

# WHAT IS THE "WEALTH" OF A NATION?

## Some parting thoughts.

### ABSTRACT

*I write this commentary as a good-bye lecture in this course, in the hope that you may reflect upon the issues raised here, as you prepare yourself for life in the cliché-ridden world of seasoned adults.*

*The central theme running through my remarks is that the wealth of a nation goes far beyond the narrow and brittle measures of financial wealth that issue forth on a daily basis from the financial markets and so are gushed about in the adulating financial press -- a bit like the adulation of celebrities one finds in teenage magazines.*

*Nor is it clear that the chief executive officers (CEOs) of the nation's business firms are the most important creators of national wealth, as is so often suggested in the business press.*

*To be sure, as they organize into productive enterprises many of the nation's real resources (human labor, accumulated knowledge, land, structures, and so on), these CEOs do play a significant part in the creating of a nation's creation. This is especially true of the nation's truly entrepreneurial CEOs (and the venture capitalists who gamble their own wealth to finance them). They found new companies to bring to market novel products that please others in society.*

*But, as I shall argue in this lecture, all of these venture capitalists CEOs can build upon platforms of wealth constructed by others—the human capital that has been created by others and the legal, administrative and physical infrastructure platform a nation builds for itself through its government. Here I think of “government” not as an invading force – like Gengis Khan's hordes – but as a human institution consciously chosen by a people for its governance.*

*Heretical as the thought may be to so many red-blooded Americans -- who seem born to loathe their government when they are not running to it for bailouts or other succor – executives and other employees in government can and, in our nation, do play an important role in the process of wealth formation as well.*

*Government creates and maintains much of the physical and all of the legal infrastructure within which manufacture and commerce can thrive. Did you know, for example, that the Internet was initially developed by the U.S. Defense Department, whence it came to academia and only much later to the private, commercial sector? Surely you know that many of our medicines, even those ultimately marketed by drug companies, trace their origin to the research laboratories of the federal government's National Institutes of Health.*

*Finally, one must wonder whether any of these agents of wealth creation in business and in government can match the collective contribution to a nation's wealth that is made by conscientious parents—notably, though not exclusively, by the nation's mothers—as well as by legions of imaginative and dedicated teachers in the nation's elementary and high schools, all of whom play such an important (but uncelebrated) role in the formation of the nation's human capital—the ultimate source of any modern nation's wealth. Your Princeton professors, for example, merely help you build some more on this human capital. We are not its chief creators.*

*Too many commentators on “wealth creation” are woefully ignorant of the true nature of national wealth and of its chief creators. You should not be among these ignoramuses.*

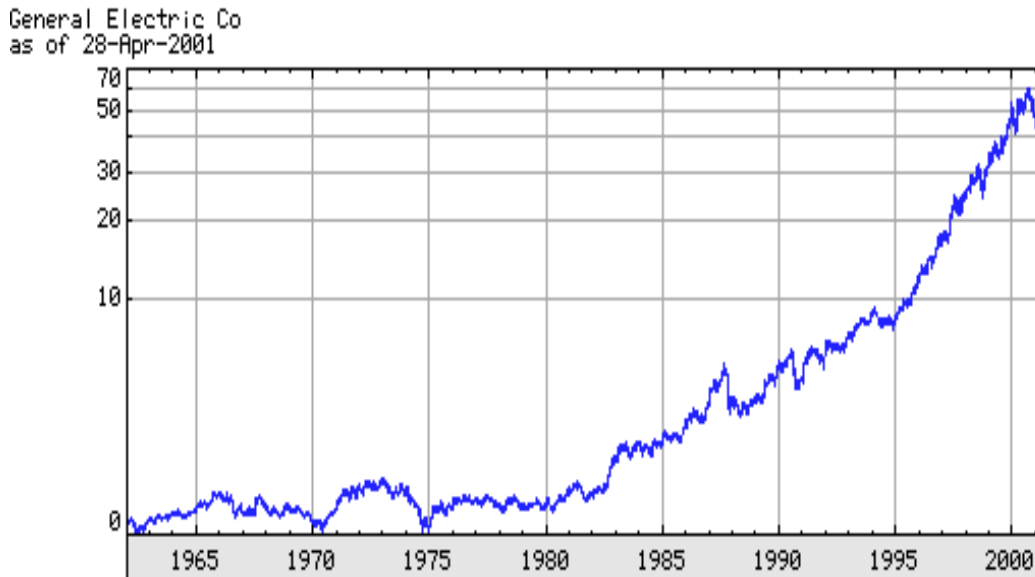
## A. Random Remarks on “Wealth”

Speaking to a reporter of the *Los Angeles Times* (April 24, 1999), Malaysian Prime Minister Mahathir Mohamad deplored the stunning reduction in his country's financial wealth during the collapse of his nation's economy in 1997 thus:

*I'm angry that 40 long years of toil and sweat have been destroyed in a very short period of time. On top of that we're being blamed for destroying our economy when we know we weren't the cause. To re-create this wealth will take a long time, a decade or more. It's the waste that angers me. So much wasted effort, so many lost dreams.*

“Like, wow!” was my first thought after reading the passage. “Someone must have bombed Malaysia while I was on spring break!” Certainly this passage makes it *sound* as if Malaysia had been bombed by a foreign power. Were any of Malaysia's *real* assets--buildings, roads, blue prints, people--destroyed through bombing? If not, what was the Prime Minister talking about?

Later that year, *Fortune* magazine featured on its cover what it called America's “great wealth creators.” Alongside some dot.com heroes of the day was Jack Welch, CEO of General Electric (GE). Under his stewardship the value of GE common stock had increased almost tenfold (see the chart below). It is awesome to think that one man can create so many billions in wealth, *if that is, indeed, what this one Lone Ranger of the business world did*. I must confess, however, that, aside from that alleged *Lone Ranger*, I also thought of all of GE's other employees who had put their shoulders to the wheel for that company.



**SOURCE:** Yahoo.com

Of course, a second chart, shown below, raises the question what one is to say about the role of GE's CEO since September 2000.

General Electric Co  
as of 28-Apr-2001



Between September 2000 and March 2001, the market price of GE stock fell by about \$20 per share (from about \$60 per share to about \$40 a share). With close to 10 billion shares of GE stock outstanding, that comes to a loss of **\$200 billion** in the total market value of GE common stock.

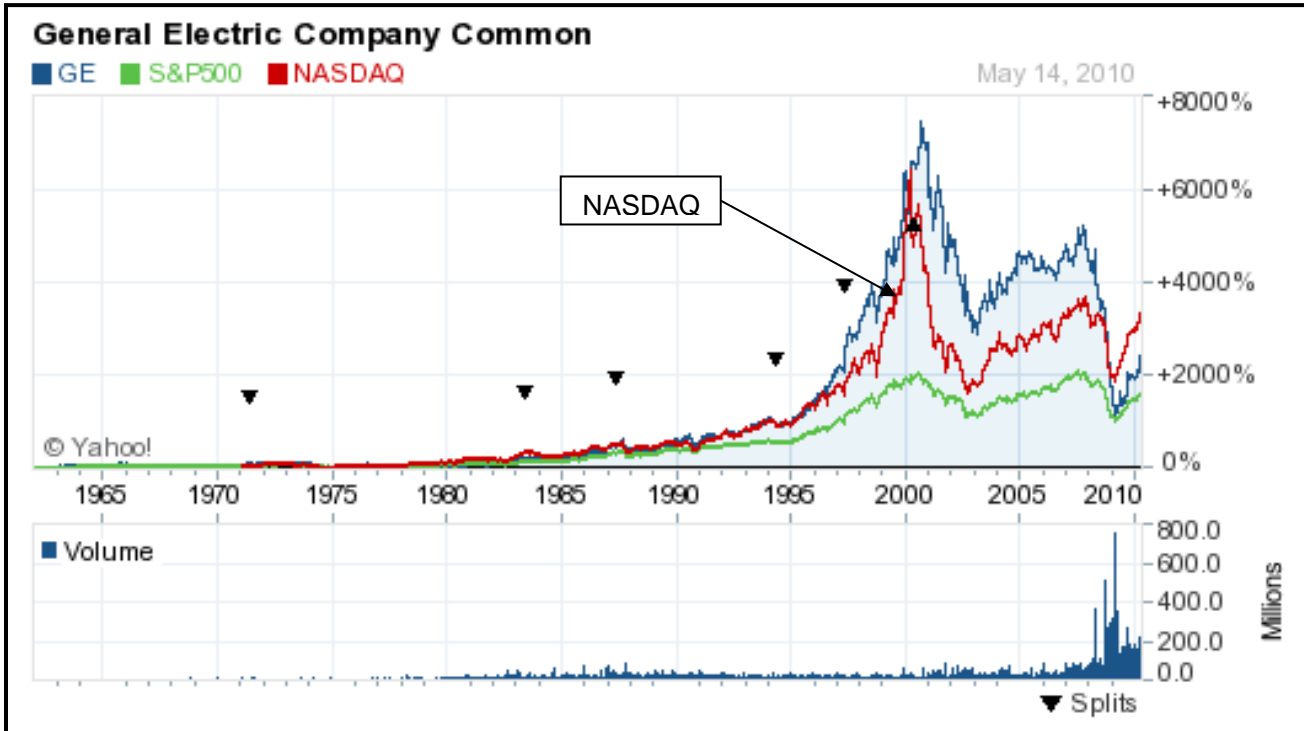
Now, if we attribute the growth of GE's market value to Jack Welch, who should be blamed for its subsequent wholesale destruction? Jack Welch's successor, Jeff Immelt, who had been carefully picked by Jack Welch from the company's aspiring executive vice presidents to succeed him? If so, why does GE's board of directors still so handsomely compensate Mr. Immelt?

