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Advanced Placement Economics: The Good, the Bad, and the Ugly

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LINK TO ABSTRACT

Every year thousands of high school students prepare for the Advanced Placement (AP®) exams in microeconomics and macroeconomics. Several studies have shown how well AP students perform in college and similar courses. Other studies have focused on the effectiveness of AP courses and the construction of the exams. Few studies have analyzed their content. This paper will address the following questions. Do the AP microeconomics and macroeconomics materials put too much emphasis on diagrams and mathematics? Do they give short shrift to "economic intuition" or "the economic way of thinking"? Are there biases toward particular theories of economics? Are the exams representative of the current scholarship in the field?

What Is an Advanced Placement Economics Course?

AP microeconomics and macroeconomics are two of the 33 courses and exams offered by the College Board. Founded in 1900, the College Board is composed of 5,400 schools, colleges, universities, and other organizations (College Board 2008). According to the College Board (2010a), 1,845,006 students who attended 17,861 secondary schools took 3,213,225 AP exams in 2010.

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The exams, which consist of multiple-choice and free-response questions, are developed and administered by the Educational Testing Service (ETS®). Materials developed by ETS must, however, be approved by the College Board. The final responsibility for decisions about course outlines and AP exams is invested in the 26-member board of trustees. Members are elected to four-year terms by the membership and are mainly college administrators, high school administrators, high school guidance counselors, and college admissions officers.

Microeconomics and macroeconomics are separate courses and exams. The courses are supposed to be representative of introductory-level college courses in micro and macro. In developing the AP course outlines, the Economics Development Committee of the College Board surveys economics departments throughout the country. Each AP exam presumes one semester of college-level economics and is graded on a 1-5 scale with 5 the top score. Although individual colleges and universities decide the score required to grant undergraduate credit, the College Board generally considers a 3, 4, or 5 to be a "passing" grade. Nevertheless, some colleges and universities grant credit only for AP scores of 4 or 5. Others may permit AP students with high scores to enter advanced-level courses by substituting the AP courses for prerequisite courses. Still others may not grant credit at all, but the AP experience, credit, and score improve the quality and overall competitiveness of the college application.

The number of AP economics exams administered has grown rapidly. The AP economics course debuted in 1989, and 5,781 micro and macro exams were administered in the initial year. In 2010, 134,747 exams were administered, a 23-fold increase from 1989. In macro, 55.3 percent of the students "passed" the test with a 3, 4, or 5; 14.4 percent received a 5. In micro, 63.8 percent of the students "passed" the test; 16.6 percent received a 5 (College Board 2010a).

The Institutional Structure of AP Economics

Before turning specifically to economics, we review the structure of AP programs generally. AP exams are products of the College Board, which is a not-for-profit membership organization whose "mission is to connect students to college success and opportunity" (College Board 2008). The major impact of the College Board is through testing high school students with exams such as the SAT®, the PSAT®, and AP exams. The results of these exams are very important in admissions decisions at competitive colleges and universities.

As stated above, the actual content of the exams is developed by ETS, a test-development company based in Princeton, New Jersey. It develops and scores 50 million exams annually in 180 countries. ETS develops many of the exams

administered by the College Board. The College Board and ETS play a substantial role in the process of college admissions and placement.

AP courses are taught, not by the College Board or ETS, but by staff at the local school. The paramount goal of the student is to pass the exam, and, therefore, regardless of who does the teaching, the student has a strong incentive to learn the content of the course.

The College Board influences classroom teachers not only by controlling the exams themselves but in other ways. Every AP teacher must submit a syllabus for approval. Also, the College Board trains teachers at workshops and summer institutes through its regional offices and cooperating universities. Workshop instructors must be approved by the College Board. Teachers also receive advice and resources and chat online at the College Board Web site. All schools wishing to label a course "AP" must submit the subject-specific AP Course Audit form and the course syllabus for each teacher of that AP course. AP-approved courses must be periodically renewed and may be transferred with teachers to new high schools on College Board approval.

