MERCATUS CENTER
GEORGE MASON UNIVERSITY

Working Paper 55

An Appeal from New to Old (and Middle-Aged) Austrians

J. ROBERT SUBRICK AND SCOTT BEAULIER*

Abstract

The development of Austrian economics has come to a fork in the road. Old lines of research have run their course. Unfortunately, new ones have yet to emerge. We argue that for Austrian economics to succeed, it must understand why it has not penetrated the mainstream. After offering a rationale for this failure, we examine the lack of discussion between the Austrians and the mainstream. (JEL Classification: A14, B53, P26)
Keywords: Sociology of Economics, Austrian Economics, Political Economy

* J. Robert Subrick is with the Center for Institutional Reform and the Informal Sector at the Univeristy of Maryland's Department of Economics. Scott A. Beaulier is an Assistant Professor of Economics at the Stetson School of Business and Economics at Mercer University. The authors thank Peter Boettke, Christopher Coyne, Eric Crampton, Andrew Farrant, Peter Leeson, James Marchand, Skip Mounts, David Prychitko and Andrew Young for useful comments and suggestions on an earlier draft of this paper. All remaining errors belong to the authors.

I. Introduction

When the Austrian revival began in 1974, significant problems had arisen within mainstream economics. Economists had made little progress in the theory of imperfect information (although that was soon to change). The theory of market socialism remained a viable model for many economists. Central planning, with its emphasis on investment, formed the basis of international efforts to improve the well-being of many people in the developing world. Perfect competition reigned supreme not only as an ideal for welfare economics but as an adequate representation of reality. President Richard Nixon, as did Milton Friedman, aptly summarized the mainstream position in macroeconomics when he stated that "We're all Keynesians now." The role of institutions as a primary factor in explaining economic outcomes remained outside the domain of economics.

As problems in the neoclassical approach became evident, Austrian economists responded with their own solutions. The Austrians offered insights into the theory of imperfect information (Thomsen 1992). They challenged the viability of market socialism and development planning (Lavoie 1985a, 1985b, Boettke 1994). They developed the theory of the market process as an alternative to the perfect competition model (Kirzner 1992), and they began to analyze legal and monetary institutions (Rizzo 1980, White 1984). Austrian economists provided answers to shortcomings of the mainstream models as they existed in the mid 1970's.

Mainstream economists did not refrain from addressing the shortcomings, and they offered their own answers to these issues. Joseph Stiglitz, with numerous co-authors, challenged the perfect information assumption and provided new insights into the workings of imperfect markets (see Stiglitz 1994, 2002 for overviews). The theory of market socialism lost its appeal due to the fall of communism in Central and Eastern Europe. The development of public choice models further eroded support for market socialism (Levy 1990, Shleifer and Vishny 1998). Top down planning organizations, such as the World Bank, shifted from an emphasis on investment to market-oriented reforms (as characterized by the *1996 World Development Report*, "From Planning to Markets" and the *2003 World Development Report*, "Building Institutions for Markets"). The Washington Consensus's emphasis on privatization and deregulation explicitly recognized the importance of government failure and the need for market reforms in the developing world (Krueger 1990). Even the perfect competition model, which had long served as the benchmark for efficiency, diminished in importance as game-theoretic and imperfect competition models incorporated features of reality. Finally, inspired by Douglass North's work (1981, 1990), the role of institutions became a major field of inquiry within economics.

Even though Austrian economists provided solutions to the problems of the 1970's, these discoveries have not led to a rise in Austrian publications in prestigious journals.[1] Austrian research continues to appear in second and third tier journals. Moreover, the criticisms of the mainstream model responsible for the 1974 revival did not spark a wave of new insights and criticisms to improve our understanding of the interaction of markets and the public sector.

In this paper, we argue that the approach to Austrian economics that emerged in the post-1974 era has run its course. The insights that emerged from those early years

[1] Of course, the work of Cowen and Fink (1984), White (1984), Selgin and White (1994), Kirzner (1997), and Caldwell (1997) stand out as exceptions to this claim.

have provided the foundation for further explorations in the causes and consequences of social interaction in a mixed economy, but the traditional topics of Austrian economics—an emphasis on sheer ignorance and radical uncertainty, the equilibrating tendency of entrepreneurs, and critiques of general equilibrium theory and market socialism—no longer offer fruitful avenues. These areas of research no longer suggest exciting new results; they have reached very low rates of return.

We conjecture as to the reasons why Austrian ideas have failed to enter the mainstream through Austrian economists. We argue that the Austrians have failed to have articles appear in top journals because (1) they do not address the topics that appear in these journals; and (2) they do not present their ideas in a format where a hypothesis can be examined against the data. In order to illustrate our hypotheses, we examine three areas of research in mainstream economics that have emerged as central to the profession, and we look at the Austrian response to each of these advances.

First, we examine the theory of economic development. No longer does the Solow growth model command the respect it once held; nor does the Cass-Koopmans model of economic growth. Instead, development economics focuses primarily on the fundamental determinants of economic performance: institutions, policy, geography, and culture.[2] Second, we examine the new trade theory and its emphasis on imperfect competition and increasing returns. Ricardian comparative advantage and Hecksher-Ohlin models no longer offer sufficient explanations for international trade. Finally, we look at the emerging theory of the state. In each case, the Austrians have not responded to these recent developments with additional insights of their own.

---

[2] We should note that the size of the Solow Residual served as an impetus for the new research.

Next, we address possible sources of the lack of cross-fertilization. We argue that the failure of Austrian economics results from its presentation and not its lack of formalism or libertarian ideology. Then, we suggest that Austrian economics could be improved by drawing on the theory of markets that has appeared in leading sociology journals. Finally, we offer some conclusions.

II. Analytical Dead Ends?

Since 1974, most research within Austrian economics has focused on one of four areas: the socialist calculation debate; Austrian business cycle theory and monetary economics; the history of economic thought; and methodology. While these avenues have yielded many important insights, the time has come to move forward. New avenues of inquiry can be improved with insights generated from these earlier areas of emphasis.

