Economic Theory and Social Policy: Where We Are, Where We Are Headed

Herbert Gintis

Abstract

Standard economic theory has told us for more than half a century that, to attain a high level of social welfare, there is no viable alternative to a market economy regulated by a powerful state. Critics often represent standard economic theory as a doctrinal defense of the free market. The truth is quite the opposite. Free market ideology is unfounded. Standard economic theory provides the proper framework for analyzing market failure. This theory must of course be supplemented by a theory of state failure, as well as a theory of nonstate solutions to market failures. Standard economic theory offers a poor approach to macroeconomic dynamics, but we complexity and evolutionary theorists are working on correcting this situation.

Keywords: neoclassical economic theory, general equilibrium theory, economic policy, evolutionary economics, complex dynamics

RADICAL ECONOMICS AND BEYOND

While studying for my PhD in mathematics at Harvard, I became deeply involved in the anti-Vietnam war and civil rights movements. Feeling an uncomfortable gap between the abstractness of mathematical theory and concreteness of radical politics, I completed my master’s in math, and switched to the PhD program in economics at Harvard, producing some years later, at the height of the influence of the radical student movement, a doctoral dissertation entitled “Power and Alienation: Towards a Radical Welfare Economics.” In the process, I studied Marxian economics, helped to found the Union for Radical Political Economics, and penned bitter critiques of the brand of standard neoclassical economics I learned at Harvard. I made a good living at this, and wrote a rather well-received book with my longtime coauthor Samuel Bowles entitled Schooling in Capitalist America (Bowles and Gintis 1976).

In the midst of bloody wars at home and abroad, with my professors either oblivious to or mildly-to-avidly supporting the war in Vietnam, I was certain that the economic theory they espoused must be deeply flawed and began to develop an alternative. How deeply disaffected was I? Here are the final sentences of a paper I published in the orthodox American Economic Review at that time:

We [young economists] must be outlaws to preserve our sanity and to seek a decent world for our children. We must be outlaws because … our expertise is otherwise … perverted toward ends incompatible with our personal self-realization in our work. But we will not be outlaws forever. Join us. (Gintis 1972)

After finishing Schooling in Capitalist America, Bowles and I initiated an ambitious study of market socialism, and we began to advocate a version involving democratically organized and
worker-controlled firms (Bowles and Gintis 1990, 1996). But there was a problem with our theory that resisted solution: if worker-controlled firms would be at least as efficient as capitalist-controlled firms, why did such firms not simply win out on competitive markets? One could offer silly reasons, such as collusion among capitalists to undermine democratic workplaces or laws that disfavor economic democracy. But we considered such explanations as implausible at best. We concluded, on the basis of standard economic reasoning, that such firms cannot enjoy the benefits of widely dispersed ownership characteristic of large capitalist firms (Gintis 1989).

This experience guided me to three rather momentous conclusions. First, the market socialist economy based on worker control is no more feasible than the state socialist economy as an alternative to capitalism. Therefore we must embrace capitalism and search for correctives that provide social justice with high efficiency. Second, standard economic theory, despite its flaws, is often powerfully insightful. We should thus embrace this theory, dynamicize it, and correct its flaws. Third and finally, Marxism is a great way to develop a broad, dynamic, interdisciplinary view of social theory, but it is quite out of its depth as a serious economic theory. We should look elsewhere (especially to complexity and evolution) for inspirational new directions in economic dynamics. I have thus spent the rest of my professional life trying to build on the success and correct the flaws of standard neoclassical economic theory using insights from the other behavioral disciplines and deploying the tools of complexity analysis.

