# SOME HISTORICAL FORECASTS: ON WEO-TYPE CHAPTERS FOR 1492, 1787, 1860, AND OTHER YEARS

By Stanley Engerman

The topic of my talk has been inspired by something of particular interest to Michael Mussa, and something to which he has made major and important contributions while he was at the IMF. The biannual World Economic Outlook, published since the 1980's, under the auspices of the Research Department, has, as its purpose, the provision of "analysis and projections…[as] integral elements of the IMF's surveillance of economic developments and policies in its member countries, developments in international financial markets, and the global economic system." There is a major concern with projections and forward-looking indicators.

Now as in many cases of discussing forecasts, when they are accurate, often (but not always) no one seems to comment - that is what we should expect to happen. When, however, forecasts go bad they do attract some attention, unfavorable and critical, often in conjunction not only with an attack on the forecaster but also the entire profession to which he or she belongs.

To try to understand the nature of forecasting, and what can go right or wrong, I want to take a brief look at various forecasts in different times and places. This obviously is not a complete survey, forecasts and forecasting have an exceptionally long history, and we could, no doubt, start with the projection of time to remain in the Garden of Eden. Rather I want to describe some more relevant to the history of economics and economic history, to see what we can learn about this type of exercise.

Before giving examples I want to briefly describe several different reasons that forecasts can go wrong, since presumably, to paraphrase the first line of Anna Karenina, there are a number of different reasons forecasts go wrong, but accurate forecasts are presumably all based on the same feature.

First, would we expect long-run or short-run forecasts to be more accurate? Short-run forecasts require fewer projections and not as much information, but they

may be subject to random, reversible, events. Long-run forecasts can eliminate some sources of difficulty with short-run forecasts, but they do allow more time for shocks to occur, and also, although this is not really a source of poor forecasting, more time is allowed for the undertaking of policies to offset trends and move things in the appropriate direction.

Why are forecasts wrong?

1) We may use the wrong model or rather an incomplete model. This is sometimes referred to as the law of unintended consequences.
2) A failure to allow for shocks that will influence the system. This, of course, leads to the questions of to what extent can shocks and their impact be forecast and can we allow for expected adjustments to these unexpected changes.
3) The basic observations used in the forecast may not be correct- the underlying data may be wrong or misinterpreted- so that the forecast, while consistent with the presumed data, is wrong.
4) Forecasts made as part of a policy debate may be clouded or incorrect because of ideological beliefs. Problems arise because in some cases people actually believe the proposition, in other cases they mainly reflect the rhetoric of debate and are used to convince others. A, to me, interesting case here is the debate on the relative productivity of slave vs. free labor which become central to the antislavery debate. Adam Smith, of course, was a key figure based on his reputation, with his argument on differential incentives. This featured in later debates despite the fact that every slaveowner knew about and tried to solve the problem, that the ancient Greeks had worked out clever incentive schemes, and that Smith did not note, as had others of the time, that hunger was a superb form of coercion, or as worded more softly by his friend, David Hume, "necessity…is the great spur to industry and invention" (Hume). That ending slavery would raise output was, of course, the better forecast with which to attract antislavery opinion. It must be noted that just about every reform advocated is supported by the expectation that it will raise GNP, besides being a good moral thing. About the only exception I can think of comes from the Australian debates in the early twentieth to end Pacific Islander indentured servitude to produce sugar, replacing

it with European workers but with large subsidies and tariff protection. In the Parlimentary debate it was noted that although the policy would raise the price of sugar to consumers, by keeping out the Pacific Islanders this would be worth it to white Australians. Mostly, however, the ideology and the economic forecast seem to go in the same direction.

5) This is another problem with forecasts that I think merits more attention than it is usually given. Most forecasts take the characteristic of comparing equilibrium positions – the present position and where the system will be sometime in the future in the absence of further shocks, with less attention given to how long it will take to arrive at the equilibrium. Clearly, considerations of the period of time it will take to reach equilibrium can be crucial for planning and policy-making and it is not useful to know only the tendencies of the system's behavior and where it will end up. To demonstrate this point there are a few cases I want to note now – others will be presented later.