Furthermore, were the decline of about **\$200 billion** in the value of GE stock and the subsequent recovery of about **\$100 billion** in total market value really changes in the *nation's wealth*? How are we to think about these questions? Is it the case that every time a company's market-capitalization (the market price per share times the number of shares outstanding) rises, U.S. national wealth goes up and when it falls, national wealth goes down by a like amount?

#### **SECTION ADDED EX POST, IN MAY 2010:**

*For reasons not immediately clear to me, the movements in the stock price of GE appear to be more strongly correlated with the NASDAQ stock index (which tends to represent younger, high-tech growth-oriented companies) rather than the S&P 500 stock index, which represents a broad group of US companies, with a relatively heavy weighting of finance.*

*In any event, as the stock chart dated May 15, 2010 below shows, it is certainly fair to ask to what extent the rapid rise in GE's stock price reflects the managerial acumen of CEO Jack Welch and to what extent it was driven merely by the imagination of the market as a whole. (In this connection, see also <http://economix.blogs.nytimes.com/2009/02/13/jack-welch-and-the-lone-ranger-theory/> ).*



Source: <http://finance.yahoo.com/q/bc?t=my&s=GE&l=off&z=m&q=l&c=&c=%5EIXIC>

**END OF SECTION ADDED EX POST, IN MAY 2010:**

Finally, early in 2000, at his annual *Milken Institute* conference, I heard Michael Milken, once the undisputed king of the financial markets, lament that corporate balance sheets do not feature the most important asset that distinguishes rich from poor corporations and (by implication) rich nations from poor nations: the *human capital* residing in their employees.

One thinks here of *Intel*, the *Microsoft Corporation*, *Amazon.com* and similar enterprises whose main product is the intellectual property produced by the highly skilled people these companies employ. If Milken is right on this point, we may ask who actually produces that most important part of a nation's wealth.

These diverse remarks on the value of a firm's or a nation's assets has led me to conclude that the concept of "wealth" is not well understood by non-economists, and certainly not by business journalists.

Therefore, in this concluding lecture, I would like help you think more deeply about this important concept, which drives so much of the public debate on domestic and international policy ever since Adam Smith, professor of moral philosophy and father of modern economics, bestowed on the world his magnificent classic *An Inquiry into the Nature and Causes of The Wealth of Nations* (1776). I urge you to add that book to your permanent library and browse in it from time to time.

## B. A NATION'S OR PERSON'S WEALTH IN ABSTRACT ECONOMIC THEORY

Although abstract economic theory sometimes employs variables that cannot be directly observed, that theory nevertheless can be a powerful guide to straight thinking. The consumer-choice theory we covered at the beginning of the course occasionally serves that purpose. There we styled human beings as managers of a perpetual "*happiness-production process*" whose output was measured in what economists call "*utils*"--units of happiness, if you wish. From that construct we derived demand curves for products, savings functions and labor supply functions.

From that construct also one can derive the following compact, totally geeky concept of "wealth":

**"Wealth" is the present value of the expected stream of future utility [human happiness] that an "infinitely lived individual or a dynasty" [or a nation] could hope to extract from the real resources available now and in the indefinite future, assuming these real resources are allocated and managed now, and over time, so as to maximize that present value of future utils (at the "proper" discount rate) <sup>1</sup>.**

This is quite a mouthful! But several useful ideas about "wealth" stand out from this highly abstract definition.

**First**, this definition sees "human happiness" or "well being" as the manifestation of "wealth." As the definition implies, our expectations today about the future, infinite stream of happiness may be anchored in tangible things like land and natural resources. But by themselves these things do not constitute wealth. If people sit on vast natural resources – e.g., oil, natural gas or potash -- but have no clue what to do with them those resources are not wealth to these people, but they might be to other people.

Nor does this definition refer to *financial wealth*, expressed in *monetary* units. Indeed, financial measures of wealth are always, at best, a very crude approximation of what we really try to measure, although for many legal contracts among human beings these crude approximations must make do. As properly bred economists we should be forever mindful of the limitations of financial measures of wealth, lest we celebrate, as do so many business journalists, achievements not necessarily worth celebrating, and lest we base our decisions as future policy makers upon distorted signals regarding wealth.

**Second**, the economist's definition of "wealth" is entirely **forward-looking**: the wealth we believe to possess today is a function strictly of expectations about *future* streams of utility (and nothing else).

It follows that even this abstract notion of wealth can rise and fall purely as a function of changes in **expectations** about the future. These expectations are the stuff of dreams and imagination, not something concrete. If those dreams change – e.g., become more pessimistic – financial measures of wealth can plummet. Asset bubbles are driven, first, by excessively optimistic dreams and, when the bubble bursts, by sometimes excessively pessimistic dreams. It is as simple and complicated as that.

To reduce the "wealth" that a nation (like Malaysia) believes to possess at a given moment in time, one does not have to bomb that nation. All it takes is a change in **expectations** about the future benefits likely to flow from Malaysia's real assets (buildings, machines, land, people). It is what happened to Malaysia and many other economies in Southeast Asia in 1997. No one bombed these countries. Its people (and the world) merely changed their expectations about their countries' future economic fortunes.

In the next section, I shall first of all highlight the limits of financial measures of wealth, to make sure that you will not prattle nonsense about wealth, as some folks do. Thereafter, I shall return to notions of "real

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<sup>1</sup> Michael Reiter, "Asset Prices and the Measurement of Wealth and Savings." (Mimeographed). September, 1999. Author's e-mail: reiter@upf.es.

wealth," as they have been expressed in our more abstract definition of "wealth" above. In the end, at the risk of inviting yet more hate mail from Princeton's ruggedly individualist alumnae and alumni who believe that I despoil this campus, I shall leave you with the *politically incorrect* but factually correct proposition that the foundation of our nation's wealth turns out to be--you might never have guessed it--our mothers, our teachers in elementary and high school, and our government! (Luckily, I have tenure.)

## B. HOW DOES WALL STREET MEASURE "WEALTH"?

Toward the end of the course, we learned what drives the market valuations of financial assets (bonds and stock certificates) and of real assets (e.g., office buildings) in theory -- and what drives it in the real world.

Playing with the theoretical stock-valuation models that I had written for you on Excel and posted for your own use on our course website, we had seen just how brittle are the prices that even perfectly rational, well-informed investors would pay for a company's basic ownership certificate—its common stock.

We saw that even small changes in expectations about the firm's future earnings or in investors' attitudes toward risk can make the value of a company's common stock tank.