Table 1 presents the number of Austrian publications in the *Review of Austrian Economics* that primarily discuss one of the four core areas mentioned above. In all, more than half of all Austrian articles focused on one of these four topics. The only other topic with ten or more articles was Austrian economic history.[3] We avoided double-counting articles and we erred on the side of caution by not counting any articles that could be called something different than one of these four subject areas. For example, there were several pieces that we counted as contributions to Austrian theory, but much of the argument in these pieces was couched as an exercise in the history of economic

[3] It should be noted that the number of articles devoted to economic history increased in the last couple of issues. The rise in applied Austrian economics coincides with Peter Boettke's editorship of the *Review of Austrian Economics* in 1997 and his commitment to an "analytic narrative" research program. Prior editors were Walter Block, Hans-Herman Hoppe, Murray Rothbard, and Joseph Salerno.

thought (see, for example, Boettke and Lopez 2002). We did not count these contributions as history of thought, but, rather counted them as Austrian theory.

TABLE 1: TRADITIONAL ARTICLES IN THE *REVIEW OF AUSTRIAN ECONOMICS*, 1987 -2003

Topic	Number of Articles	Percentage of Articles
Calculation Debate	11	5.6%
Austrian Business Cycle Theory and Monetary Theory	23	11.7%
Methodology	25	12.8%
History of Thought	47	24.0%
Total	106	54.1%

Notes: The total number of articles published is 196. We did not include comments and book reviews in our total.

Table 1 suggests that a large fraction of Austrian work continues to occur in the traditional areas. Slightly over 54 percent of the articles published focus on one of the four areas. Essays in the history of economic thought constitute nearly a quarter of all published articles. Austrian work in the history of economic thought has largely focused on differences between Mises and Hayek. While reading and re-reading Mises and Hayek will no doubt generate new ideas that will elicit further discussion, the Austrian emphasis on the history of economic thought and consistency between Mises with Hayek has hindered the discovery of 'diamonds in the rough' within the large scope of their works.

Papers discussing Austrian methodology represent 12.8 percent of all articles in the *Review of Austrian Economics*. Many of these articles do not address recent methodological discussions. Entire issues of the RAE have discussed phenomenology and Alfred Schutz's work (volume 14, issues 2-3). In addition, a number of articles focus on *a priorism*, critical realism, and ideal types. While the authors of this paper find many of these contributions insightful, we also find the Austrian preoccupation with methodology somewhat puzzling. Methodological issues seldom consume the mainstream or other schools of thought.[4] The study of methodology does not solve problems; rather it raises the questions. James Buchanan (1964, 222) aptly summarized the role of methodology as "concentration on methodology won't solve any problems for you, but at least you should know what the problems are."

Nearly 12 percent of articles focused on Austrian business cycle theory and monetary economics. While the theoretical and empirical "free banking" contributions of Selgin and White marked a significant contribution to monetary economics, its does not follow directly from the Austrian tradition.[5] Rather, their work has been adopted and accepted by the Austrians. Additional work in monetary economics that flow from Mises and Hayek has not materialized in great substance.

The Austrian theory of the business cycle has also become a pseudo-secret handshake for Austrians. For some, an individual's Austrian credentials hinge on the acceptance of the theory. Yet, for all its rhetorical support, not much evidence exists to corroborate its claims. Critics point out that the Austrian business cycle theory's

[4] A notable exception has been the disputes between macroeconomists regarding calibration. See Prescott (1986) and Summers (1986) for an illuminating exchange.

[5] For example, Hayek did not support free banking. See White (1999).

assumption of an elastic investment demand curve does not hold up empirically (Lucas 1981). Even fellow travelers fairly sympathetic to Austrian business cycle theory have pointed out the contradictions in ABC theory (Cowen 1997, Wagner 1999). Garrison (1978) did graphically depict the ABC theory to better understand its relation to more mainstream approaches, but that occurred more than twenty years ago. Instead of responding to the modern critics or updating their theory, Austrians continue to promote the traditional theory of the business cycle. For example, the bibliography in Garrison (2002) does not contain reference to Kydland and Prescott's (1982) seminal contribution to business cycle theory (although there is a citation to Prescott's (1986) methodological debate with Lawrence Summers). More recent contributions, such as Caballero and Hammour's (1994) discussion of the cleansing effects of recessions, have not received recognition and discussion for their similarities to ABC theory.[6] Thus, we have approached a fork in the road for Austrian business cycle theory: either continue to do ABC theory as developed by Hayek and Mises or move forward by "saving the wheat and discarding the chaff (Wagner 1999)." A revised ABC would include recognition of the role of technological shocks, an explicit analysis of the labor market, and improved recognition of how various monetary institutions affect firm behavior.

Finally, work on the socialist calculation debate represents 5.6 percent of all articles in the *Review of Austrian Economics*. The calculation debate formed the core of Austrian economics (and rightly so) for most of the 20th century. It highlighted the fundamental importance of property rights and the implications of the division of knowledge that emerged as the cornerstones of Austrian thought (Lavoie 1985b). The consistent application of the calculation argument has even been effective in explaining

[6] We would like to thank Andy Young for drawing our attention to this literature.

why policymakers cannot rationally choose how to allocate scarce resources among competing ends. But aspects of the idea have been absorbed into the mainstream and the policy world. At the theoretical level, Stiglitz (1994) and Akerlof (1970) incorporated aspects of the "knowledge problem" into their models of asymmetric information. If Austrian ideas have increasingly emerged in the mainstream discussion, why have they received little recognition?

III. The Failure of Cross-Fertilization

The lack of interaction between Austrian economists and the mainstream presents a puzzle. Why, if both factions have explored similar problems, do they seldom discuss each other's work? We examine four possible reasons for the lack of interaction.

First, Austrian economists tend to present ideas in non-mathematical terms. They express ideas in the form of words rather than symbols. They offer plausible reasons for verbal methods. Many aspects of human action cannot be explained with the current mathematical tools (O'Driscoll and Rizzo 1985, 54-55). For example, the creative aspects of entrepreneurship are difficult to capture in a search theory model. Furthermore, the application of mathematics to even simple economic problems yields very complex outcomes. The mathematician Donald Saari (1995, 222) eloquently summarized the problem as the following:

> …even the simple models from introductory courses in economics can exhibit dynamical behavior far more complex than anything found in classical physics or biology.

Complicated dynamics emerge when economists simply attempt to formally describe an exchange economy. Similarly, dynamic models that attempt to track the process from a starting equilibrium to a new equilibrium have been difficult to produce formally (Fisher 1983, Yates 2000). Even though the Austrians have plausible reasons for rejecting mathematical approaches to economics, their rejection of mathematics increases the costs of dialogue with mainstream economists.