Among the major opponents of southern slavery, and one of the more active politically, was the distinguished Irish economist John Elliot Cairnes. His 1862 book on The Slave Power is still used in some current discussions among scholars. Cairnes believed that slavery was doomed and that northern free labor would prevail – but this would occur only "with the progess of time" "by a gradual but sure progress," and he quotes the North British Review (1862) to the effect when "slavery's doom is sealed..the execution of the sentence may seem to be relegated to a very distant day"(Cairnes).

A more exact time-frame featured in the debates about abolishing the British slave trade in the 1790's. It was proposed that ending the trade by Parliamentary legislation was not necessary since the trade, on economic grounds of profitability, would, in some short time, end. Using land/labor ratios for Jamaica the abolitionist William Wilberforce and the Prime Minister William Pitt both put the estimated time of the economic of the transatlantic slave trade ending at somewhere between 220 and 250 years, if nothing were done by legislative or other means (Wilberforce, Coupland).

Another interesting example of the importance of looking at the length of time before the equilibrium point of decline is reached comes from perhaps the most famous of the historical works on decline, by Edward Gibbon. He notes, in presenting his plan for his last two volumes, that, as an historical explanation not really a forecast but one which does raise the relevant question, that "five centuries of the decline and fall of the empire have already elapsed; but a period of more than eight hundred years still separates me from the term of my labors, the taking of Constantinople by the Turks"(Gibbon). It took 1300 years, but presumably, at last, someone got it right.

A more recent discussion, of a contemporary policy issue, also places the importance of time-frames for forecasts in perspective. A new movie about a five-day cataclysm due to global warming has attracted the expected flack by those who are skeptical about these phenomena, not surprisingly. More surprising is a strong criticism coming from the environmental movement concerned with getting the forecast correct. As presented in the New York Times: "Some leaders of nonprofit environmental groups are also distressed about the movie, though for different reasons. In conference calls and e-mail exchanges, they have said it so overstates the issue – turning a decades or century-long threat into one that explodes over five days – that it might cause people to simply laugh off the real questions." One can be quite sympathetic with this concern about overstatement, although this must be one of the few times that the global warming discussion has gone beyond the statement of equilibrium positions to entertain the question of when.

How does one measure and evaluate the success of forecasts? Generally with a large enough population of forecasters on any issue it is highly probable that someone will get it right – but how many forecasts before and after were not correct? What is the appropriate success rate for a forecaster: in baseball anything above three hits in ten at bats is regarded as successful; in 3-point attempts in basketball anything above four goals in ten shots is excellent; and a quarterback who completes more than five in ten forward passes is considered of good quality. For forecasters, however, we generally give much less slack and anticipate much better performance. Perhaps we

might give attention to some weighted average of forecasts – how much winnings there are, or does winning big once outweigh numerous losses?

The New York Times Business Section generally provides, after major stock movements, an interview with the guru who predicted it, who often explains in depth the analysis that led him to these predictions. One point to note, however, is that over some thirty years the same guru very seldom appears twice.

Discussions of the forecasting skills of the boy who cried wolf – incorrect all times except the last – raises the question of how many incorrect forecasts can lead you to disregard the next forecast of an event, an issue familiar to many Malthusians in the past who found it possible to explain away many past failures while still anticipating with confidence that the dreaded events will occur. And, there is always the last refuge of a forecaster – Pascal's wager on whether or not to believe in God, a presumed case of assymetric returns.

Dick Rosett, Michael's colleague and then dean, first at Rochester and then at Chicago, reminded me of the introduction he used at the annual School of Business forecasting luncheon. He claimed that there were two characteristics necessary to be a good forecaster:

1. Be able to accurately and confidentially predict the future.
2. Be able to accurately and confidentially explain away the past.