We also used these models to explore the sensitivity of the entire stock market--e.g., the broad Standard and Poor's 500 index--to even small changes in the discount rate at which the market prices the expected future cash flow from a large portfolio of stock. By changing assumptions just a tad, you could "bomb" our economy, so to speak.

Finally, we saw how sensitive real-estate values are to assumptions about the future, and even the market prices of seemingly secure financial instruments, such as government and corporate bonds,

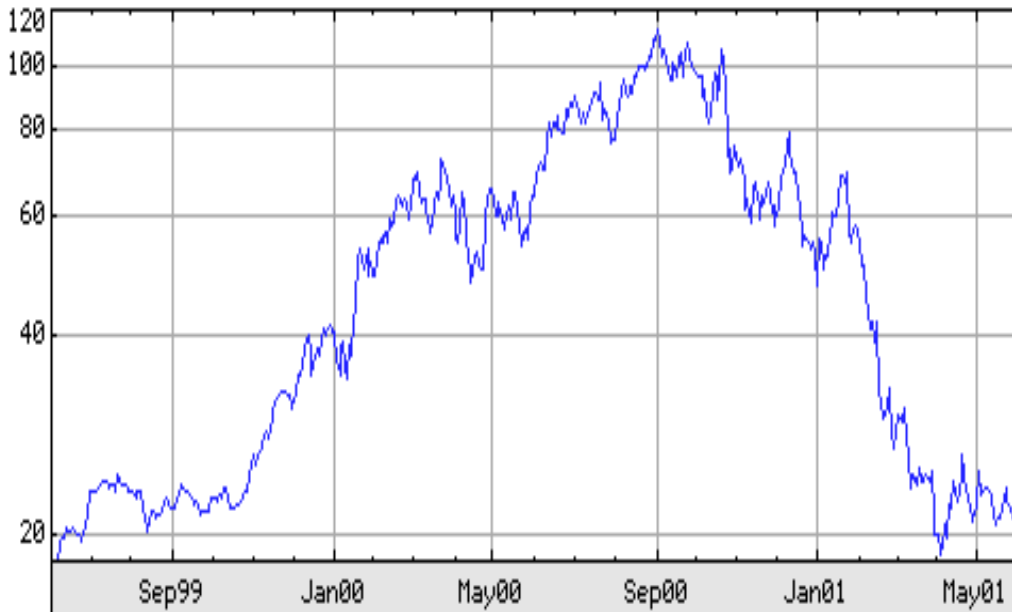
Translated into the high-pressure, real world of the financial markets, our theoretical studies suggest that, at any time, the prevailing market values that real and financial assets have in these markets must be a rather tenuous amalgam of sundry traders' hopes for the future and of the mood among the investors whose trades determine the market prices of financial securities at any particular moment, at the margin (that is, for the small batches of assets that actually are traded on any given day).

In technical jargon, and to be chic, you might say that the value of any real or financial assets at any moment is the discounted value of the hopes and prayers traders have for the future cash flows likely to be yielded by those assets, where the discount factor represents in large measure the nervousness of these traders about the future. The monetary measures of asset values are as tenuous as that.

Thus, we need not look to Malaysia or to Asia in general for illustrations of bubbles in the values that financial traders, in their moments of exuberance, assigned to particular assets--for example, the Internet start-ups--or the deep valleys into which such asset prices can plunge when these same traders become fearful and despondent about the future. Consider, for example, the following stock chart of Corning, Inc., once a blue-chip company that produced the boring household items (e.g., Corning glassware) that your parents loved, but metamorphosed during the 1990s into a producer of fiber-optic cable and high-tech equipment.

In mid 1999, the U.S. financial market judged Corning Inc. to be worth about \$16 billion or so to its owners (about \$17 per share times about 930 million shares outstanding). By September 2000, only about one year later, the same market judged that worth to be about \$105 billion, or almost 7 times as large. Alas, by the beginning of June 1, 2001, the same market judged the company to be worth only about \$18 billion or so to its owner. And so it goes in the financial markets. One would not regard these readings as stable measures of wealth, would one?

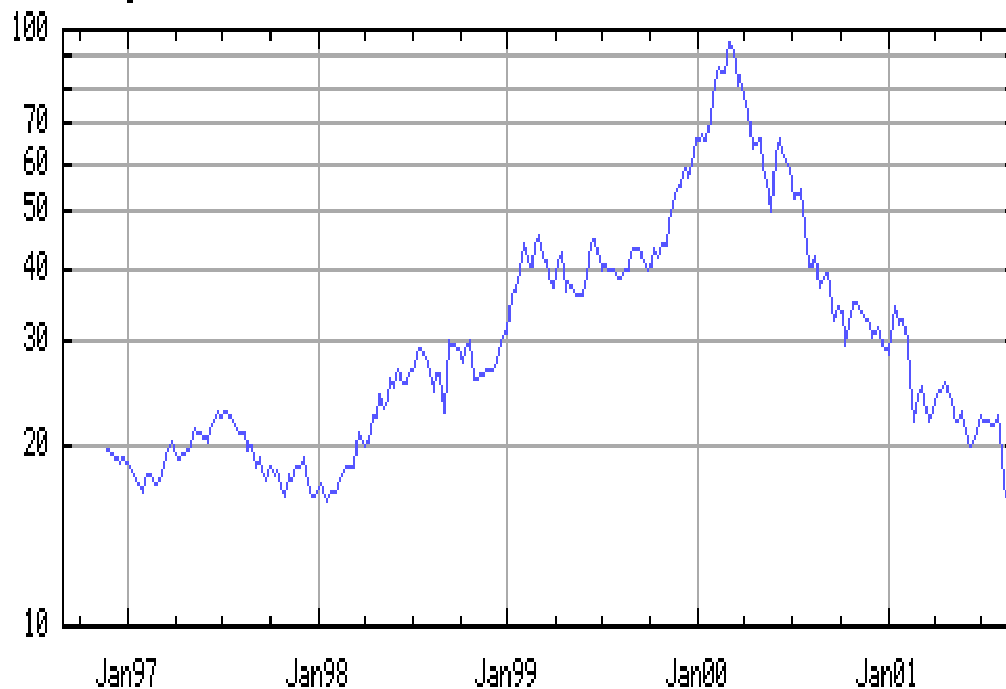
Corning Inc  
as of 1-Jun-2001



**SOURCE:** Yahoo.com

Not to pick only on American companies, however, behold the wondrous stock-market performance of *Deutsche Telekom, AG*, the privatized version of what was once the telephone arm of the government-owned *Deutsche Bundespost*, the German postal service. The Yahoo.com chart below shows the footprints of its stock price. (The vertical axis shows US \$ prices per share).

Deutsche Telekom AG  
as of 28-Aug-2001



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We can rest assured that, around January 2000, the executives of this firm toasted themselves on their awesome “wealth-creation” ability, and that their Board of Directors rewarded them richly for having made Germany so much richer.

In fact, so proud is that Board of its management that, in mid 2001, it showered truly stunning new stock options on Telekom’s management. According to the German *Handelsblatt* (July 6, 2001, p. 17), CEO Ron Sommer could earn on these new options Euro 340 million, if within the next 10 years the price of Telekom stock will rise to merely Euro 63 per share. (At this time, August 2001, 1 Euro is about US \$ 0.92). If within the next 10 years the stock price regains its historic high of Euro 105, the firm’s management team can expect to be rewarded with as much as Euro 1 billion in profits from the stock options.

In fact, the managers of Deutsche Telekom can expect to profit from their options even if the firm’s stock performs worse than the market overall. (Incidentally, this option scheme conveys at glimpse at the *performance—reward system* considered proper among corporate executives. One can imagine that investors who, in early 2000, bought *Deutsche Telekom* stock at Euro 105, will be absolutely thrilled by it.)

*Deutsche Telekom AG* was just one of many darlings of what Germans during the 1990s called “*Der Neue Markt*” (the “New Market”). It was a newly established niche of the German stock market, one in which German high-tech stocks such a telecommunications, internet stocks and bio-tech stocks were traded. (The closest American analogue is the NASDAQ, although it is much older and broader.) Shown below is the rise and fall of the index for Germany’s *Neue Markt*, the so-called *Nemax* index. The headline over the news clipping reads: “*Nemax ends below level at which it started.*” Remarkably, it happened within the short span of only three years!