Turning now to economics, the micro and macro exams—again, the only two AP economics exams—are developed by ETS assessment specialists with the help of the AP Economics Development Committee, which is appointed by the College Board. The committee consists of six experienced teachers from secondary schools, colleges and/or universities (College Board 2005a, 2005b).

The exam development process works as follows: First, ETS develops a curriculum survey and distributes it to the economics departments at 200 colleges and universities. Using the responses received, the committee develops a course description for the micro and macro courses, which is available from the College Board on its Web site (link) and in print. The course description lists content areas covered and even specifies the percentage of the multiple-choice questions devoted to each content area.

Next, multiple-choice questions, written mainly by college instructors and committee members, are selected and then revised and pretested by ETS's content experts (College Board 2000a, 2000b). The committee then finalizes the multiple-choice exam based on the content specifications of the course description. Finally, the committee writes three free-response or essay questions, and the entire exam is finalized. Each exam consists of a 70-minute, 60-question, multiple-choice section and a 60-minute, three-question, free-response section.

On a single day at a single time, the exams are administered to students in high schools across the United States and around the world. The testing sites have stringent rules to assure against cheating.

Then the exams are scored. The multiple-choice section is scored by machine at ETS. The free-response questions are scored by "faculty consultants."

They are experienced college economics and high school AP economics instructors. They meet in a group process dubbed "the reading." The "readers" develop a detailed scoring rubric for each question and proceed to score the answers.

Finally, ETS aggregates the scores, develops a curve, and determines a score (1-5) for each student. The multiple-choice questions count for two-thirds of the final score, and the free-response questions count for one-third.

AP Economics: The Good

Both the micro and macro exams cover many of the topics of a representative college-level introductory economics course.

The micro exam begins with scarcity, choice, and opportunity cost. Comparative advantage, absolute advantage, specialization, and trade are covered. Production possibilities curves and marginal analysis are prominently featured. Most of the micro exam covers the nature and functions of product markets. Topics include supply and demand, price controls, marginal utility, elasticity, tax incidence, consumer surplus, and producer surplus. This section also covers production and costs, firm behavior, and market structure. Questions cover price and output under perfect competition, monopoly, oligopoly, and monopolistic competition. Other questions cover factor-market behavior, including derived demand, marginal revenue product, and the market distribution of factor income. Finally, market failure and the role of government are covered, stressing externalities, public goods, and antitrust regulation.

The macro exam begins with a few questions on basic economic concepts such as scarcity, opportunity cost, comparative advantage, and supply and demand. Measuring economic performance is covered, including real and nominal GDP, inflation, and unemployment. The bulk of the exam is on national income and price determination and features aggregate demand and aggregate supply analysis. This analysis includes the financial sector, and there are numerous questions on monetary and fiscal policies. There are a few questions on economic growth, productivity, and international trade and finance.

The AP economics program benefits students and high schools with AP courses in at least four ways.

AP Economics Prepares Students for College.

Dodd, Fitzpatrick, Ayala, Jennings (2002) and Breland and Oltman (2001) find evidence to suggest that AP economics students do as well or better in higher-

level micro and macro undergraduate courses than students who complete only a college principles-of-economics course. Melican, Debebe, and Morgan (1997) attribute this better performance of the AP students to four factors: (i) the preparatory experience in high school directs high school learning efforts toward passing the AP exam; (ii) highly specialized AP teachers with common training backgrounds are committed to designing comparable courses and identifying similar learning objectives; (iii) many college instructors, by contrast, have many degrees of freedom in designing and teaching their courses as well as setting course objectives and designing tests; and (iv) because the success of college students in their courses is dependent on a broader set of factors, they are less likely than high school AP students to be intensely focused on answering questions like those found on the AP exam. Of course, high school AP economics students are usually atypical students and ranked higher academically than many of their typical college counterparts. According to Bradt (2006) and Dougherty, Mellor, and Jian (2005), we should keep this and other intangibles in mind when investigating the college performance of students taking the initiative to tackle the AP opportunity in high school. Nevertheless, many studies claim to control for this.