This, of course, does not mean to suggest that only economists and economic historians have a poor track record, if and when they do. Drawing on my interests in sports and entertainment there are some interesting cases to note, interesting since they are forecasts made with what might seem to be considerable information. Professional basketball has some infamous cases – Portland choosing Sam Bowie ahead of Michael Jordan. This was the same team that made possibly the worst number one draft choice several years earlier. In Rochester earlier the choice was made of a player name Sihugo Green over one named Bill Russell. Perhaps coincidentally the team left town several years later. In football, more briefly, three of the greatest quarterbacks of all time – John Unitas, Joe Montana, and Dan Marino, were all relatively low draft choices. Drafting baseball players is much more

difficult, since it is usually done earlier with less information than in football and basketball, and so the success rate is not at all high there.. Before leaving baseball I want to turn to another prediction – the argument that baseball is faced with universal bankruptcy unless player salaries come down since they are "swelling to unreasonable and ruinous proportions." This is a forecast by Bud Selig in 2004,and every year before, but it was also made by one of the founders of National Baseball League, A.G. Spalding, in 1881, when salaries were at about one two-thousandth of the current level (Levine).

There are obviously many entertainment examples that can be chosen,and, reflecting my age, want to describe two examples that I have recently come across. As a forecaster, would you prefer to be known as the studio executive who signed Tab Hunter to a long-term contract with the expectation that he would soon become a great matinee idol or the studio executive who terminated the contract with Rita Hayworth since it was thought that she was lacking in star quality – or neither of the above. Or to show that sometimes the forecasters have much company, we know of the twenty-odd publishers who turned down the first Harry Potter volume by J.K. Rowling, now apparently the richest woman in Britain.

There is, moreover, a more direct aspect of forecasting individual performances that we all confront in our professional lives, whether in academics, government, or national and international agencies. The first hire for an individual with a Ph.D. generally occurs after four years of college, four years of graduate school, evaluations from several teachers, a job market paper, and, sometimes, a completed dissertation. In many cases we are able to accurately predict the level of professional success, but there are quite frequently incorrect predictions. Some people achieve more success than anticipated, others do not quite achieve what had been expected.

The case of Michael Mussa has obviously been one of great anticipation, and of great accomplishment, and all the early optimistic forecasts about him have turned out to be correct. The first opportunity I had to forecast his career came with a long – very long- paper he wrote for Bob Fogel's economic history seminar, dealing with the agrarian decline and agrarian discontent of the late nineteenth century United States. The combination of empirical material, analytic interpretations, and ability to place

this work in a broad context, was a first-rate piece of economics and of economic history. Clearly he was a student who would go far – that correct forecast was relatively easy to make. The paper also permitted another correct forecast – it was obvious that the author of that paper would not, in his professional writing and talking, suffer from the sin of excess brevity.

There is a famous – probably the most famous and widely-read story of the perils of forecasting- of an individual who was led to make the supreme sacrifice because of an incorrect forecast based on a faulty interpretation. This ending is, of course, not to be suggested for any IMF forecasters, or indeed for any other forecasters who are incorrect. Chicken Little was sitting under a tree, when an acorn fell on his head. He thought that the sky was falling, and, with good public concern, went to tell the king. Along the way he picked up several others – Henny Penny, Ducky Lucky, Goosey Loosey, and Turkey Lurkey – all of whom he convinced of the accuracy and importance of this situation. As an aside – one can't help but feel that this gathering of like-minded animals going to the king is intended to indicate another aspect of the forecasting profession, the herd instinct that often seems to develop among those making predictions. Trouble hit the group of forecasters when they ran into Foxy Lox who deceived them, took them to his den, not to the king, and ate them all up. It has been suggested that Chicken Little would have been eaten even if his interpretations and forecast were correct, but I find the idea of paying for your incorrect forecasts more interesting.

Within the sphere of economics undoubtedly the most famous and widely used forecast- as well as one that thus far been rather incorrect- is that based upon the Malthusian doctrine of the relation between resources and population. Malthus, of course, was not the first to make this basic predicition; you can go back at least several thousand years to find similar forecasts about anticipated decline, but these were premature and lacked Malthus's analytical and empirical skills, as well as his public relations skills. Rather than deal with the many problems that Malthus's own forecast has presented, I want to describe how Malthus linked his theory of population and resources to the specific realization of the theory in the nineteenth century British case. "The question was how long it would be before the crunch to