**SOURCE:** *Financial Times Deutschland*, September 4, 2001; p.1

What are we to conclude from these remarkable data? Can we trust the financial markets at all to put realistic values on real and financial assets? The answer is an unambiguous “Yes” and “No.”

In *normal* times, the valuations estimated by detached financial analysts in the financial markets are about as solid as is humanly possible. Our theoretical models, however, should stand as a warning that,

even then, these valuations are brittle and can change drastically in response to new information about the underlying assets—whether it be mere rumors or hard data. In the end, the human beings who work in the financial markets are just like the rest of us: not unintelligent, but also not omniscient.

Unfortunately, however, every so often the human beings working in the financial markets seem to set aside their rational faculties in favor of “going with the flow,” a California term for “herd instinct.” The late 1990s appear to have been such a period of herd frenzy.

In those years, many of the financial “sell-side” analysts working for investment banks became part of the sales teams for the securities of the investment banks’ clients. Their analyses could no longer be trusted. Although the analysis on the “buy-side” of the market (the analysts of pension funds or mutual funds) were not ethically compromised in this way, they tended to trade more and more on the “*Greater Fools Theory*” of finance.

On that theory, even rational investors will buy securities that they estimate to be vastly *overvalued* in the market. The buyers hope that eventually they will be able to unload the overvalued securities on an even greater fool who will pay an even more inflated price for them. For a while this works and does earn investors money—until the bubble bursts, as it always does.

It is thus that, prior to March 2000, virtually any young college graduate claiming to have a “cool idea” could become an instant millionaire or billionaire, as mutual-fund and pension-fund managers frantically heaped their own clients’ hard earned savings upon these youngsters in the initial public offerings (IPOs) of these start-ups’ newly minted stock certificates. At the time, these youngsters were regularly celebrated in the business press as the nation’s new “wealth creators.”

The bulk of these so-called “*dot-com*” firms have gone bankrupt by now. The market value of the few survivors has shrunk by 90%. Overall, the stocks traded on the NASDAQ, the virtual, electronic stock market that specializes in high-tech stocks and start-ups in general, have lost some 60% of their market value. This means that Americans collectively lost close to \$5 trillion of the wealth that they *imagined* to possess in March 2000 but now no longer *imagine* to have (at least until the next asset bubble grows on the stock market.

We may note in passing that these financial bubbles are not a laughing matter. They have serious consequences for the allocation of resources in the economy.

When they burst, they usually cause recessions, with all of the human hardship that triggers. Usually it is the innocent bystanders—employed workers who are fired—who end up paying for the folly.

To my knowledge, only one major figure in finance, Rolf Breuer, CEO of *Deutsche Bank* has openly apologized for his industry’s failing in this regard (*Financial Times Deutschland*, September 4, 20p01; p. 19). Although, in fact, others may have done so, I am not aware that American executives of the industry have come forth in that way.

In any event, people in the financial markets are in no position to criticize the government sector for ineptitude in decision-making or in estimating economic magnitudes—such as GDP or budget surpluses and deficit or Medicare health spending decades ahead. Indeed, it is hard to think of measurement errors in the public sector that would rival those routinely made, in the 1990s, in the private sector, especially the private financial markets.

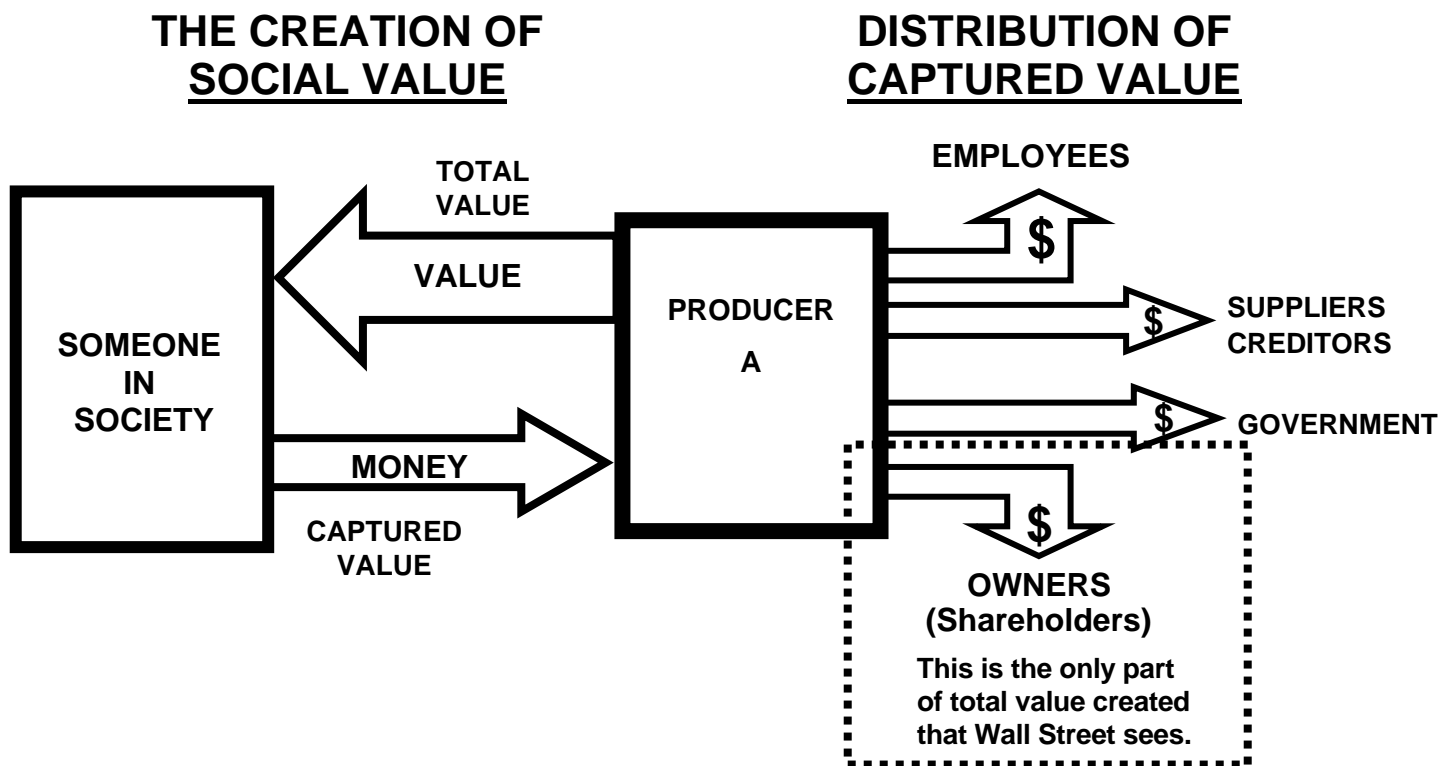
But the shortcomings of financial measures of a nation’s wealth go much deeper than the occasional bubbles the financial markets beget. From the perspective of the “welfare economics” we had studied in this course we can conclude that, even at their very best, the financial markets cannot distinguish between *genuine value creation* for society as a whole and the *mere shifting of existing* values among members of society—e.g., from the rest of society to the shareholders of particular companies. Figure 1 on the next page

illustrates this proposition.

**Wealth Creation vs. Wealth Shifting:** In Figure 1, we imagine Producer A produces something valued in the market place. Now assume that the batch of output delivered by producer A to society creates a social value measured by the arrow labeled "Value" in Figure 1. By the "social value" of the output we mean the maximum value that someone in this market would have been willing to bid for this output.