Most of my radical economist friends did not follow this path, arguing that standard economic theory is simply an apology for free market capitalism. This view is wrong for two reasons. First, as I shall describe below, standard public economics, fully integrated into standard economic theory, provides a powerful taxonomy of market failure, one that is as cogent today as when I learned it in graduate school many years ago. This theory implies that a successful economy will never be a free market economy, but rather will exhibit a high degree of social regulation to neutralize the effects of market failures. Second, the standard general equilibrium model in fact provides as strong support for the viability of a state socialist economy of the Soviet type as it does for a capitalist economy (Lange and Taylor 1938; Schumpeter 1942; Gintis 1991). Therefore the economist’s chief model of economic exchange has no sociopolitical bias whatever. Unfortunately, the standard informational assumptions of this model—especially the assumption that a state planner has complete information concerning all production processes, technological alternatives, and consumer and worker preferences—are implausible (Hayek 1945; Gintis 1991). This undermines its support for state socialism, but not for a socially regulated market economy.

**COMBATTING ECONOMIC ILLITERACY**

Progressives and conservatives alike tend to characterize standard economic theory as a justification of free markets. Conservatives like the idea, and progressives do not. Therefore there is a strong tendency in progressive circles simply to reject standard economic theory and to embrace one or another “heterodox” alternative. Both groups are misinformed, to the point of being economically illiterate concerning the received wisdom of economic theory.

It may seem that there is no politically neutral received wisdom that is shared by most economists, but this is not the case. Except in the area of macroeconomic policy, there are few disagreements. In the macroeconomic area, as I describe below, the standard models are pretty awful. But economic policy has a deeper problem: simple models can show you the general direction of effects, but when there are offsetting tendencies, only quantitative evidence can supply a credible answer. For instance, increasing government expenditure to lower the unemployment rate may be offset by the effects of government debt...
on interest, inflation, and growth rates. Only careful attention to details can determine the net effect of the policy, and even this is subject to significant error.

However, one cannot even begin to assess economic policy seriously unless one knows basic economic theory. The books mentioned below are basic starting points for gaining a facility in economic theory. Alternatively, you can simply buy one of the leading undergraduate textbooks and plow through it. The textbook will be more demanding, very fat, and quite expensive. Before doing this, I advise that you tackle one or more of the following volumes. They are all quite good, and it wouldn’t hurt to read them all. But here are my impressions.


Wheelan explains the benefits and limitations of markets, the benefits and limitations of government interventions, the basics of finance (especially, how to avoid the costly errors that about 50% of investors are prone to make, such as believing they can pick winners), and the role of international competition. There is nothing that Wheelan asserts that I think is not 100% correct, including his exposition of development economics and globalization. Highly recommended.


This book is the most sophisticated of the three and covers extremely important material left out of the others. This includes an analysis of property rights, market externalities, public goods, asymmetric information, and other absolutely fundamental aspects of modern economic theory, which is really the theory of the interaction between markets and government regulation for efficiency and stability. It is rather weak on national income accounting (none of the books is strong in this very difficult area), and it does no general equilibrium analysis (e.g., the very instructive Edgeworth box is missing). Finally, the book rather slights statistical information on the economy and gives little historical perspective.


This book is a little out of date, and is especially concerned with regulatory policy in dealing with market volatility (the business cycle). It has lots of interesting statistics, and gives a detailed explanation of the Federal Reserve and its operation. It is similarly strong on analyzing international trade and exchange rates. Read this after *Economics for Dummies*.


This book does not deal with recent economic issues, but it is well worth reading. It is especially strong on economic history and it presents in some detail the various schools of thought in macroeconomic theory. It also does considerable national income accounting, which I consider a prerequisite to understanding current economic issues. Its microeconomics sections are rather brief. It is certainly not a substitute for *Economics for Dummies*.

After this, I would tackle the more formal free online CORE course on introductory economics at http://www.core-econ.org, developed by my coauthor Sam Bowles and other colleagues.