In addition to rejecting mathematical representations of human action, Austrians do not engage in traditional empirical research. That is, they do not use econometric results to support their claims.[7] They do not collect data and test hypotheses. Nor do they collect data and information to develop deep, descriptive narratives similar to historians. Instead, they usually invoke anecdotal evidence and casual empiricism to support many of their claims (see, for example, Boettke 2001, Appendix). In some cases, they collect data second-hand; that is, they refer to the works of others for support rather than examine the primary data themselves. As a result, their empirical approaches do not persuade.

Finally, Austrian economics has become very closely associated with libertarian ideology. The classical liberal inclinations of many Austrians have provided fodder for many critics (Hausman 1998). Even though the economics profession, on average, is more skeptical towards government intervention than the average member of the other social sciences, mainstream economists remain skeptical of an approach that explicitly adopts an unconventional normative approach regarding welfare analysis.

Although these factors may have contributed to the lack of cross-fertilization, they cannot possibly explain the entire story. First, the lack of mathematical sophistication has not precluded others from making significant contributions from the Second World

---

[7] The few case where Austrians do use econometric results include Boettke and Subrick (2002), Keeler (2001), and Montgomery (forthcoming).

War to the mid-1980's. Douglass North's (1981, 1990) ideas about the role of institutions in economic performance and Ronald Coase's (1960) ideas about externalities have permeated many articles in prestigious economic journals, and they do not express their ideas in mathematical terms. Mancur Olson (1993) presented his notions of roaming versus stationary bandits without an equation.[8] Oliver Williamson's (1975, 1985) contributions to transaction cost economics have exerted a significant impact without the use of high-tech math. Thus, lack of mathematical presentation did not prevent dialogue from occurring.[9]

Second, while Austrian economists do not adopt traditional empirical methods, many successful mainstream economists do economic history without econometrics. For example, North and Weingast's (1989) well-known paper on the economic effects of the Glorious Revolution does not contain an estimated equation. Demsetz (1967) applied a simple historical illustration to his theory of the evolution of property rights, as have Anderson and Hill (2004).[10] Greif (1989, 1993) provided a persuasive account of the long-run effects of institutions without quantifying the effects. Even Milton Friedman, perhaps the greatest proponent of empiricism of the 20th century, did economic history without econometrics (Friedman and Schwartz 1963). Failure to engage in econometric research does not explain the Austrian failure.

Finally, ideology does not offer an adequate explanation. Austrian economics has become identified with libertarian ideology. They have stressed the magic of markets

8 Olson, along with Martin McGuire, did formalize the argument, see McGuire and Olson (1996).

9 We do not mean to suggest that, in 2004, a non-econometric or formal theory could appear in the top economic journals. Rather our point is that prior to 1980's, an article could appear in the top journals with formalism.

10 Anderson and Hill (1975, 1983, 1991) published earlier versions of their theory in the *Southern Economic Journal* and the *Journal of Law and Economics*.

and government failure. But how does one explain the dramatic shift in policy during the 1980's and 1990's in favor of markets if there were a insurmountable bias against markets? The 'Washington Consensus' with its emphasis on market liberalization and deregulation dominated policy discussions in the 1990's. Numerous journal articles (which have appeared in top journals) have appeared that provide evidence that a government that secures contract and property rights best maximizes individual outcomes (Djankov et al 2003, Acemoglu, Johnson, and Robinson 2001). Recent books have also illustrated the importance of limited government (McMillan 2002). Articles and books that support libertarianism have passed the intellectual market test.

Furthermore, Milton Friedman, Ronald Coase, James Buchanan, and Vernon Smith hold policy positions similar to the Austrians; yet, they have not been marginalized (their Nobel medals attest to that). Even Hayek's ideas have been explored in major journals. Smith's articles continue to appear in the *American Economic Review*. Libertarianism or classical liberal policy positions has not precluded professional success in the past.

So what does explain the failure of Austrian economists to engage the mainstream? We argue that the failure lies in the presentation of their ideas. Austrian economists tell stories of events. Their stories persuade some, but they lack one important feature: they do not present a hypothesis that, in principle, could be falsified (or even formulated). Without a clearly stated hypothesis, Austrians leave readers wondering how the theory relates to the evidence. What assumptions underlie the theory? What market structure has the theory posited? How quickly do prices adjust to changing market conditions? What are the institutional foundations of the theory?

Clearer statements regarding these questions would reduce the costs of engaging in discussion and improve the presentation of Austrian ideas.

The question of hypothesis generation will surely raise the ire of some Austrians. It may suggest that Austrians abandon their methodological approach and succumb to pressures from more conventional economists. We do not wish to convey any such meaning. Rather our appeal is to loosen methodological strictures (i.e., Austrianism = praxeology) and encourage the development of tighter arguments that explicitly answer the questions (and many others) that were raised previously. Any approach that satisfies this criterion would improve Austrian economics.

One may argue quite reasonably that falsification and hypothesis formation does not adequately capture scientific endeavors. We agree and accept this criticism. In fact, one author largely subscribes to the view of Paul Feyerabend's *Against Method* (1975)! But we do not wish to engage in methodological disputes. Rather, we want to emphasize that formulating one's ideas into hypotheses forces researchers to tighten up their argument and make clear statements of how their theory differs from others. They cannot simply assert stories that persuade. They must tell stories that differentiate themselves from other equally plausible theories.

Furthermore, Austrians have avoided empirical research using econometric method, even though econometrics has greatly improved since the day when Mises (1963, 351) stated that:

> It is true the empiricists reject [a priori] theory; they pretend that they aim to learn only from historical experience. However, they contradict their own principles as soon as they pass beyond the unadulterated recording of individual single prices and begin to construct series and to compute averages. A datum of experience and a statistical fact is only a price paid at a definite time and a definite place for a definite quantity of a certain

> commodity. The arrangement of various price data in groups and the computation of averages are guided by theoretical deliberations which are logically and temporally antecedent. The extent to which certain attending features and circumstantial contingencies of the price data concerned are taken or not taken into consideration depends on theoretical reasoning of the same kind. Nobody is so bold as to maintain that a rise of *a* per cent in the supply of any commodity must always--in every country and at any time--result in a fall of *b* per cent in its price. But as no quantitative economist ever ventured to define precisely on the ground of statistical experience the special conditions producing a definite deviation from the ratio *a* : *b*, the futility of his endeavors is manifest.