We know from our studies that, for all but the last, most reluctant buyer and seller in this market (the so-called marginal traders), the producer will not capture the total social value produced, because for buyers not at the margin (infra-marginal buyers) the price they need to pay for a thing typically is below the maximum bid price they would have been willing to pay, if push had come to shove (or, say, in an auction on

## FIGURE 1--CREATION AND DISTRIBUTION OF SOCIAL VALUE



e-Bay). We had called the difference between the maximum bid price a buyer would have been willing to pay, if push had come to shove, and the price she or he actually needed to pay the "consumer's surplus." In Figure 1, we show this by making the "total value" pipe larger than the "captured value" pipe. The point here is that part of the social value created by producers cannot ever be seen by the financial markets, because they can see only revenue (price times quantity). It is not, of course, the financial markets' fault. It follows from the way we keep books.

Now, the value actually captured by the producer from the buyers (the producer's "revenue," represented by the arrow called "Money") is distributed by the producers among the firm's several stakeholders. A sizeable chunk of that value is channeled to the firm's employees in the form of wages,

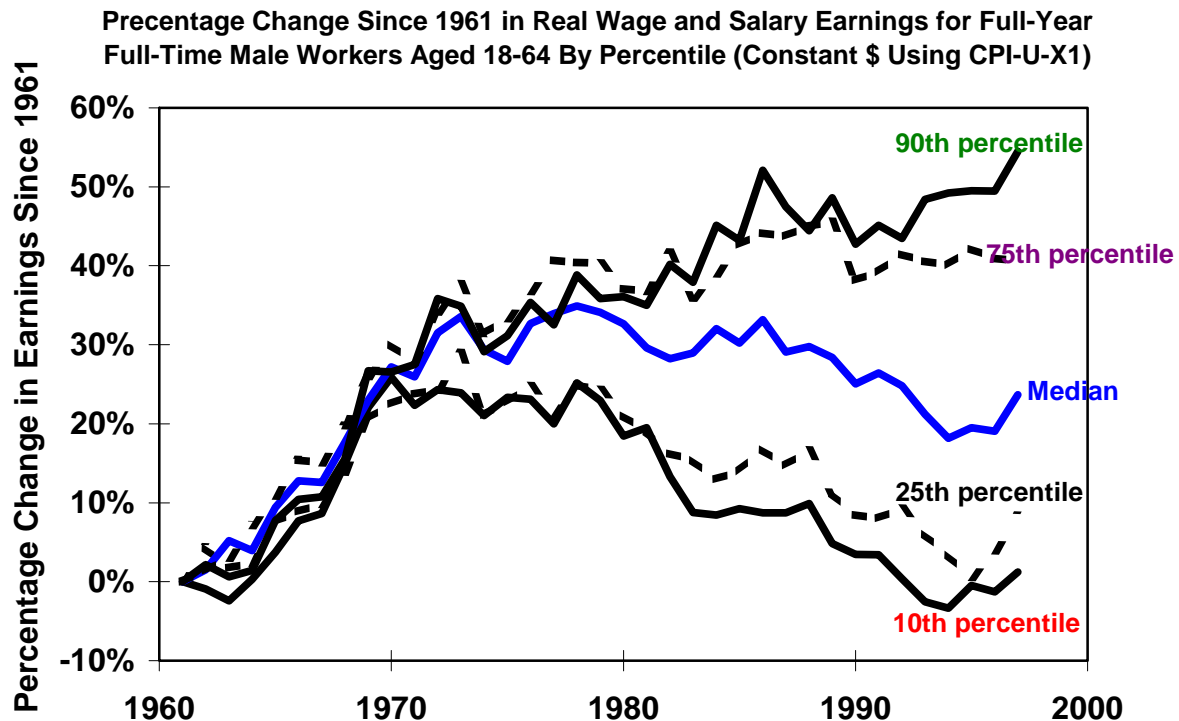
salaries and fringe benefits (health insurance, pensions, vacations, paid sick days, etc). Some of the value is channeled to creditors (e.g., buyers of the firm's bonds) who have lent the firm money. Government, the ever-present stakeholder, will receive its cut in the form of taxes. Finally, the residual accrues to the owners of the firm. It may be paid to them in the form of cash dividends or retained in the firm and reinvested on the owners' behalf by the firm (the so-called "retained earnings").

The important point to note for our purposes is that the "value creation" of which *Fortune* magazine wrote is measured strictly by the money flow going through the last pipe--the residual left for the owners of the firm. This makes the measures of "wealth creation" offered by Wall Street highly suspect. At best, Wall Street measures wealth creation strictly for shareholders. It is not at all the same as the creation of national wealth, for increases in wealth enjoyed by shareholders may come at the expense of others in the economy.

**Wealth Shifting through Wage Cuts:** Suppose, for example, that the firm modeled in Figure 1 somehow managed to reduce the flow of value distributed to employees, either by cutting the wages and fringes paid its workers, or by firing some workers outright. Suppose next that these savings from the payroll were diverted fully to the pipe labeled as the firm's owners. Wall Street (and *Fortune*) undoubtedly would celebrate this diversion of value as "wealth creation" for which the CEO deserves a hefty bonus. From the shareholders' perspective, that would seem fair. But would you call this the creation of "social value" or "national wealth"? (Imagine here that one of your own parents suffered the layoff or the pay cut). It was merely a redistribution of wealth from employees to shareholders.

In an e-mail message I had sent you an illuminating Excel display produced by Harvard economist David Ellwood. To refresh your memory, I reproduce Ellwood's graph below as Figure 2.

FIGURE 2



Note the remarkable decline in average hourly earnings of the lowest two income deciles in the U.S. Our lecture on immigration illustrated how the influx of labor into the United States may have been one (of several) factors contributing to this decline in low-wage earners' income. (By the way, these data give lie to the much-mouthed adage that economic growth is a tide that lifts all boats. It was so until about 1970, but it has not invariably been so since that time).

Part of the profits that American corporate executives have wrung out of their enterprises for their shareholders undoubtedly had hitherto been "economic rents" enjoyed by American workers. By "rents", you will recall, economists mean the difference between take-home pay and fringe benefits that workers hitherto had been paid and the absolute minimum they would need to be paid to keep them at their jobs.

These rents were substantially squeezed out through the so-called "corporate restructuring" during the 1980s and 1990s, and also through low-cost labor procured through immigration. In a handout on the economic-welfare implications of immigration, we had seen that the influx of low-cost foreign labor into the United States did effect a sizeable transfer of "sellers surplus" from American workers to American owners of capital (and, of course, to the immigrant workers as well).

In short, some of the financial wealth that American corporate executives created for their *shareholders* during the 1980s and 1990s did not enhance the nation's overall stock of wealth. Some of it is likely to have come at the expense of American *workers* who lost hitherto enjoyed "economic rents." It is not clear why the American workers who lost that wealth should be thrilled by this transfer of wealth, nor is it clear why we should chalk up this transfer of wealth as "wealth creation" from a national perspective.

In fact, I believe that in our nation we celebrate much too much the financial wealth enjoyed by the owners of real and financial assets, and not enough the economic basis of a very important economic unit in society: the individual family. You may have a different view.

**Wealth Shifting through Price Increases:** Suppose that the firm modeled in Figure 1 succeeded somehow in extracting more revenue from buyers through higher prices, leaving less consumers' surplus on the table, so to speak, and suppose those added revenues, too, are flown through directly to the firm's owners. To make this more concrete, imagine that the firm in question were a commercial health-insurance plan that vastly increased your or your parents' health insurance premiums. Wall Street analysts would celebrate this transfer of wealth as "pricing discipline" on the part of the insurance carrier and score it as "wealth creation". Would you? The shareholders of the insurance companies may be wealthier as a result of those premium increases; but the premium payers will be poorer.

In short, in putting monetary values upon firms, the financial markets do not, *because they cannot*, distinguish between mere **value shifting** among members of society and **genuine net value creation for society as a whole**.

In Figure 1, genuine value creation would have to register itself in the pipe in the upper left corner of the graph, labeled "Value." If the flow through that pipe has not changed, then total social value or wealth has not changed, regardless of what Wall Street says or what the business press gushes. Of course, we should not blame Wall Street analysts for their inability to distinguish genuine wealth creation from mere wealth shifting. It is not their job to make that distinction. We can blame them for inaccuracy, however, if they and their cheerleaders among business journalists claim that the wealth creation they see constitutes genuine wealth creation for the nation as a whole.