British population growth would occur, a point at which population growth would slow down based on its relation to available resources. Writing in 1803, Malthus saw the deceleration in the growth of food supplies, and consequently of population, as three or four decades ahead, a prediction left unchanged as late as the 1817 edition of *An Essay on the Principle of Population.* However, after the 1821 census, and by focusing on the declining marriage rate and not the slight increase in the population growth rate, Malthus put off the occurrence of the necessary (on economic grounds) deceleration until a full century had passed. Thus, his pessimism about real contemporary events was not as extreme as the predictions of his model might suggest. This theoretical position was consistent, based on real-world conditions, with quite different periods until its realization" (Hollander, 1990). Whether or not the early nineteenth century economist, Thomas Chalmers, should be classed as a Malthusian is an ongoing debate among historians of economic doctrine. The positive claim is that he was a Malthusian rested upon his statement, that there would be "ultimate stationarity", since "every country has its limits." The counterargument notes his comment that "the time may be indefinitely distant, and indeed may never come, when the absolute and impossible barrier shall at length be arrived at" (Hollander, 1985).

When we examine the beginnings of settlement in the New World the predictions seem rather obvious. Spain was the number one country in Europe, and for several centuries was to be number one in the Americas. Columbus, commenting on the gold in Spanish territories argued the pecuniary benefits that "he who possesses it, can do as he wishes in the world," in addition to the non-pecuniary benefits that come because "it can even drive souls into Paradise" (Pagden; Elliot). Spain (and Portugal) had a one century lead in coming to the New World compared with England and France, and used this "first mover advantage" to good advantage, following the Willie Sutton rule of settlement in going where the money and the people were. The Spanish went to areas with 60-70% of the New World's Native-American population, and which contained very well developed societies, economically and politically, with great amounts of wealth. The thirteen colonies and Canada were settled later, and these were considered the dregs of the Americas, rather undesirable for settlement.

Even when they began to come to the New World, for the better part of a century more British migrants went to the West Indies than to the mainland. These mainland areas had only about 5% of the Native-American population, and these basically lived in small units, being closer to hunter-gatherers than to the sophisticated societies of South America. It was only after one century and a-half that the thirteen colonies passed Latin America and parts of the Caribbean in terms of income per capita, at roughly the same time the British passed the Spanish on the European continent (Engerman and Sokoloff). And, even 350 years after Columbus, Spain's largest remaining New World colony, Cuba, was still wealthy, becoming the producer and exporter of about one-half of the world's cane sugar.

France, on the other hand had less success in the New World than did the British, even though its colony of San Domingue (now Haiti) was in 1780 about the richest area in the world. The French in Canada were not as successful; though it seems that for a long time they did not regard its prospects highly. Thus, the duc de Sully, finance minister at the start of the seventeenth century, argued against the plans to settle Canada since, "great wealth was never derived from places beyond forty leagues [of north latitude]," anticipating a familiar World Bank map relating climate to income growth (Lokke). Much later, during the Seven Years War, between the British and the French, Voltaire presented an interesting benefit-cost analysis claiming "that these two nations are fighting over a few acres of snow," and he regarded both to be "mad" since "they spend more money on this glorious war than the whole of Canada is worth," but he argues this without a statement of what the appropriate rate of interest should be (Voltaire).

Of the many forecasts made for the new American nation after the achievement of independence, I will deal with only a few. One of the more accurate predictions was made by the English writer John Lord Sheffield in 1784. He claimed that "the states will suffer – they have lost much by separation," but that, for the British "it is not probable that our Commerce will be much hurt." He believed that English manufacturing sales to the Americans would remain high, since "it will be a long time before the Americans can manufacture for themselves." Sheffield also argued "that the commerce with the revolted colonies was of advantage to this country cannot be

doubled; nevertheless it may be easily shown, that it was not the most advantageous" (Sheffield). This forecast of continued American reliance on British manufacturing exports held for several decades, as did the importance of the American agricultural labor force, and he might have been right in the claim, made also by Edmund Burke, that England would have been better-off freeing the colonies earlier. The economic strength of his contentions is seen in the fact that U.S. per capita incomes declined in the three decades after the start of the Revolution, while, after losing the thirteen American colonies, Britain experienced a several decades long growth spurt that marked the period of the Industrial Revolution.