From the present perspective, Mises's claims appear somewhat naïve. Researchers do not search for exact magnitudes. They hope for correct signs of coefficients because, in many cases, theory does not suggest magnitudes of coefficients. Furthermore, they recognize the problem of measurement error, parameter heterogeneity, reverse causation, and omitted variables in empirical research. Ordinary least squares offers a first cut at understanding relationships. Numerous other methods such as two-stage least squares and Monte Carlo methods have become commonplace in empirical research.

In order to illustrate our argument, we consider the recent research regarding the effects of the common law on various economic outcomes. Hayek (1960) put forth the basic idea in his discussion of the emergence of the rule of law in Great Britain rather than France. He blended legal history with his emphasis on the division of knowledge to argue that the common law's adaptability improved economic performance. Numerous Austrians have no doubt recognized these insights. But no Austrian turned Hayek's conjectures into a testable hypothesis. No Austrian collected data on the legal origins of various legal systems across the world. Andrei Shleifer and his co-authors did (La Porta Lopez-de-Silanes, Shleifer, and Vishny 1998, 1999; Glaeser and Shleifer 2002). As a result, they have successfully published their ideas in major journals (Journal of Political

Economy, Quarterly Journal of Economics) and generated an active research project (Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer 2003). Austrian ideas penetrated the mainstream through a non-Austrian medium (namely, Shleifer).

IV. Failed Responses

The history of the Austrian school since the 1974 began with a surge of enthusiasm and hope. The ideas of Kirzner, Lachmann, and Rothbard captivated a small group of young economists. They revived interest in Austrian ideas. The awarding of the Nobel Prize to Hayek further increased the interest in Austrian ideas. By the mid-1980's, this research program manifested itself in two important books—Don Lavioe's *Rivalry and Central Planning* and Gerald O'Driscoll and Mario Rizzo's *The Economics of Time and Ignorance*. The former book refines the theory of the market process and the latter book provided an updated approach that addressed the rational expectations hypothesis and other recent developments in economics. A refined Austrian approach had emerged that offered an alternative to the mainstream.

Given the formidable intellectual apparatus assembled, one would expect that numerous studies would have emerged. Yet, they did not. The refined framework was not rigorously applied to the new areas of interest in the major economics. In particular, we examine the Austrian response to (1) the new growth theory; (2) the new trade theory; and (3) the theory of the state.

Table 2 presents a survey of publications in the *Review of Austrian Economics* that have focused on these three areas of research. After surveying publications from 1987 through 2003, we found that only 15 articles discussed growth/development, trade, or the state. As a fraction of total articles, only 7.7 percent of Austrian articles focused on one of these three research areas. Finally, it should again be noted that we adopted a generous approach in classifying Austrian papers as focused on the "new" trade, development, or state theory.

When we compare Table 2 to Table 3, we can see that the *Review of Austrian Economics* differs significantly from the *American Economic Review's* "Papers and Proceedings" in the composition of articles. Approximately 26.6 percent of all sessions in the AER's "Papers and Proceedings" were concerned with "new" trade, development, or state theory. We next examine the content of the papers in the AER's "Papers and Proceedings" and compare this to the contributions of the RAE.

The *Review of Austrian Economics* publishes cutting edge research being done by Austrian economists. Along with the *Quarterly Journal of Austrian Economics*, the RAE is one of the two main outlets for explicitly Austrian work. We chose the RAE as our benchmark based on the likelihood that the RAE would more likely engage recent research based on Boettke's (2002) calculations of average citation date. Boettke (2002, 350) reports that the average year of publication for an article cited in an article published in the RAE was 1974.2 whereas the QJAE 1951.4. An analysis of the QJAE yields a similar outcome.

After making the decision to have articles in the RAE represent new research in Austrian economics, we next turned to the annual "Papers and Proceedings" in the *American Economic Review*. The "Papers and Proceedings" in the AER represent recent work being done by mainstream economists. These sessions are carefully selected by some of the leading economists in the mainstream and the aim of the sessions is to keep the rest of the profession alert to the most important areas in mainstream economics.

After selecting the "Papers and Proceedings" of the AER to serve as the representative of the mainstream, we counted each "Papers and Proceedings" session from 1987-2003. In all, there were 403 total sessions. Of these 403 sessions, 107 (or 26.6 percent) focused on growth/development theory, trade theory, or a theory of the state. Moreover, there is reason to believe this number is understated. We omitted sessions that discussed local development. We also excluded a few public finance sessions that posited a theory of the state.

TABLE 2: ARTICLES IN EMERGING DOMAINS OF ECONOMICS IN THE *REVIEW OF AUSTRIAN ECONOMICS*, 1987-2003

Topic	Number of Articles	Percentage of Articles
Economic Development and Growth	7	3.6%
International Trade	2	1.0%
Theory of the State	6	3.1%
Total	15	7.7%

The total number of articles published is 196. We did not include comments and book reviews in our total.

TABLE 3: SESSIONS IN EMERGING DOMAINS OF ECONOMICS IN THE *AMERICAN ECONOMIC REVIEW'S* "PAPERS AND PROCEEDINGS," 1987 - 2003

Topic	Number of Articles	Percentage of Articles
Economic Development and Growth	50	12.4%
International Trade		

	36	8.9%
Theory of the State	21	5.2%
Total	107	26.6%

The total number of sessions was 403. We did not include the Ely lectures in our total.

A. Economic Growth and Development

The most significant change in economics since 1985 has been the revival of development economics. The renaissance has occurred on both the theoretical and empirical fronts. Romer (1986) and Lucas (1988) provided the impetus for this research on the theoretical side. Their models greatly expanded the domain of the determinants of economic development beyond physical capital accumulation to include human capital and the role of information. Since then, numerous additional theoretical contributions have occurred. Grossman and Helpman (1991) analyzed the effects of international trade on economic growth. Sachs (2001) highlighted the impact of geography on long-run economic performance. North (1990) inspired numerous studies of the effects of institutions on economic performance. In addition, book length summaries of the literature have appeared (Easterly 2001, Helpman 2004).