One may argue, of course, that in a perfectly competitive economy with full information and perfectly rational players there would be a very high correlation between true social value created (the size of the pie labeled "Value") and the value that Wall Street sees (the pipe labeled "Owners.") But, in my view, the real economy does not fit that case nearly well enough to rest one's case upon that supposition. Specifically, I am not persuaded that our nation's corporate executives are really its leading wealth creators and, I suppose,

neither would Michael Milken, who clearly is on to something that more often than not eludes the business press. Do these CEOs create the human capital they deploy, or do they merely focus its power?

**Financial Markets at their Best and Worst:** It bears emphasizing at this point that my comments are by no means to be construed as a blanket indictment of the financial markets. Far from it.

At their best, the people who work in these markets diligently and smartly scout the globe for old and novel production processes that can yield goods and services of high value. By directing investible funds (and, in their train, real resources) toward these production processes, the financial markets have played a crucial role throughout history in the creation of wealth, worldwide. In this way, and on balance, they definitely have contributed significantly to wealth creation and to human well being.

But the vision of these financial scouts does have its blind spots and can be further clouded by serious conflicts of economic interest. From time to time, these markets can help destabilize entire economies by misdirection investible funds towards highly dubious uses within these economies and by moving funds capriciously into and out of these economies.

A major misallocation of resources occurred in the United States during the 1980s, when the savings and loan banks directed hundreds of billions of dollars towards all manner of junky projects of little economic value. The cost of that misallocation ultimately was shifted to the U.S. taxpayer through a government bailout of the industry.

A major misallocation of resources, and a capricious shifting of funds, happened in Asia during the exuberant 1980s and 1990s, when international bankers forgot the meaning of the word “due diligence,” as they splurged hundreds of billions of investible funds on ill-conceived investment projects—such as auto and steel manufacturing plants of which the world already had far too many. The Asian investment bubble burst spectacularly in 1997, when asset values throughout Asia collapsed—and with them even the values of basically sound investment projects.

Remarkably, the same mischief returned once more to the allegedly sophisticated financial markets of United States during the late 1990s, when even the silliest *Internet* companies were glowingly praised and generously funded by the major investment banks—always with other peoples’ money, to be sure.

Although most people learn from their mistakes, curiously many people in the financial markets seem impervious to that learning experience. Their memory seems to be as short-lived as the memory of that hapless fellow in the movie *Memento*. Therefore, rest assured that, before long, another phony “wealth” creation bubble will be created by these markets, a bubble that will be exuberantly celebrated by the financial media while it grows, but one that inevitably will burst spectacularly, with the celebrated wealth melting away like dry ice

### **C. NON-FINANCIAL WEALTH: HUMAN CAPITAL**

The implication of the preceding section is that the financial wealth that is measured very imperfectly in the financial markets is only one slice of a nation's total wealth. In principle, a nation's total wealth is the present value of *all* of the future net benefits that can be expected to be generated by *all* of the nation's real resources. Prominent among these resources is the nation's human capital, along with its publicly owned physical infrastructure and its governmental institutions, including national security and the law.

Now, if, as Michael Milken claimed, human capital is really the nation's most important source of wealth, then we may wonder who actually creates that source of wealth: corporate executives, or human-capital builders further upstream?

As we had seen earlier in the stock charts on GE stocks, there is no question that Mr. Welch, CEO

of General Electric, presided over a period in the company's history that made his shareholders fabulously wealthy. It is reasonable to assume that his stewardship of the company's human and non-human assets had something to do with that run-up in the stock's price, and it seems fair that he personally accumulated much wealth in the process, courtesy of GE shareholders who benefited from his stewardship.

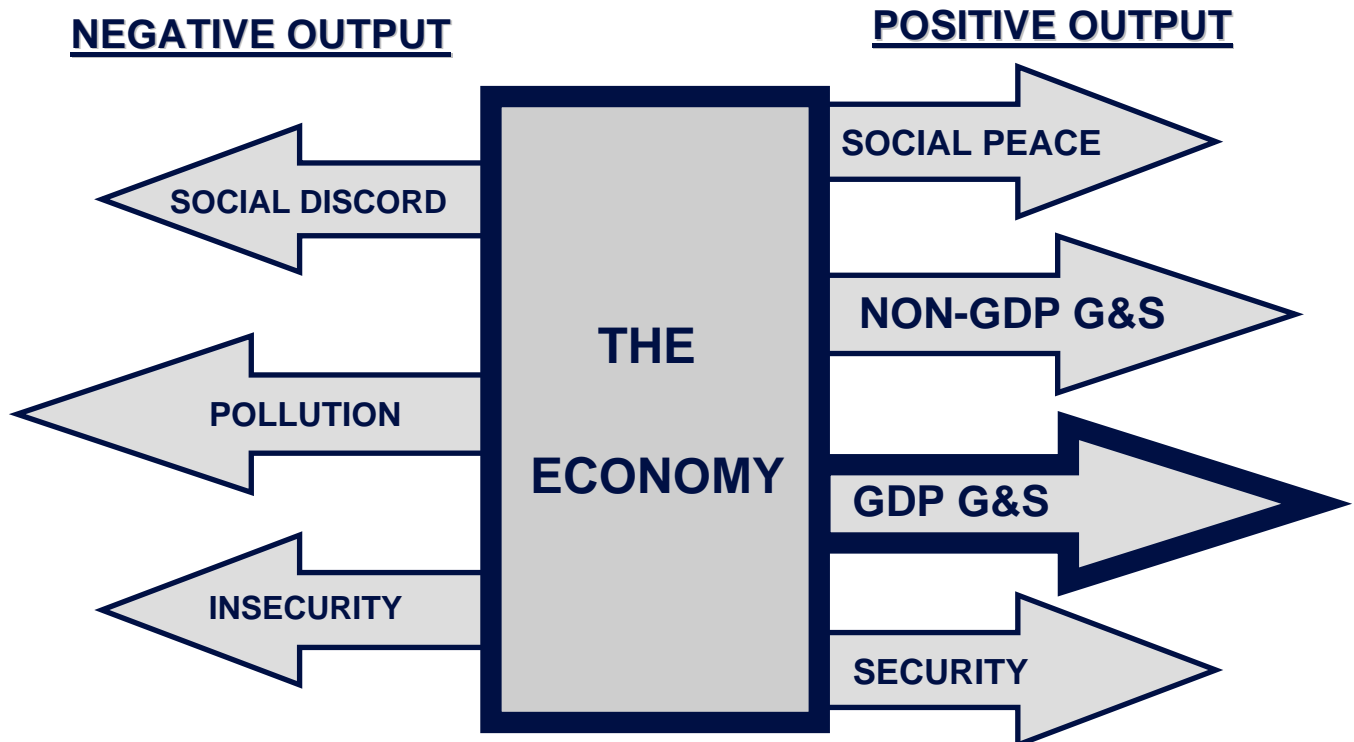
But, relative to the mothers (and fathers) and first-rate high-school teachers (possibly even some college teachers further up-stream) who helped build the human embodied in GE's employees, how much additional human capital did Mr. Welch actually help create for America during his tenure at GE?

For all we know, he deployed for the most part human capital already fully financed and "built" by others. To be sure, he forged the human capital brought to him by employees into a brutally efficient team, which is part of the source of the great wealth he is said to have created for his shareholders. Not counted in that conventional wealth calculus, however, is the toll that such a brutal corporate regime can visit on the psychological well-being of the employees themselves, and also on their families.

#### **D. ANNUAL WEALTH CREATION NOT REFLECTED IN GDP**

Loosely speaking, one can think of a nation's GDP as part (but only part) of the additional national wealth that is created by a nation created during a particular year. (Much of that added wealth, of course, will promptly be destroyed through consumption, which in turn creates "utils", the name economists use for "human happiness"). We had noted in passing in this course that a country's GDP measures all goods and service produced in that country during the year, but only if these were traded in the commercial market. The sketch below shows some (though not all) of the many non-GDP "outputs" produced by an economy, all of which contribute to the theoretical concept of "wealth" we had defined in section A above--a concept based on *human happiness*, and not merely on financial wealth or GDP. Study the list carefully and *always hereafter remember the shortcomings of GDP as a measure of a nation's well-being*.

