

The Economy in Perspective

Neutrino Economics ... Today's paper announced some big news about a little particle, the neutrino, that has transformed the universe—in theory. Physicists have a conventional model that describes the operation of the universe, but they have long argued about the basic laws of subatomic particles and their attracting forces. The disagreements are so fundamental that some eminent physicists believe the universe is expanding, others that it is shrinking. The standard model decrees that neutrinos have no mass. An international team of physicists' discovery that neutrinos *do* have mass (albeit very, very little) invalidates a key element of the standard model and creates a vacuum at its center.

Theoretical physicists may have been thrown for a loop over this neutrino business ("It shows us that we really just don't know nothin'," observed a Nobel physics laureate), but don't expect planets to stop orbiting the sun, cellular telephones to break down, or magnetic resonance imaging equipment to overlook tumors. The standard model of particle physics and attracting forces has served to address a wide range of important questions, allowing physicists to advance our knowledge of the universe and contribute ideas that underpin many new products and services. By modifying standard theory to account for the nontrivial neutrino, physicists may attain vast new universes of knowledge.

Like physics, economics has a standard model representing the mainstream view of how the economy works. This model has evolved over time to reflect the latest advances in economic thinking (provided the new ideas fit historical data and provide plausible forecasts). Conventional wisdom holds that in the short run, output is determined by the strength of total demand, while in the long run, output is constrained by supply factors like labor force growth and productivity. Inflation is a monetary phenomenon, but in the short run, price-level movements can be affected by many special factors.

Large-scale macroeconomic models spell out the theory through a set of equations that are estimated using historical data. Forecasts are generated by making assumptions about variables' future behavior and monetary policy actions. Although forecasts can go astray for many reasons, it is always useful to consider whether a model gives erroneous projections when the

correct assumptions are made. Could certain features of the model's structure be inaccurate? Is the theory behind the wage determination process wrong? Are foreign economic conditions inappropriately accounted for? Has the productivity trend escalated? These questions are equivalent to asking about the correct mass of neutrinos.

Although the current economic boom is terrific, it makes life difficult for economic soothsayers and those who rely on them. Forecasters and policy advisors who use the standard model have repeatedly been embarrassed by an economy that persists in expanding more vigorously—and with lower inflation—than the conventional wisdom would allow. With the business cycle stubbornly defying their logic, practitioners are in disarray. On television and in print, the revisionists fervently explain how the economy has *changed*, while the skeptics defensively assert that the change is only *apparent*.

Business cycle theory, like particle physics, is an incomplete science. Economists, like physicists, have long sought a unified theory to explain all the laws of motion elegantly, without introducing special factors or making ad hoc adjustments. So far, perfection has proven elusive. It is one thing, however, to realize that the conventional model cannot explain all phenomena, and quite another to discard that model with nothing better to replace it. Anyone can tell a plausible story that explains current data, and, as news reports verify, this creates many simultaneously plausible stories. The business of science is to construct superior models, but they take time to build and validate. The existence of the neutrino, for example, was theoretically posited in the 1930s, but it has taken more than 50 years to make an accurate estimate of its mass.

Had the Federal Open Market Committee been basing monetary policy solely on forecasts driven by conventional wisdom during the past several years, it would likely have acted already to head off expected inflationary pressures. That it did not suggests a willingness to chart its own course in an economic universe filled with black holes. Since economists probably will not repair the model fully in the near future, it would help if observers knew as much as possible about the Committee's destination and assumptions. That knowledge may prove to be a matter of considerable gravity.