The new growth theory stressed the role of learning-by-doing and the role of knowledge, which are traditional Austrian topics. Yet, they do not make explicit references to Hayek or any other Austrian work. Development economics has moved in a distinctly Austrian direction with its emphasis on the role of knowledge and beliefs, but how have Austrian economists responded? Baetjer (2000) offered some criticisms of the first generation new growth theory (i.e., Romer and Lucas) that focused on the social dimensions of knowledge that do not appear in new growth models. According to Baetjer (2000: 147), new growth theory offers an inadequate explanation because it treats capital as "aggregable [sic] and implicitly homogeneous." Other than his critique of the new growth models, and Holcombe (1999), little commentary exists. Austrians have a long tradition examining the role of information and knowledge in an evolving economy yet few have dared to wade into the new growth waters. Austrians views markets through a different lens than the growth models. O'Driscoll and Rizzo (1985, chapter 4) offered a penetrating critique of dynamic optimization models that could be extended to new growth the models. Their ideas could surely improve growth models by introducing the market process into understanding economic development.

On the empirical front, the literature has focused attention on the deep determinants of economic performance—economic integration, geography, and institutions (Rodrik, Subramanian, and Trebbi 2004). The inclusion of a proxy for secure property rights has become commonplace in the empirical literature on economic growth and development. Knack and Keefer (1995) pioneered the use of measures of property rights protection in the empirical literature. Hall and Jones (1999) forcefully argued that the extent of contact with the West exerted a positive impact on the level economic development. Acemoglu, Johnson, and Robinson (2001, 2002) have presented strong evidence that colonization strategy exerted a significant impact on the development of institutions that protect property rights. Engerman and Sokoloff (2000) illustrated with historical examples the role of institutional development on the comparative economic performance of the Americas.[11] The 'analytic narrative' approach pioneered by Bates et

[11] We should note that Engerman and Sokoloff's research has exerted a large impact on the recent literature on economic development without estimating an equation.

al (1998) offers one such approach. By combining history and game-theoretic models, new insights emerge into the development of markets.[12]

How have the Austrians responded? Once again, little discussion has appeared in print. The empirical evidence has taken a turn towards conclusions consist with the arguments of the Austrians. Secure contract and property rights have become the cornerstone of any explanation of economic development. No doubt problems exist measuring of property rights and the econometric strategies require further development, but that is an insufficient reason to avoid talking about this literature.

B. New Trade Theory

Understanding the causes and consequences of international trade has increased as the world becomes more integrated. Ricardian comparative advantage offers one source of international trade. The Hecksher–Ohlin model argued that relative resource abundance determined trade between countries, but an important factor did not appear in the international trade models: the gains from specialization. Adam Smith's celebrated theorem—the division of labor is limited by the extent of the market—represented a significant missing explanation of trade.[13]

The new trade theory challenges the merits of classical trade theory with its inclusion of increasing returns and monopolistic competition. By including additional factors, economists are now able to better explain patterns of international trade.

---

[12] See Foss (2000) for reasons why Austrians should incorporate aspects of game theory into their theoretical toolbox.

[13] See Buchanan and Yoon (2002) for a fascinating discussion of the differing implications of the various trade models.

Hummels and Levinsohn (1995), Antweiler and Trefler (2002), and Evenett and Keller (2003) each found that increasing returns to scale explain significant aspects of international trade. The empirical success suggests that Austrians must address new insights into the nature of international trade. Beginning with the dynamic, market process model rather than an imperfectly competitive market, new insights will emerge that explain the observed pattern of international trade. The framework exists, it has yet to be applied.

Even if the Austrians had little to add to the theoretical discussions, they surely could have made contributions to the debate on strategic trade policy. Some of the new trade theorists argued that a positive role for government existed based on the new models. For example, under specific conditions, tariffs could raise welfare. Krugman (1987) rhetorically asked "Is Free Trade Passe?" in an influential exposition of the policy implications of the new trade theory. He answered that the case for free trade, though generally correct, suffered from some significant shortcomings in the presence of increasing returns and monopolistic competition. Only political considerations restored the case for free trade. He did not address the traditional concerns of information aggregation that would have broadened the understanding of strategic trade policy.

Jagdish Bhagwati (1989) offered the most systematic response to the claims of the new trade theorists. Surprisingly, the source of Bhagwati's argument was none other than an Austrian economist, Gottfried Haberler. Haberler (1950) anticipated some aspects of the new trade theory and provided reasons to believe that it did not offer a significant challenge to classical trade theory. Furthermore, the Austrian emphasis on imperfect information and the evolution of knowledge provided ample reason to question the implications of the new trade theory. Thus, Austrians had ample basis to immediately recognize the shortcomings of the new trade theory in their arsenal, yet they did not use them.

C. Theory of the State

No institution deserves more attention in political economy than the state. It pervades nearly all transactions that take place. For better or worse, we live and interact in the shadow of the state. Douglass North (1981: 17) made a compelling case for a theory of the state when he wrote:

> A theory of the state is essential because it is the state that specifies the property rights structure. Ultimately it is the state that is responsible for the efficiency of the property rights structure, which causes growth or stagnation or economic decline. A theory of the state, therefore, must provide an explanation both for the inherent tendencies of political-economic units to produce inefficient property rights and for the instability of the state in history. This fundamental building block is, unfortunately, missing in economic history in accounting for secular change.

Since the appearance of North's book, many other political economists have put a great deal of time and energy into developing a theory of the state that succeeds in explaining both political-economic inefficiency and instability of states. They have also attempted to understand when the state serves the interests of its citizenry. Kashik Basu (2000) and Herschel Grossman (2000) have responded to North's challenge. They provide models that endogenously explain the state's emergence and its evolution over time based on the interaction of individuals.

If Austrians do have a model of the state, it likely derives from the Buchanan and Brennan (1980) model that posited a Leviathan-type government behavior that maximized its own revenue.[14] This probably reflects the proximity of the Public Choice Center and the Austrian–inclined faculty at George Mason University. But other models have emerged that challenge or extend the Brennan-Buchanan model. North (1984) challenged the Leviathan model and argued that government provides the basis for economic prosperity through the protection of property and contract rights. They collect taxes and provide public goods. Olson (1993) modified the Brennan-Buchanan model to provide a provocative analysis of government behavior by incorporating 'encompassing interests.' In some cases, Leviathan can improve social welfare. Grossman and Noh (1994) modeled government behavior as being guided by the probability of staying in power. Each theory suffers from the same problem: they begin with a government in place and analyze the degree of predation that will occur.