**PROBLEM AREAS OF STANDARD ECONOMICS**

There are two problem areas with the standard neoclassical model, which I will identify here with the Walrasian general market interaction model, as described below. The first is that the model is good at equilibrium analysis, but has no serious treatment of economic dynamics. In fact, as I explore in my most recent book, *Individuality and Entanglement* (Gintis 2016b), the absence of plausible dynamic models of the evolution of the economy is evident in sociology and political science as much as in economics. There is some hope that the maturation of
complexity theory and evolutionary economics might correct this situation.

The second problem area is in the modeling of human decision-making. The standard rational actor is very powerful in principle, but it rests on four untenable assumptions. First, it tends to assume that economic actors are self-interested, whereas, in fact, actors often satisfy all the axioms for rational choice, but they care about others and use moral reasoning in making decisions. Second, the standard rational actor model assumes agents are consequentialist in the sense of valuing alternatives only according to the way their choices promote their preferred outcomes. In fact, in many characteristically human collective actions, such as voting in a large election or participating in a mass demonstration, no single individual (except for a few leaders) makes any difference at all. Yet this participatory behavior exhibits the major characteristics of truly rational behavior (Gintis 2016a). Third, the standard theory takes beliefs as subjective (the agent's so-called subjective prior), whereas in fact beliefs tend to be distributed and validated across social networks. For instance, the often excessive certainty with which individuals profess their beliefs likely derives from the fact that virtually all individuals in their social networks share these beliefs. Contemporary behavioral and experimental game theories provide powerful tools for repairing these weaknesses of the standard rational actor model.

In this model, the economy consists of individuals and firms. Firms make products using labor, capital goods (buildings, machines), and products (called intermediate goods) that they buy from other firms. Individuals own labor and capital goods, which they supply to firms in return for a wage (labor) and a rental price (capital goods). It would be more realistic to have the firms own their capital goods and simply borrow money to pay for them from individuals (e.g., through financial markets, such as stocks and bonds). But it amounts to the same thing as simply assuming capital goods, like labor, can be costlessly moved from one firm to another, and the capital goods are owned by individuals and rented to firms. Of course, when we get to market dynamics, ignoring fixed capital can be treacherous, but we will deal with dynamics later. Finally, individuals own shares entitling them to the profits generated by the firms.

Firms produce marketable goods, which they sell to individuals and to other firms. Individuals consume whatever they purchase from firms, and whatever funds that remain are used to buy capital goods and shares in the firms, which is their wealth. If individuals are short of income, they can sell some of their capital goods to other individuals. This is often called the double circular flow of goods and money: (1) individuals supply labor and capital to firms, and (2) firms supply income to households for consumption.

The economy is in market equilibrium when the wage and rental price of capital goods (interest rates, profit rates) and the prices of goods equate supply and demand in the labor market, the capital market, and all goods markets, assuming firms maximize profits and individuals maximize their utility over consumption and savings.

The general market equilibrium model is attractive because it abstracts from details, allowing us to state and understand clearly the nature of market failures and evaluate possible measures to correct them at the highest level of generality. In many cases, adding more detail would not add much, if anything, to the analysis. When it would be useful, we may simply
add in more detail. We may thus use this model to state what are called the “fundamental theorems of welfare economics.”

The Fundamental Theorems of Welfare Economics

To state the famous First Fundamental Theorem of Welfare Economics, we say an allocation of labor and capital to firms and goods to individuals is Pareto optimal if any reallocation that makes one individual better off must make at least one other individual worse off. This is, of course, the standard definition of efficiency in economic theory. We then have, under very general conditions,

Theorem 1. First Theorem of Welfare Economics: Every market equilibrium is Pareto optimal.

The proof of this theorem is extremely simple, but not worth going through here. The interested reader can find a proof on Wikipedia. By the way, and to avoid confusion, the term “welfare” in economics does not mean subsidies to the poor, but rather individual and social well-being in general.

Theorem 2. Second Fundamental Welfare Economics: Every Pareto-optimum can be achieved by an initial distribution of ownership of labor and capital, followed by market exchange.