## THE VARIED “PRODUCTS” OF AN ECONOMY



An economy, for example, can provide its families with considerable *financial security* through health insurance (as is the case in Canada or Europe), or it can leave families relatively more insecure financially (as is the case in the US, where medical bills, for example, constitute a frequently cited reason for family bankruptcy).

An economy can be arranged so that the nation's citizens live in relatively high internal security--for example, can walk freely in their cities, without fear of being harmed--or it can leave citizens with considerable fear for their safety everywhere they go. Surely that circumstance is a facet of a nation's "wealth."

An economy can offer its citizens a relatively clean environment, or one more heavily polluted.

An economy can leave its citizens with a sense of fairness about the distribution of economic privilege within society, or it can leave many citizens with a pervasive sense of injustice.

As already hinted at above, chief among the valuable services excluded from GDP are the magnificent contributions that parents (particularly mothers) make to the well being of people and, especially, to the enhancement of human capital. As my former Princeton colleague, the late Professor Marion Levy used to admonish his students, a nation's mothers arguably represent its most valuable form of wealth. (His most recent book had that theme).

Finally, an economy can leave its citizens with more or less leisure time for pleasurable pursuits other than work for pay. On average, European workers about 300 fewer hours per year than do Americans. They have more days off per year outside of formal vacations, have shorter work days and weeks, typically enjoy 6 weeks of paid vacations (versus only two in the U.S.), and so on.

Think now of the income-leisure trade-off we studied at the beginning of the course (the chapter on indifference curves). [Draw yourself the requisite graph.] Presumably, a nation that could work harder and

thereby could earn more GDP, but chooses not to do so, prefers its chosen combination of lower GDP and more leisure time to a combination with less leisure time and more GDP. It is happier with its chosen combination of GDP and leisure time. It follows that one cannot legitimately compare two nations' GDP per capita and draw from that comparison inferences about their relative "well-being." Alas, such exercises are *de rigeur* in the business press.

If the business press wishes to conduct international tinkling matches solely on the basis of relative GDP per capita figures, then, at the very least, it should add to the GDP of Europeans the value of the added leisure time they enjoy. One might do this, for example, by pricing out an hour of leisure at the average hourly gross wage earned in the nation. Something like that.

## E. GOVERNMENT AS A MAJOR SOURCE OF NATIONAL WEALTH

During the presidential campaign of 2000, then Governor George W. Bush was fond of saying that "*Government doesn't create wealth. People do!*" What do you, a by now properly trained economist. Let us think a bit about that slogan.

In some sense, of course, it is *tautologically* true. Government *per se* is just an inert set of legal contracts, as is any business corporation. If then Governor Bush merely meant that government, apart from the people working in it, does not create wealth, one must agree with him. But then he should have added that corporations do not create any wealth either—only the human beings working in corporations do that.

If, on the other hand, President Bush meant that the human beings working in government do not create wealth, then he could not have been more wrong. They certainly do. Just think of countries without effective government and how little wealth grows there. Think of Afghanistan.

Indeed, and quite ironically, President Bush ought to be the first to appreciate government's power to create private wealth, because government has been the very foundation of his own, personal wealth.

As you may know, he made his private fortune by buying, then managing and eventually selling a baseball team. As it turns out, the *City of Arlington* in Texas, a *government*, built the baseball stadium used by Mr. Bush's team, with taxes paid by the city's citizens. Without that investment by government Mr. Bush most probably could not have established his highly profitable baseball franchise.

Furthermore, Mr. Bush and his private co-investors persuaded the City of Arlington to use government's coercive power of *eminent domain* to annex some privately owned land that was needed by the team's owners.

My point here is not to criticize the arrangement worked out by Mr. Bush and the City of Arlington. It was their business, not ours. Furthermore, such arrangements are common in the world of sports.

My point is merely to illustrate that government – in this case, city government -- *has been* the very foundation of Mr. Bush's personal wealth. For that reason alone, he ought to be more openly appreciative of government's ability to create the conditions for private wealth accumulation, rather than join in the disparagement of the good people who work day-in-day-out in government.

The firefighters, the police and our soldiers are all human beings working in government. Their work is an important part of the foundation for this nation's wealth, as is the work of most civil servants in whatever occupation.

To be fair to the President, however, it must be said that he is by no means alone in reciting the mantra that government does not create wealth. Consider, for example, the following passage in *The Wall Street Journal's* lead editorial "Keynes Really is Dead" (October 19, 2001; p. A14):

...Third, government spending is less efficient, and thus less productive, than private spending. The government tends to spend on items (welfare, subsidies) that produce less economic growth than private investment does. The profound point about government spending is that the money has to come from somewhere, which means the private sector. The government must take it either through taxation or borrowing. "But either way," says University of Chicago Professor of Finance John Cochrane, "*no new wealth is created*" (Italics added).

One wonders how the professor, and the editors inspired by him, can be so sure?

Would you not want to know what kind of private-sector spending the taxes or borrowing would displace, and what kind of additional government spending it facilitates? Suppose the tax displaces mainly consumption and government uses the proceeds to make airline travel or rail travel or the postal service safer and more efficient for all of us? Can we be sure that this would create no wealth?

Suppose the government had used the funds for the biomedical research on which the private pharmaceutical industry relies?

Or suppose the government's spending helped children of low-income households grow up in better health than they otherwise would—to work in our economy or, as the offspring of low-income families do disproportionately, to fight terrorism abroad as soldiers. That is not wealth creation—in this case human capital?

Or suppose added government spending on Public Health helped prevent or contain the outbreak of highly contagious diseases in our midst—say, smallpox. That, too, creates no wealth?

In a recent address on our campus Senator Bill Frist (*R-Tenn, P'74*), in the wake of September 11, 2001, had this to say about our nation's Public Health infrastructure:

- *20% of local health departments have no e-mail*
- *More than half of public health agencies have no high-speed access to the Internet or broadcast fax transmission ability.*
- *Health departments rely on slow-tech in an age of rapid disease dissemination*
- *Less than half of hospitals have decontamination units; and less than one-third have antidotes for chemical agents.*
- *Emergency workers lack training for bio-terrorism.*

Is it self-evident to you that a diversion of private-sector spending on both investment and consumption (and taxes typically do come from both!) and the direction of these funds toward a major improvement of this nation's Public Health infrastructure would detract from this nation's wealth or would not add to it?

I would hope that your thoughts on the role of government in wealth creation probe much beyond the shallow depth of thought betrayed by the passage cited above.

Indeed, on suitable occasions *The Wall Street Journal* itself can be caught fathoming much greater depth. In its lead editorial "Risky Business" (November 26, 2001; p. A18), for example, the *Journal* commiserates with commercial insurance companies whose capital reserves have been sharply eroded by the World Center attack and that may not be able to limit their future risks by purchasing backstop insurance from private reinsurance companies. Writes the *Journal*:

The basic solution is for the government to become a "backstop" by agreeing to pay for losses

above a certain amount. Risk would then have a limit and reinsurers can back their way into pricing premiums.

Making “the government” the backstop for the insurers’ risk does not, of course, eliminate that risk. It merely spreads it over all American taxpayers. In plainer English, *The Wall Street Journal* proposes nothing other than to *socialize* part of the financial risk from terrorist attacks, just as some advocates for universal health-insurance coverage for, say, all American children (or all Americans) propose to *socialize* the cost of health insurance and of health care for those Americans.

In making its proposal, *The Wall Street Journal* echoes a call by Mr. Maurice R. Greenberg, well-known CEO of American International Group, Inc (a global American insurance company) for making government the reinsurer of last resort. After decrying a particular Senate proposal for managing the financial risk of terrorist attacks as “a socialization of risk,” Mr. Greenberg goes on to propose that the government provide, for a premium, the risk private reinsurers will not cover—that is (you guessed it!) nothing other than the *socialization* of that risk. He writes (in the same edition of *The Wall Street Journal*):

Only the government can stand behind the insurance industry, not bailing it out for past mistakes<sup>2</sup>, but providing a backstop for future potential losses so that the industry can continue to perform its vital role helping the economy grow. (Italics added; p. A18).

