89	0.55	0.71	0.67	0.62	0.65	0.77
<b>2000</b>	0.62	0.53	0.65	0.76	0.55	0.62	0.63	0.53	0.59	0.66
<b>2001</b>	0.63	0.52	0.63	0.74	0.50	0.61	0.60	0.53	0.56	0.65
<b>2002</b>	0.62	0.53	0.67	0.79	0.47	0.66	0.64	0.57	0.58	0.69
<b>2003</b>	0.62	0.62	0.79	0.94	0.47	0.81	0.70	0.70	0.688	0.82
<b>2004</b>	0.60	0.66	0.87	1.00	0.48	0.91	0.79	0.75	0.70	0.90
<b>2005</b>	0.60	0.66	0.85	0.96	0.45	0.93	0.80	0.76	0.67	0.89
<b>2006</b>	..	0.63	..	0.94		0.94	0.85	0.75	0.66	0.89

Source: OECD online statistical database, July 2007.

**Table 2A: Exchange Rate Adjusted Unit Labor Costs (Business Sector), Selected Countries, 1990 - 2005**

<b>Country Year</b>	<b>U.S.</b>	<b>Germany</b>	<b>Japan</b>	<b>Euro Area</b>
<b>1990</b>	0.6	0.8	0.4	0.8
<b>1991</b>	0.6	0.8	0.5	0.8
<b>1992</b>	0.6	0.9	0.5	0.9
<b>1993</b>	0.6	0.9	0.6	0.8
<b>1994</b>	0.6	1.0	0.6	0.8
<b>1995</b>	0.6	1.1	0.7	0.9
<b>1996</b>	0.6	1.1	0.6	0.9
<b>1997</b>	0.7	0.9	0.5	0.8
<b>1998</b>	0.7	0.9	0.5	0.8
<b>1999</b>	0.7	0.9	0.5	0.8
<b>2000</b>	0.7	0.7	0.6	0.7
<b>2001</b>	0.7	0.7	0.5	0.7
<b>2002</b>	0.7	0.8	0.4	0.7
<b>2003</b>	0.7	0.9	0.5	0.9
<b>2004</b>	0.7	1.0	0.5	1.0
<b>2005</b>	0.7	1.0	0.5	1.0

Source: OECD online statistical database, September 2007

**Composition of the World Economic Forum's *Business (Microeconomic) Competitiveness Index*<sup>15</sup>**  
(Selected Pillars)

**I. COMPANY OPERATIONS AND STRATEGY**

- a) Production process sophistication
- b) Nature of competitive advantage
- c) Extent of staff training
- d) Extent of marketing
- e) Willingness to delegate authority
- f) Capacity for innovation
- g) Company spending on R&D
- h) Value chain presence
- i) Breadth of international markets
- j) Degree of customer orientation
- k) Control of international distribution
- l) Extent of branding
- m) Reliance on professional management
- n) Extent of inventive compensation
- o) Extent of regional sales
- p) Prevalence of foreign technology licensing
- q) Hiring and firing practices<sup>16</sup>
- r) Flexibility of wage determination<sup>17</sup>
- s) Pay and productivity<sup>18</sup>

**II. NATIONAL BUSINESS ENVIRONMENT**

**A. FACTOR (INPUT) CONDITIONS**

**1. Physical Infrastructure**

- a) Overall infrastructure quality
- b) Railroad infrastructure development
- c) Port infrastructure quality
- d) Air transport infrastructure quality
- e) Quality of electricity supply
- f) Telephone/fax infrastructure quality
- g) Cellular telephones
- h) Internet users

**2. Administrative Infrastructure**

- a) Reliability of police services
- b) Judicial independence
- c) Efficiency of legal framework
- d) Administrative burden for startups
- e) Extent of bureaucratic red tape

**3. Human Resources**

- a) Quality of management schools
- b) Quality of public schools
- c) Quality of the educational system

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<sup>15</sup> Source: World Economic Forum, 2004, pp. 42-3, unless specified otherwise.

<sup>16</sup> Source: *ibid.*, p. 557.

<sup>17</sup> Source: *ibid.*, p. 548.

<sup>18</sup> Source: *ibid.*, p. 550.

- d) Quality of math and science education

#### **4. Technology Infrastructure**

- a) Utility patents
- b) Availability of scientists and engineers
- c) Quality of scientific research institutions
- d) University/industry research collaboration

#### **5. Capital Markets**

- a) Financial market sophistication
- b) Venture capital availability
- c) Ease of access to loans
- d) Local equity market access

### **B. DEMAND CONDITIONS**

- a) Buyer sophistication
- b) Sophistication of local buyers' products and processes
- c) Government procurement of advanced technology products
- d) Presence of demanding regulatory standards
- e) Laws relating to ICT
- f) Stringency of environmental regulations

### **C. RELATED AND SUPPORTING INDUSTRIES**

- a) Local supplier quality
- b) State of cluster development
- c) Local availability of process machinery
- d) Local availability of specialized research and training services
- e) Extent of collaboration among clusters
- f) Local supplier quantity
- g) Local availability of components and parts

### **D. CONTEXT FOR FORM STRATEGY AND RIVALRY**

#### **1. Incentives**

- a) Extent of distortive government subsidies
- b) Favoritism in decisions of government officials
- c) Cooperation in labor-employer relations
- d) Efficacy of corporate boards
- e) Intellectual property protection
- f) Protection of minority shareholders' interests
- g) Regulation of securities exchanges
- h) Effectiveness of bankruptcy law

#### **2. Competition**

- a) Hidden trade barriers
- b) Intensity of local competition
- c) Extent of locally based competitors
- d) Effectiveness of antitrust policy
- e) Decentralization of corporate activity
- f) Business costs of corruption
- g) Cost of importing foreign equipment
- h) Centralization of economic policymaking
- i) Prevalence of mergers and acquisitions
- j) Foreign ownership restrictions

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