This theorem is interesting, but is of no practical use because it is not politically or ethically feasible to redistribute ownership arbitrarily to attain equity goals. Moreover, a one-time egalitarian redistribution would likely return to another inegalitarian state in subsequent periods. Of course, continual arbitrary redistributions are possible (if neither ethical nor politically feasible), but these interfere with incentives and so lead to severe economic inefficiencies.

The First Fundamental Theorem, by contrast, is extremely important not because it accurately reflects actual economic conditions, but because it helps to understand when it does not, and why. The general market interaction model is practically relevant because the economy is normally rather close to equilibrium, although it can experience rather dramatic excursions far from equilibrium for some number of time periods, as in the case of financial bubbles and persistent stagnation.

THE THEORY OF MARKET FAILURE

The basic question of when unregulated markets of the sort described above are the most effective instruments of economic efficiency was worked out in the post–World War II period, and remains valid today, a half century later (Musgrave 1959, Atkinson and Stiglitz 1980). This theory is called the theory of market failure. There are four types of market failure:

1. Increasing Returns to Scale. In some production sectors, the efficient firm size is so large that either efficiency or market competition must be sacrificed. For instance, a city’s water supply may be most efficiently supplied using one large reservoir and a unified system of delivery and waste removal. There is simply no room for multiple firms to compete, so the service is supplied by the local government.

2. Public Goods. Some goods are nonexclusionary—they are consumed equally by many or all individuals, although they may be valued differently by different individuals. For instance, national defense protects all equally, and many forms of public health measures affect the incidence of diseases for the entire population. Public goods must be publicly provided, or at least publicly financed, in most cases.

3. Market Externalities. Some goods are produced using technologies that release waste products into the environment at zero or low cost to the producer but that impose high costs on everyone else. Economic theory suggests that the costs imposed by
these effluents be charged to producers, an example being tradeable effluent taxes (Atkinson and Stiglitz 1980).

4. **Quality Goods.** There are many market sectors in which the quality of a product cannot be ascertained until after purchase, and in which reputation effects are not sufficient to ensure a minimum quality level. In such sectors, quality can be maintained by legal regulation. For instance, most countries have health standards for restaurants and quality standards for hotels that prevent an upstart from profiting at the expense of consumers and the high-quality firms. Similarly, professionals may be licensed (e.g., medical and legal services), and pharmaceuticals may be regulated for safety and effectiveness. Of course, licensing can also be imposed to give a special group an unmerited monopoly position. This successful rent-seeking is form of state failure, to which I turn.

It is not feasible to correct all market failures through government intervention because regulation may be excessively costly or susceptible to manipulation by powerful special interest groups. *State failure is quite as endemic as market failure.* That is, the political dynamics that give rise to particular forms of state intervention are governed by forces that may place little value on public welfare. Special interest groups, for instance, may agitate for interventions that benefit their members at the expense of the public. Similarly, some forms of regulation invite corruption by officials. These behaviors are known as rent-seeking in the economics literature (Buchanan, Tollison, and Tullock 1980).

**GENERAL MARKET INTERACTION THEORY’S CRIPPLED DYNAMICS**

Walras was aware that his model required a price-adjustment mechanism that would ensure stability of equilibrium. He considered the key force leading to equilibrium to be *market competition*, which he thought would result in the continual updating of prices by traders until equilibrium was attained. However, he believed that a model where economic agents individually update their prices would be analytically intractable, whereas a simple centralized model of price adjustment, which he called the *tâtonnement* process (*tâtonnement* means “groping around” in French), would more easily lend itself to a proof of the stability of equilibrium.

Walras modeled the *tâtonnement* process on the Paris Bourse (stock exchange), where an auctioneer calls out prices to a multitude of buyers and sellers, and sets the final price as that which equates the number of buyers and the number of sellers. As it turns out, Walras was quite mistaken in thinking that such a mechanism leads to dynamic stability.