This statement is a clear recognition of government’s role in the creation of the nation’s wealth. Sadly, it took the World Trade Center tragedy to remind awaken many Americans to that recognition. In this course, I have tried to awaken you to it by study and thought.

**Tangible Government Wealth:** Among the tangible components of wealth produced or owned by government are the nation's roads, airports, the structures and equipment used by the armed forces for external and internal security and other parts of the tangible infrastructure that is publicly owned.

When the federal government puts in place such tangible assets, their full cost is written off as an expense in the very year that the asset is paid for, even if the assets lasts for many years (as have, for example, our B-52 bombers).

State and local governments may carry the assets in their ledger for many years, but only at their acquisition cost. Because these assets are not traded in the market place, they do not have an objective market value (as would a privately owned road or building). It is reasonable to assume, however, that very often (though not always) the true present value of the future benefit streams that roads and airports and similar public assets produce far exceeds the original construction cost of these assets.

Government's physical assets are a very important part of the nation's wealth.

**Intangible Government Wealth:** But there is more. Among the intangible highly valuable assets produced by government are the legal, administrative and other governmental infrastructure that make for a stable, civilized society with enforceable contracts, a sense of security from attack by foreign nations and a good deal of protection from attacks by fellow citizens.

Among these assets also is the knowledge produced by government-funded research. These intangibles surely are part of a nation's "wealth." Just think of the massive intangible asset that was put in place by the defeat of Germany and Japan in World War II and by winning the cold war afterwards. Also think of the intangible assets produced by, say, the researchers at the *National Institutes of Health*.

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<sup>2</sup> Added on May 15, 2010: In the wake of the massive bailout of AIG by the U.S. government to compensate for AIG's managerial mistakes, Mr. Greenberg's statement comes across almost as humorous.

Finally, and very importantly, among the intangible pillars of our wealth created by government are the civil rights laws and other government protections of the individual that help us, in this country, to live and work side by side in greater mutual respect for our racial, religious and gender differences.

Behold the much lower wealth of nations that have not mastered this art nearly as well—the Balkans and the Mideast, for example. Japan's population is rapidly aging; but that nation's hostile attitude toward people of other races prohibit it from absorbing immigrants from surplus-labor areas to fill in the gaps among workers. In the decades ahead, Japan will pay a heavy price, in terms of national wealth, for this cultural proclivity. In short, our nation's civil rights laws are more than a nicety; they are a source of national wealth.

If you still harbor doubts about government as a producer of wealth, just travel to Russia, to observe how little wealth that otherwise richly endowed nation manages to produce year in year out. Russia has natural resources in abundance and a very well educated populace. Lack of an effective government is the main source of that nation's poverty. If Russia had had our government for the last 100 years or so, it undoubtedly would be one of the wealthiest nations in the world.

Russia furnishes a neat case to illustrate what is meant by "good" and "bad" government. For most of this century Russia has had too much government, which kept its wealth locked up. Now Russia has almost no effective government, which keeps the enormous potential wealth slumbering in its natural and human resources locked up as well.

**The trick, then, is to have neither too little nor too much government. Finding the right proportion is a never-ending quest that we shall never quite get right. It would seem to me, however, that our government, in the United States, is much better and much better proportioned than seems to be appreciated by its perennial detractors (notwithstanding the occasional dart that I myself have thrown at our government from time to time in this course).**

## **F. THE TAKE-AWAY MESSAGE FROM THIS LECTURE**

Because we have covered a lot of terrain in this lecture, it may be well to distill the impressions we have gained during that sojourn into a few, crisp points.

### **1. Financial Markets are not Reliable Assessors of Wealth**

The overarching insight we gained is that the financial measures of wealth so exuberantly celebrated in the financial media are fickle and rather distorted indicators of a nation's wealth, for a number of reasons.

**First**, the analysts and traders who put monetary values on real assets do so only from the narrow perspective of the temporary owners of these assets, rather from the perspective of the nation as a whole.

**Second**, the analysts' and traders' monetary measures of wealth are at best a summary of the market's collective hope for the future monetary returns that real assets might bestow upon their owners. Therefore, the monetary wealth of a nation can drastically rise and fall simply as a result of the mood of these traders—of their expectations about the future.

It is thus that the monetary value of real assets—factories, machines and real estate—in Asia first rose to absurd heights before 1997 and then crashed to a small fraction of their former levels during 1997-98.

It is also thus that the monetary values Wall Street's allegedly sophisticated financial analysts and traders put on the newly emerging internet stocks rose to absolutely absurd heights during 1995-2000 and now have crashed to less than 10% of those values within the span of only one year. In the light of that debacle alone one may legitimately ask what Wall Street could possibly know about the wealth of a nation.

Can one ever take seriously the *dicta* about wealth in a market so often driven by the so-called *Greater Fools Theory* of asset valuation, according to which it does not matter what the future benefits from a real asset actually are, as long as there is the hope that one can pawn off an absurdly overvalued asset onto a fool even greater than oneself. Lucky people *can* make profits on that theory, but it hardly furnishes a respectable intellectual basis for assessing a nation's wealth.

**Third**, from the extremely confined perch occupied by the analysts and traders in the financial markets—a perch that eclipses from their view many flows of genuine value—it is impossible to distinguish between mere redistributions of already existing wealth among members of society—e.g., redistributions from workers to the owners of capital—and newly created national wealth.

## 2. Financial Wealth is only a Fraction of National Wealth

A related major insight you should have gained from our sojourn is that the real wealth of a nation, and the human well-being that it begets, probably cannot ever be captured in a one-dimensional measure, try as we might.

For example, measuring the economic welfare produced by a nation's economy in a given year simply by the one-dimensional index "GDP" is about as sensible as picking a mate from a group of candidates merely after seeing their feet. There is some information there, but not a whole lot.

Properly defined, that wealth is a summary of the future human happiness that a nation should be able to derive from the collection of land, structures, accumulated knowledge and human capital within its borders. That human happiness is the source of many factors, besides a nation's gross domestic product (GDP) and estimated financial wealth.

As an individual, you might possibly be able to spend a good span of time in, say, Canada and in the United States and then come to a personal judgment on which of these nations produces superior all-around human well-being for its citizens. To gain that impression, you might well start with very crude indicators, such as GDP produced per year and per capita, and current estimates of the nation's net financial wealth. But, because you are thoughtful, surely you would look also at many other dimensions of well-being, such as the physical security citizens enjoy living with one another, the overall educational attainment of citizens, the sense of fairness conveyed by the nation's system of justice, and the depth of deprivation into which society will let you tumble, should you have made personal mistakes or should external adversity befall you. All of these are very important dimensions of human well-being and, thus, of national wealth.

Even if, after such an exercise, you should be able to come to a firm conclusion about the relative wealth of Canada and the United States, your room mate, following in your footsteps, and just as thoughtful as you are, might reach quite the opposite conclusion, because she or he might weight the many dimensions of human well-being rather differently than would you. That may trouble you, because human beings like simple, objective, one-dimensional summaries of complex phenomena. Alas, it is a fact of life that, like beauty, a nation's wealth lies in the eyes (and soul) of its beholder.

## 3. Lone Ranger CEO's of Business Firms are not the only Wealth Creators

Finally, although it is tempting to ascribe increases in the total market value of business firms (their so-called "market capitalization" or "market cap") to *charismatic* CEOs, the creation of even this narrowly conceived measure of "wealth" appears to be a far more complex process than the heroic *Lone Ranger* tales sometimes offered in the business press.

In his commentary "Forget the boss as hero" (*Financial Times* May 11, 2001, p. 9), Professor John

W. Hunt of the London Business School argues that the personal characteristics of individual CEOs rarely are good predictors of a company's economic performance.

His conclusion is based on several decades' of empirical research trying in vain to discover a systematic link between charismatic corporate leadership and economic performance (the latest published in the *American Academy of Management Journal*, February 2001).

You would be wise to take with a grain of salt those business journalists who tend to gush over alleged *Lone Ranger* CEOs as teen magazines gush over teen idols.