As these new theories of the state developed, Austrian economists continued to criticize some kind of social planner model of the state (e.g., Boettke 2001) or have implicitly assumed the Brennan-Buchanan Leviathan model of the state (see, for example, Benson 1999; Holcombe 1994; Boettke 1993: 129-30). Given the Austrian emphasis on spontaneous orders, we find it puzzling that they quickly adopt an exogenous model of the state whenever engaging in economic analysis. For Austrians, the state does not emerge, it simply exists.

V. What Market Process?

The market process remains central to Austrian economics. Mises's oft quoted remark about "the market is a process" has achieved canonical status. Yet, how the

[14] The Brennan-Buchanan model has strong similarities with Rothbard's (1973, 1982) coercive state that violates natural rights. We interpret the Brennan-Buchanan as a special case of the Rothbard model.

market process operates remains relatively little understood. Alert entrepreneurs recognize hitherto unrecognized profit opportunities. In much of Kirzner's work, and certainly Mises's, entrepreneurship takes place in an institutional vacuum. Even though Mises and Kirzner implicitly assumed an institutional framework of secure property rights and the rule of law, there is little discussion of how the entrepreneurial process works itself out in a world of undefined property rights arrangements and an obscure legal code.

Surprisingly economic sociology offers better insights into the market process than most economic research. For too long, Austrians have followed Mises's negative comments about sociologists and straw-man criticism of sociologists as historicists. According to Mises (1962: 101),

> The self-styled behavioral sciences [including sociology] want to deal scientifically with human behavior. They reject as 'unscientific' or 'rationalistic' the methods of praxeology and economics…they choose as the subject matter of their investigation conditions of the recent past and aspects of human conduct that most historians of former times used to neglect. More remarkable may be the fact that their treatises often suggest a definite policy, as allegedly 'taught' by history, an attitude which most of the sound historians have abandoned long since.

Austrians implicitly recall Mises's words when examining the literature in sociology. This is unfortunate, for there is plenty of good work being done within economic sociology. For example, Herbert Simon (1991) vividly illustrated the importance of non-market aspects for understanding the structure of the economic system. Suppose that an alien visited Earth. Transactions within firms appear in green and market transactions in red. Green would dominate the view of the alien. Once we move from exchange markets to exchange within firms, a whole series of new factors- factors that Austrians have avoided- emerge that involve the market process. We offer some examples of the sociology of markets literature to illustrate some potentially useful ideas.

Harrison White (1981) stressed the role of stable production markets rather than exchange markets. Building on Spence's (1974) signaling model, White's model emphasized the signaling aspect between firms. Markets create environments of replication for existing firms. Rather than eliminate competition, firms seek stability. The focus shifts from the dynamic aspects of 'creative destruction' to explaining the behavior of firms in a stable environment.

Mark Granovetter (1974) has emphasized the importance of social networks in explaining observable labor market outcomes. His research questioned the ability of traditional labor market theory to explain real world phenomena. He found that people did not find new jobs via a search process but rather by knowing people who knew of job openings. Weak ties between individuals supplement the economic search mechanism.

Joel Podolny (1992, 1994, 2001) has developed a model of markets that addresses a traditional Austrian topic- uncertainty. He argued that uncertainty comes in many forms. Business and individuals overcome uncertainty by dealing with previous trading partners and relying on status to signal quality. Status derives from the trading partners of the firm or individual, not its product. A firm has high status based on whom it trades.

Neil Fligtsein's (1996) model of "markets as politics" offers several interesting hypotheses regarding the emergence, persistence, and demise of markets. All of these topics should be of interest to Austrian economists. The evolution of markets forms the core of Austrian economics, yet discussion focus on some sort of evolutionary mechanism. He emphasizes the attempts of firms to eliminate competition through non-market mechanisms.

The incorporation of the insights from the sociology of markets improves and complements the understanding of the market process. Alert entrepreneurs fill niches and coordinate plans across consumers and producers. This occurs in both exchange and production markets. The importance of the institutional arrangements that underlies markets and the role of the state in stabilizing markets cannot be overlooked. Uncertainty comes in various forms that need exploration. An Austrian theory with sociological insights will only improve an understanding of the market process.

VI. Conclusions

Those responsible for the Austrian revival in 1974 played a crucial role in the Austrian movement. Without their efforts, Austrian economics could have easily disappeared as a school of thought. 30 years since the revival, though, Austrian economics has arrived at a critical juncture. The time has come to circle the wagons and re-evaluate what Austrian economists can add and what research programs should be abandoned. New avenues of research must be explored and developed. Improved analytical skills must be developed. And, we should cut our losses on some of the analytical dead-ends discussed earlier.

Lord Keynes and his disciplines are no longer around to kick. The Federal Reserve has learned from its mistakes and does not undertake inflationary policies like it did in the pre-Volcker era. Policymakers at the IMF and World Bank understand the importance of property rights and the division of knowledge.

The Austrian emphasis on entrepreneurial alertness in the market process forms the core of the economic writings. Surprisingly, they have not extended this insight to the choices of research topics. Instead of being alert to new developments and insights within the mainstream of economic thought, they have chosen to remain discussing their traditional topics.

REFERENCES

Acemoglu, D., Johnson, S., and J. Robinson. (2001). "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91: 1369-1401.

-------. (2002). "Reversal of Fortune: Geography and Institutions in the Making of the World Income Distribution." *Quarterly Journal of Economics* 117: 1231-1294.

Akerlof, G. (1970). "The Market for Lemons: Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, 84(3): 488-500.

Anderson, T. and P.J. Hill. (1975) "The Evolution of Property Rights: A Study of the American West." *Journal of Law and Economics* 18 (1): 163-179.

-------. (1983) "Privatizing the Commons: An Improvement?" *Southern Economic Journal* 50 (2): 438-50.

-------. (1991) "The Race for Property Rights." *Journal of Law and Economics* 33: 177-97.

-------. (2004). *The Not so Wild, Wild West: Property Rights on the Frontier*. Stanford, CA: Stanford Economics and Finance.

Antweiler, W.and D. Trefler. (2002) "Increasing Returns and All That: A View From Trade," *American Economic Review*, 92(1): 93-119.

Baetjer, H. (2000). "Capital as Embodied Knowledge: Some Implications for the Theory of Economic Growth." *Review of Austrian Economics* 13: 147-174.