There are predictions made by two of the most intellectual and intelligent American founding fathers to be noted. In describing, in 1751, the economics of western settlement, Benjamin Franklin commented that "it will require many ages to settle it [North America] fully" (Franklin). Fifty years later, at the time of the Louisiana Purchase Jefferson claimed that it would make it "possible for the United States to remain a nation of farmers for a thousand years," that presumably being time it would take to fully occupy the land (McDonald). And, in 1808, when reneging a stated commitment for federal aid to help states in building canals, Jefferson described the Erie Canal as "little short of madness", given its length while going through the wilderness. To Jefferson the canal was a century ahead of its time. Even in 1822 when the canal was nearing completion, he stated that "many, I dare say, still think with me that New York has anticipated, by a full century, the ordinary progress of improvement" (Shaw).

Before turning from the Erie Canal I want to briefly mention another aspect of interest to the IMF, World Bank, and related organizations – the question of corruption in the providing of public works. Kenneth Sokoloff and I are working on a paper entitled "Digging the Dirt on the Erie Canal," drawing upon four major New York State Assembly hearings in the middle of the nineteenth century. Issues discussed included the payments, in land and money, to influence the location of the canal; concern with the placement of contracts to work on the canal – why did they all go to friends, relatives, and business associates of those responsible; padded payrolls, contract overruns, logrolling, etc. And, for a final modern-day ring, where did the

books for the period 1822-28 disappear to? Granted that in relative terms, compared to the Big Dig, the Louisiana Superdome, and many, many other expenditures, this was not a significant amount, but certainly the conditions surrounding the building of what most will agree was an exceptionally profitable – both privately and socially – internal improvement is worth considering when examining today's expenditures on social overhead capital in different parts of the world.

In the first half of the nineteenth century there were many discussions of the probable demise of slavery on economic grounds leading to a voluntary freeing by slaveowners. Those were generally based on estimates made from data relating to population, area, and resources, and all were based on one analytical principle drawn from basic economics – the law of diminishing returns.

One systematic example can be found in writings of the Virginia economist George Tucker, who also came up with some quite sophisticated national income estimates based on the 1840 census. Tucker actually presented some earlier decline estimates when in Congress, during the debates concerning the Missouri Compromise in 1820. He discussed population density estimates, and he related productivity to density in order to evaluate the argument that for about one century "there could be no danger from the relative increase of slaves." He was offended when a proponent of that danger claimed that politicians should not worry about this danger since it was too far in the future. Tucker claimed, however, that "An hundred years, sir, is a long period for human life, but is a short one in the life of a nation"(Tucker, 1820). (Tucker's political career, it might be noted, was rather brief.) Two decades later, he provided a more systematic approach to the question. He looked at the conditions of population density when villeinage was abolished in England, using the midpoint between the fourteenth-century and seventeenth-century estimates and adjusted for differential soil fertility and living standards. Using slave and white population growth in the United States, as determined from the 1790 through 1840 censuses, he gave slavery's future "a little upwards of eighty years" (although with many caveats and qualifications). Twelve years – and one census- later, and with the addition of Texas, he noted that the latter would clearly "tend to prolong the continuance of slavery'; otherwise he claimed that "the views presented by the author in 1843 remain

unchanged, as he has met with neither fact nor argument to affect their soundness" an attitude clearly worthy of any academic reply or rejoinder today(Tucker, 1855). I have one acquaintance who thinks that Tucker's extension of his prediction of the demise of slavery from 80 to about 100 years reflects a political fear, in case the time of slavery's ending would get too close and become politically relevant, but probably Tucker's revision is an appropriate triumph of new empirical information over ideological belief.

Another example from the antebellum period relates to a position taken by Abraham Lincoln in his 1858 debates with Stephen Douglas, a position based solidly on the law of diminishing returns, and a belief in what could be called the political, not the natural, limits of the expansion of slavery.