The stability of the Walrasian economy became a central research focus much later, in the years after the proof of the existence of equilibrium prices (Arrow and Debreu 1954). Following Walras’s *tâtonnement* process, these models assumed that there is no production or trade until equilibrium prices are attained, and, out of equilibrium, there is a price profile shared by all agents, with the time rate of change of prices being a function of excess demand.

These efforts at proving stability were unsuccessful (Fisher 1983). Indeed, subsequent analysis showed that *chaotic price movements* are the generic case for the *tâtonnement* adjustment processes (Saari 1985).

**COMPLEXITY AND EVOLUTION PROVIDE A MARKET DYNAMIC**

A novel approach to the dynamics of large-scale social systems, called “evolutionary game theory,” was initiated by biologists Maynard Smith and Price (1973), and adapted to dynamical systems theory in subsequent years (Taylor and Jonker 1978; Weibull 1995; Gintis 2009). The application of these models to economics involved the shift from *biological reproduction* to *behavioral imitation*, otherwise known as “adaptive dynamics” as the mechanism for the
replication of successful agents (Mandel and Gintis 2014, 2016).

I do not have the space here to describe the mathematical structure of complex evolutionary market dynamics. For this, I refer the interested reader to one of the above references, and to Gintis 2013. Rather, I will describe an agent-based simulation of the proposed dynamics. Agent-based computer simulations, by the way, represent a common method for dealing with complex systems whose defining equations are difficult or impossible to solve analytically.

I develop an agent-based model of a general market interaction system with many sectors, firms and consumers, capital and labor, in which there is no public information (Gintis 2007). Prices in this system are private information, in the sense that each firm generates its own prices and must engage in a costly search to discover the pricing strategies of its competitors. Moreover, each worker has his own private discount rate, disutility of labor, and reservation wage, and consumers discover favorable goods prices through using a search strategy. Change in this economy results from agents experimenting with their own parameters and assessing the results, and agents copying the behavior of others that have been more successful. This is adaptive expectations in operation.

Perhaps surprisingly, my dynamical model of general market interdependence, which is clearly a complex adaptive system in the sense of Beinhocker 2006, stabilizes rather quickly to a stationary distribution in which prices are approximately at their market-clearing values, profits are approximately zero, and the unemployment rate averages about 4%. But the devil is in the details. My economy exhibits “fat tails” with many large excursions from equilibrium, even in the absence of any systemic shock (see figure 2). Moreover, in the general case firms experience excess supply for their product and have positive excess demand for labor, even while labor is in aggregate excess supply. This is partially illustrated in figure 1 for one of the sectors in my agent-based model of the economy. In effect, firms evolve by developing reaction functions to changing economic conditions that maximize profits, but not by solving complicated maximization problems with extensive knowledge of demand and supply conditions in all input and output markets, but simply by “muddling through” with judicious jiggling of their reactive behavior and occasional switching to a strategy of a better-performing competitor.

Like complex adaptive systems in general, my agent-based model does not achieve optimality. Average consumption reaches about 75% of Pareto-optimal consumption after about
two hundred periods, and oscillates thereafter at between 72% and 80% efficiency (figure 3).

Finally, my model clearly exhibits the failure of the Law of One Price, as shown for a ten-sector economy in figure 2. Note that after about 100 periods the standard deviation of prices settles to an average level, which persists throughout the 3,000-period run, punctuated by price excursions of as much as 50% of the equilibrium price (which is unity for all goods, by construction). These excursions are not due to any systematic disturbance applied to the underlying model. Rather, they are local resonances that account for the some of the “fat tails” of stochastic variables in a complex economy.

When my mentor Kenneth Arrow read the paper by Mandel and me proving the stability of equilibrium, he sent me the following e-mail:

I have still not quite gone through every detail of your proof of the stability of your process for getting into equilibrium, but I get the idea, and it is very good. I thought about this issue when beginning my career, and wrote down a very vague model. (I did not prove anything, and I did not include the paper in my Collected Works). I simply noted that, if, for example, the market displayed excess demand, then the customers of one firm could not shift to another, so each seller had a (temporary) monopoly and could raise prices. I used this as a justification for the “law of supply and demand,” but I failed to notice that, during the equilibration process, different firms might be charging different prices. You have formalized the matter, but, much more importantly, set conditions on the adjustment process to insure convergence.