Basu, K. (2000). *Prelude to Political Economy*. Oxford: Oxford University Press

Bates, R., A. Greif, M. Levi, J-L. Rosenthal, B. Weingast. (1998) *Analytic Narratives*. Princeton: Princeton University Press.

Benson, B. (1999). "An Economic Theory of the Evolution of Governance and the Emergence of the State." *Review of Austrian Economics* 12: 131-160.

Bhagwati, J. (1989). "Is Free Trade Passe After All?" *Weltwirtschaftliches Archiv* 125(1): 17-44.

Boettke, P. (1993). *Why Perestroika Failed: The Politics and Economics of Socialist Transformation*. London: Routledge.

-------. (1994). *The Collapse of Development Planning*. New York: New York University Press.

-------. (2001). *Calculation and Coordination*. New York: Routledge.

-------. (2002). "The Use and Abuse of the History of Economic Thought Within the Austrian School of Economics," Annual Supplement to History of Political Economy 34: 337-360.

Boettke, P. and E. Lopez. (2002). "Austrian Economics and Public Choice." *Review of Austrian Economics* 15 (2/3): 111-119.

Boettke, P., and J. R. Subrick (2002). "Rule of Law, Development, and Human Capabilities," *Supreme Court Economic Review*, 10: 109-126.

Brennan, G., and J. Buchanan. (2003 [1980]). *The Power to Tax*. Indianapolis: Liberty Fund.

Buchanan, J. (1964). "What Should Economists Do?" *Southern Economic Journal*, 30: 213-222.

Buchanan, J. and Y. Yoon. (2002). "Globalization as Framed by the Two Logics of Trade." *Independent Review* 6 (3): 399-405.

Caballero, R, and Hammour, M. (1994). "The Cleansing Effects of Recessions," *American Economic Review* 84(4): 1350-1368.

Caldwell, B. (1997). "Hayek and Socialism." *Journal of Economic Literature* 35 (4): 1856-1890.

Carilli, A and G. Dempster. (2001). "Expectations in Austrian Business Cycle Theory: An Application of the Prisoner's Dilemma." *Review of Austrian Economics* 14 (4): 319-330.

Coase, R. (1960) "The Problem of Social Cost," *Journal of Law and Economics*, 3: 1-44.

Cowen, T. (1997). *Risks and Business Cycles: New and Old Austrian Approaches*. New York: Routledge.

Cowen, T. and R. Fink. (1975) "Inconsistent Equilibrium Constructs: The Evenly Rotating Economy in Mises and Rothbard," *American Economic Review* 75(4): 866-869.

Demsetz, H. (1967) "Toward a Theory of Property Rights." *American EconomicReview* 57 (2): 347-59.

Djankov, S., Glaeser, E., et al. (2003). "The New Comparative Economics." *Journal of Comparative Economics* 31 (4): 595-619.

Easterly, W. (2001). *The Elusive Quest for Growth*. Cambridge, MA: MIT Press.

Engerman, S., and K. Sokolof. (2000). "Institutions, Factor Endowments, and the Paths of Development in the New World," *Journal of Economic Perspectives* 14(3): 217-232.

Evenett, S. J. and W. Keller. (2002). "On Theories Explaining the Success of the Gravity Equation," *Journal of Political Economy* 110(2): 281-316.

Fisher, F. (1983). *Disequilibrium Foundations of Equilibrium Analysis*. New York: Cambridge University Press.

Feyerabend, P. (1975). *Against Method*. London: Verso.

Friedman, M., and A. Schwartz. (1963). *A Monetary History of the United States*. Princeton: Princeton University Press.

Foss, N. (2000). "Austrian Economics and Game Theory: A Stocktaking and an Evaluation," *Review of Austrian Economics*, 13:41-58.

Garrison, R. (2001). *Time and Money*. New York: Routledge.

Glaeser, E., and A. Shleifer. (2002). "Legal Origins," Quarterly Journal of Economics, 117(4): 1193-1229.

Granovetter, M. (1974). *Getting a Job: A Study in Contracts and Careers*. Cambridge, MA.: Harvard University Press.

Greif, A. (1989). "Reputations and Coalitions in Medieval Trade: Evidence on the Maghribi Traders." *Journal of Economic History* 49 (4): 857-882.

-------. (1993). "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition." *American Economic Review* 83 (3): 525-548.

Grossman, H. (2000). "The State: Agent or Proprietor?" *Economics of Governance* 1(1): 3-11.

Grossman, G., and E. Helpman. (1991). Innovation and Growth in the Global Economy. Cambridge, Mass.: MIT Press.

Grossman, H., and S. J. Noh. (1994). "Proprietary Public Finance and Economic Welfare." *Journal of Public Economics* 53 (2): 187-204.

Haberler, G. (1950). "Some Problems in the Pure Theory of International Trade." *Economic Journal*, 60: 223-240.

Hall, R., and C. Jones. (1999). “Why do Some Countries Produce So Much More Output per Worker than Others?” *Quarterly Journal of Economics* 114: 83-116.

Hausman, D. (1998). “The Faults of Formalism and the Magic of Markets.” *Critical Review* 12 (1-2): 127-138.

Hayek, F.A. (1960). *The Constitution of Liberty*. Chicago: University of Chicago Press.

Helpman, E. (2004). *The Mystery of Economic Growth*. Cambridge, MA: Belnap Press.

Holcombe, R. (1994). *The Economic Foundations of Government*. New York: New York University Press.

-------. (1998). “Entrepreneurship and Economic Growth,” *Quarterly Journal of Economics*, 1(2): 45-62.

Hummels, D., and J. Levinsohn. (1995) “Monopolistic Competition and International Trade: Reconsidering the Evidence,” *Quarterly Journal of Economics*, 110(3): 799-836.

Keeler, J. (2001). “Empirical Evidence on the Austrian Business Cycle Theory.” *Review of Austrian Economics*. 14 (4): 331-351.

Kirzner, I. (1992). *The Meaning of Market Process: Essays in the Development of Modern Austrian Economics*. New York: Routledge.

-------. (1997). “Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach.” *Journal of Economic Literature* 35 (1): 60-85.

Knack, S., and P. Keefer. (1995). “Institutions and Economic Performance: Cross-Country Test Using Alternative Institutional Mechanisms,” *Economics and Politics* 7 (3): 207-228.