Lincoln's position in the 1858 debates was not to touch slavery where it existed but to prevent its expansion into the territories-a position that, however sound politically, seemed to Douglas to be ill-fitting with Lincoln's moral attacks on slavery. Douglas paraphrased Lincoln's point as being: "Keeping the slaves confined to their present limits whilst they go on multiplying until the soil on which they live will no longer feed them, and he will thus be able to put slavery in a course of ultimate extinction by starvation." Lincoln's response was that: "while it [slavery] drives on in its state of progress as it is now driving, as it has driven for the last five years, I say to-day, that we will have no end to the slavery agitation until it takes one turn or the other. [Applause.] I do not mean that when it takes a turn towards ultimate extinction it will be in a day, nor in a year nor in two years. I do not suppose that in the most peaceful way ultimate extinction would occur in less than a hundred years at the least; but that it will occur in the best way for both races in God's own good time, I have no doubt. [Applause]" (Lincoln).

Finally, in the discussion of southern slavery, I want to turn to a source with some contemporary resonance, the market newsletters of slave traders in the South, who issued weekly or monthly newsletters to customers detailing the prices of slaves and providing relevant information on the expected behavior of markets and of slave prices. I will quote from two at the time of Lincoln's election, where there is seen to

be some new uncertainly but no expectation of war, something that must also have been the case in the North, given the willingness to lend money to southerners.

In September 1860 Betts and Gregory, of Richmond wrote " the presidential election is having considerable effect on the market. How it will go no man can tell. But we would advice you not buy nothing but good negroes and buy them at prices to sell immediately."

In January 1861 they wrote: "There is more activity in the market with an upward tendency."

Dickson Hill Co. of Richmond wrote in December, 1860 " The year is about to close and it will be difficult for use to say what will be done in the ensuing years…. We have no hope for an political change which will give peace and some confidence in commercial matters.

"The speculations and extravagances of the last three years has put up prices of land, Negroes, and crops, to such a height that it could not be maintained, and the credit of the country has been extended to a degree unparalleled in this country before.

"We think for some years to come Negroes will not command over $1,000 for best men and $800 for best women. During the incoming year we ought not to expect more than $800 for men and $600 for women; and we fear that even these prices will not be obtained for two or three months to come."

After that of Malthus, probably the most famous prediction by a professional economist, also seemingly incorrect, was that by William Stanley Jevons in 1865, concerning the limited amount of coal in England. This is only one of a very familiar series of forecasts about the limitations of non-reproducible natural resources which have an extremely long history.

Jevons thought the limited amount of coal in England would ultimately retard England's economic progress, and he claimed that "the check to our progress must become perceptible considerably within a century from the present time," while "the conclusion is inevitable, that our present happy progressive condition is a thing of limited duration". This, he thought, would lead to "wholesale emigration" as well as possible "moral and intellectual retrogression". He concluded by offering the British

"the momentous choice between brief greatness and longer continued mediocrity" (W.S. Jevons, 1865). It may be uncertain how to evaluate Jevons's forecast, since while he was close as to the precise timing of Britain's relative decline, his reasons for expecting retardation were not correct. Is this a mixed verdict?

In an interesting family follow-up, Jevon's son, H. Stanley Jevons, returned to the problem about one-half century later, after the period including the one period of sharp increases in relative coal prices during the late nineteenth and the twentieth centuries. He followed a similar analysis, to that of his father, allowing some adjustments for higher costs, and concluded that his father was quite right-but that "it is quite possible, indeed, that we shall be suffering from this degree of exhaustion of our mines in less than 200 years." He attributed the change in timing to "the discovery of far greater deposits of coal than could have been expected" (H.S. Jevons, 1915). This shift in timing from his father's approximate 100 years to his 200 years was based on the fact more new reserves were being discovered than had been used over the previous half-century. Actually, about three decades before Jevons's writing, Charles Babbage, inventor of a computing machine, had suggested that "the source of power is not without limit, and the coal-mines of the world may ultimately be exhausted." He went on to argue, however, that because of the increased expense, "long before that period arrives, other methods will probably have been invented for producing [heat]"- possibly by drawing power from the sea (Babbage).