Figure 3: The Efficiency of the Simulated Economy. Note that after only 100 periods, the system has attained nearly 79% efficiency. After 100 periods, average utility appears to be a random walk between 72% and 80% (the apparent declining trend in the figure is an artifact of truncation to 3,000 periods).

WHAT’S WRONG WITH STANDARD MACROECONOMIC THEORY?

Critics of standard economic theory usually do not understand or do not care about the sort of microeconomics that I defend above, but rather they identify economics with macroeconomics, which deals with the management of economic fluctuations, including the business cycle and financial instability. This concern with the frailties of macroeconomics is well founded, but using this lever to undermine economic theory as a whole is at best disingenuous. Like many of its critics, I have no respect for standard macroeconomics, in either its Keynesian or New Classical forms (Mankiw 2014). I do not believe we have a superior alternative yet, but complexity and evolutionary theories are moving towards one.

It is easy to see why macroeconomics is such a mess. The microeconomic model described above simply has had no plausible dynamics. But the management of economic volatility is an inherently dynamical endeavor. Therefore, macroeconomists long ago abandoned the general market interaction model in favor of toy models with just a very few variables—one firm, one type of labor, one good, one capital good, and one “representative agent.” It is easy to write dynamic models for such a toy system. But the resulting models have virtually nothing to do with a real dynamic economy, which has a plethora of firms, goods, and agents. Volatility is an emergent property of complex market dynamics, as we have seen above.
Because these models are so weak, the main idea they deploy to explain financial and investment behavior—rational expectations—is completely inappropriate. The macroeconomists’ argument is that rational agents can be assumed to know the correct model of the economy, and they base their future expectations by essentially running this model and seeing the results. This argument is fine if the real economy is a toy economy. But it is not. There is virtually no way for rational economic participants to predict the future except by extrapolating from the past. This process is called adaptive expectations and is the basis for all agent-based models of economic dynamics. Rational expectations theory is simply a fairy tale.

This does not mean that all attempts at macro modeling must be a failure. Adaptive expectations might well do better in a complex model of the economy, but then only for a short-term forecast, much like weather reporting before the development of large-scale hydrodynamic models. But long-term economic modeling faces basic unknowns, including the nature and pace of technical and governmental regime change. Therefore, reduction in economic volatility must be integrated directly into our model of the economy—the sort of automatic stabilizers that react to shocks by providing countershocks without the need for active government intervention. One example of this today is unemployment insurance. When unemployment rises, consumer demand is increased by the payments to unemployed workers.

It is difficult to devise a reasonable set of financial shock absorbers from pure economic theory because money and tradable securities, believe it or not, are not part of microeconomic general market interaction models. The agent-based models described above do integrate such institutions with real goods, labor, and capital goods markets, thus allowing us to assess the sources of volatility and ways to attenuate their effects. The task for the future, then, is to make realistic models of this type based on data from functioning economies (Di Guilmi et al. 2011; Mandel et al. 2015).

**CONCLUSION**

Standard economic theory has told us for more than half a century that there is no viable alternative for a high level of social welfare to a market economy regulated by a powerful state. Critics of economic theory have ignored this basic fact. Standard economic theory provides the proper framework for analyzing market failure. This theory must, of course, be supplemented by a theory of state failure, along with a theory of nonstate solutions to the tragedy of the commons (Ostrom 1990; Colander and Kupers 2014). Standard theory has a poor approach to macroeconomic dynamics, but we complexity and evolutionary theorists are working on correcting this situation.

**WORKS CITED**


Herbert Gintis