Krueger, A. (1990). “Government Failures in Development,” *Journal of Economic Perspectives* 4(3): 9-23.

Krugman, P. (1987). “Is Free Trade Passe?” *Journal of Economic Perspectives* 1 (2): 131-144.

Kydland, F. and Prescott. E. (1982). “Time to Build and Aggregate Fluctuations,” *Econometrica* 50(6): 1345-1370.

La Porta, R., Lopez-de-Silanes, F., et al. (1998). “Law and Finance.” *Journal of Political Economy* 106 (6): 1113-1155.

-------. (1999). “The Quality of Government.” *Journal of Law, Economics, and Organization* 15 (1): 222-279.

Lavoie, D. (1985a). *National Economic Planning: What is Left?* Cambridge, MA: Ballinger.

-------. (1985b). *Rivalry and Central Planning*. Cambridge: Cambridge University Press.

Lucas, R. (1981). "Understanding Business Cycles", in *Studies in Business-Cycle Theory*, Cambridge: The MIT Press)

-------. (1988). “On the Mechanics of Economic Development,” *Journal of Monetary Economics* 22: 3-42.

Levy, D. (1990). “The Bias in Centrally Planned Economies.” *Public Choice* 67: 213-226.

McGuire, M. and M. Olson. (1997). “The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force,” *Journal of Economic Literature*, 34: 72-96.

McMillan, J. (2002). Re-*Inventing the Bazaar: A Natural History of Markets*. New York: Norton.

Mises, L. (1962). *The Ultimate Foundation of Economic Science*. Mission, KS: Sheed Andrews and McMeel.

Mises. L. (1967). *Human Action*.

Montgomery, M. (Forthcoming). “Austrian Persistence? Time to Build Survey Evidence on the Time Structure of Investment Spending,” *Review of Austrian Economics*.

North, D. (1981). *Structure and Change in Economic History*. New York: Norton.

-------. (1984). “Government and the Cost of Exchange in History.” *Journal of Economic History* 44 (2): 255-264.

-------. (1990). *Institutions, Institutional Change, and Economic Performance*. New York: Cambridge University Press.

North, D., and B. Weingast. (1989). “Constitutions and Commitment: The Evolution of Institutional Governing Public Choice in Seventeenth-Century England.” *Journal of Economic History* 49 (4): 803-832.

O’Driscoll, G., and M. Rizzo. (1985). *The Economics of Time and Ignorance*. London and New York: Routledge.

Olson, M. (1993). “Democracy, Dictatorship, and Development.” *American Political Science Review* 87 (3): 567-576.

Podolny, J. (1993). “A Status-Based Model of Market Competition,” *American Journal of Sociology* 98(4): 829-872.

-------. (1994). “Market Uncertainty and the Social Character of Economic Exchange.” *Administrative Science Quarterly* 39(3): 458-493.

-------. (2001). “Networks as the Pipes and Prisms of the Market,” *American Journal of Sociology* 107 (1): 33-60.

Prescott. E. (1986). “Theory Ahead of Business Cycle Measurement,” *Federal Reserve Bank of Minneapolis Quarterly Review* 10(4): 9-22.

Rodrik, D., Subramanian, A, and F. Trebbi. (2004). “Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development.” *Journal of Economic Growth* 9(2): 131-165.

Romer, P. (1986). “Increasing Returns and Long-Run Growth,” *Journal of Political Economy*, 94: 1002-1037.

Rothbard, M. (1973). *For a New Liberty*. San Francisco, CA: Fox & Wilkes.

-------. (1982). *The Ethics of Liberty*. Atlantic Highlands, NJ: Humanities Press.

-------. (1997 [1976]). “Praxeology: The Methodology of Austrian Economics.” In M. Rothbard (Ed.) *The Logic of Action One*. Cheltenham, UK: Edward Elgar: 58-77.

Rizzo, M. (1980). “Law Amid Flux: The Economics of Negligence and Strict Liability.” *Journal of Legal Studies* 9 (2): 291-318.

Saari, D. (1995). “The Mathematical Complexity of Simple Economics.” *Notices of the American Mathematical Society*, 42(2): 222-230.

Sachs, J. (2001). “Tropical Underdevelopment.” NBER Working Paper #8119, February 2001.

Selgin, G. (2003). “Steam, Hot Air, and Small Change: Matthew Boulton and the Reform of Britain’s Coinage.” *Economic History Review* 56 (3): 478-509.

Selgin, G., and L. White. (1994). “How Would the Invisible Hand Handle Money?” *Journal of Economic Literature* 32 (4): 1718-1749.

Shleifer, A., and R. Vishny. (1998). *The Grabbing Hand*. Cambridge, MA: Harvard University Press.

Simon, H. (1991). "Markets and Organizations." *Journal of Economic Perspectives* 5 (2): 25-44.

Spence, A. Michael. (1974) "Job Market Signaling," Quarterly Journal of Economics, 87(3): 355-374.

Stiglitz, J. (1994). *Whither Socialism?* Cambridge, MA: MIT Press.

-------. (2002). "Information and Change in the Paradigm in Economics." *American Economic Review* 92 (3): 460-501.

Summers, L. (1986). "Some Skeptical Observations on Real Business Cycle Theory," *Federal Reserve Bank of Minneapolis Quarterly Review* 10(4): 23-27.

Thomsen, E. (1992). *Prices and Knowledge: A Market Process Perspective*. New York: Routledge.

Wagner, R. (1999). "Austrian Cycle Theory: Saving the Wheat while Discarding the Chaff." *Review of Austrian Economics* 12: 65-80.

White, H. (1981). "Where do Markets Come From?" *American Journal of Sociology* 87 (3): 517-547.

White, L. (1984). *Free Banking in Britain: Theory, Experience, and Debate, 1800-1845*. Cambridge: Cambridge University Press.

-------. (1986). "Competitive Payment Systems and the Unit of Account," *American Economic Review* 74(4): 699-712.

-------. (1999). "Why Hayek Didn't Favor Laissez-Faire in Banking?" *History of Political Economy* 31: 753-769.

World Bank. (1996). *World Development Report: From Plan to Market*. Oxford: Oxford University Press.

Yates, A (2000) "The Knowledge Problem, Entrepreneurial Discovery, and Austrian Market Process." *Journal of Economic Theory* 91: 59-85.