Many other examples of predicted mineral and resource exhaustion are available for the United States and elsewhere, often with similar prolonged time periods, under the quite specific assumptions of no changes in key parameters. For example, in England in 1624, Richard Eburne wrote that the supply of wood "fast decays" and "that very want of it only, within a few years is like to prove exceedingly hurtful to our land, and can be no way repaired, but by transplanting the people" (Eburne). Timber and other mineral shortages have been predicted in the United States since at least the late nineteenth century. These predictions often came rather quickly. Colonel Drake first found oil in Pennsylvania in 1859. By 1861 the fear of an exhaustion of the oil supply, if nothing was done to prevent waste, was expressed, and in 1862 the fear that oil would run out, apparently soon, was raised even when

about 99 percent of all American oil came from New York and Pennsylvania. At the start of the twentieth century Andrew Carnegie forecast that coal would last for about 200 years (most others set it at 80-100 years) and that the best iron ore would run out in about 30 years (Williamson). Again, it is easy to see the logic of expecting to run out of natural resources, but, as before, the key question remains how far in the future is this expected to occur.

I want to say less about the twentieth century, since much is known and some will be covered by the next paper. Irving Fisher's famous quote on permanent prosperity made in 1929 was similar to remarks Herbert Hoover also made in 1929, in introductory comments about a two-volume National Bureau of Economic Research survey of recent economic changes. Hoover said that "American prosperity, which for the last seven years has been splendid beyond all human experience" will "advance to an even higher level in the future." The New York World headline that day was "Prosperity Only Dawning, Hoover Survey Reports," and "the U.S. has but touched the fringe of potentialities after seven splendid years." Less attention is given to a caveat made by Hoover; stating this would occur "if the economic balance between production and consumption of wealth can be maintained." Yet even more concern was expressed in the last essay in the volumes, by Wesley Clair Mitchell. Mitchell said that "all is not well: Americans have seen more uniformly fortunate time; for example, in 1906." "The condition of agriculture, the volume of unemployment, the textile trades, coal mining, the leather industries, present grave problems." How rapidly these conditions will mend, we do not know. Some may grow worse." Further, now prosperous industries may become unstable, and since there had been no "severe depression since 1921 [there] is no guarantee that we shall be equally prudent, skillful, and fortunate in the years to come" (Mitchell). Not an unequivocal prediction of an immediate collapse by America's leading analyst of business cycles, but not quite a repeat presentation of Fisherian unbounded optimism.

I close this section by reminding listeners of two major forecasts that have had influence and attracted attention in the past half-century or so. First, various predictions were made during World War II that the ending of the war would bring about a return of the depression, some by leading economists. Second, by my count

the U.S. was expected to be economically overtaken by at least three different countries in the second half of the twentieth century – the Soviet Union, Germany, and Japan. These are events that we are still waiting for, and while doing so, we can no doubt, add China to the list of predicted overtakers.

To end this paper on forecasting, I was looking for a more casual approach consistent with Mike's spirit and his interests. I decided that I would play – since I couldn't dare try to sing it – what I regard as the best popular song concerning forecasts, by George and Ira Gershwin for the movie Shall We Dance. This song is also unusual in that it is about the only solo Ginger Rogers ever got in the Astaire-Rogers movies.

They All Laughed

[Verse]
The odds were a hundred to one against me
The world thought the heights were too high to climb
But people from Missouri never incensed me
Oh, I wasn't a bit concerned for from history I had learned
How many, many times the world had turned

[Chorus]
They all laughed at Christopher Columbus
When he said the world was round
They all laughed when Edison recorded sound
They all laughed at Wilbur and his brother
When they said that man could fly

They told Marconi
Wireless was a phony
It's the same old cry
They laughed at me wanting you
Said I was reaching for the moon

But oh, you came through
Now they'll have to change their tune

They all said we never could be happy
They laughed at us and how!
But ho, ho, ho!
Who's go the last laugh now?

They all laughed at Rockefeller Center
Now they're fighting to get in
They all laughed at Whitney and his cotton gin
They all laughed at Fulton and his steamboat
Hershey and his chocolate bar

Ford and his Lizzie
Kept the laughers busy
That's how people are
They laughed at me wanting you
Said it would be, "Hello, Goodbye."
But oh, you came through
Now they're eating humble pie

They all said we'd never get together
Darling, let's take a bow
For ho, ho, ho!
Who's got the last laugh?
Hee, hee, hee!
Let's at the past, laugh
Ha, ha, ha!
Who's got the last laugh now?

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