AP Students Are Held Accountable for the Designated Material.

Student achievement increases when a course has well established standards and a relatively narrow set of objectives, and when the teacher has high responsibility and accountability. AP economics does well on all of these counts. The AP economics courses are based on the Economics Development Committee's selected college courses. There is a standardized exam taken by all students. Answers to questions are carefully constructed and graders are selected based on qualification. So students are under some pressure to perform well on the common exams, and the exams have measurable outcomes. This puts pressure on teachers to invest in enabling their students to perform well. Also, numerous resources are available to assist both teacher and student.

Students in Other Economics Courses Benefit from the AP Program.

AP teachers must have additional preparation in the teaching of economics to be successful. This preparation increases the quality and rigor of all classes taught by AP instructors. Many teach one or two sections of AP economics while also teaching regular economics during the rest of the school day. The teaching of

AP courses may well create positive spillover effects in the form of improved teaching in the regular economics courses.

AP Economics Provides Valuable Feedback on School Success.

Many individuals, organizations, groups, and local, state, and federal governments require that schools be accountable for achieving measurable results. Voters want records of solid performance when asked to fund schools. Private donors want results. Parents want measurable outcomes when shopping for schools. AP's curricular and resources requirements are rather clear, and such clarity assists in helping schools, administrators, teachers, and students succeed in getting quantifiable results.

AP results provide valuable feedback about the success of school programs because they are reported by school, teacher, and student. These results are also used when media companies such as *Newsweek* and *U.S. News and World Report* rank high schools.

AP Economics: The Bad

Despite the positive effects of AP economics on high school economics programs and students, we believe the exams can be improved by putting more emphasis on economic reasoning while reducing the emphasis on mechanics. A review of the sample questions in economics posted by ETS (College Board AP Website, link) clearly reveals that most of the questions involve little or no economic reasoning. Instead, they are mechanical, abstract in nature, and narrow in application. By moving away from the "engineering" approach of the current AP exams and leaning more on economic-reasoning skills, AP economics could help students to improve their skills in economic reasoning. Cultivating the economic way of thinking will help students to provide answers to a wider variety of exam questions, to make strategic decisions in their different roles in life, to appreciate the complexity of economic systems, and to explain how economic forces change and evolve over time. Moreover, a strong foundation in economic reasoning will better prepare students for undergraduate courses in economics.

Tables 1 and 2 highlight features of the micro and macro exams. In the construction of each table, we asked ourselves the following questions: Do the exams focus on an economic way of thinking or do they stress a mechanistic, engineering approach to economics? Do the exams favor certain schools of economic thought? Are important concepts such as the protection of property

rights, the legal institutions supportive of economic freedom and growth, and the imperfections (or "failures") of government included in the exams?

Table 1: Analysis of Content of Released AP Microeconomics Exams

Topic	1990 Exam	1995 Exam	2000 Exam	2005 Exam	
	Number of questions with the indicated feature				
Scarcity, choice, opportunity cost	1	0	2	2	
Economic reasoning	0	2	1	3	
Mechanics	35	42	42	42	
Market failure, government correction	4	5	3	2	
Public-choice theory, government failure	0	0	0	0	
Monopoly behavior	4	4	6	5	
Benefits of trade	2	0	1	1	
Consumer and producer surplus	0	1	0	1	
Income redistribution	1	1	1	2	
Benefits of private property protection	0	0	0	0	
Benefits of economic freedom	0	0	0	0	
Economic systems	1	1	0	0	
Price ceilings and floors	2	3	3	1	

Table 2: Analysis of Content of Released AP Macroeconomics Exams

Topic	1990 Exam	1995 Exam	2000 Exam	2005 Exam		
	Number of questions with the indicated feature					
Scarcity, choice, opportunity cost	1	0	0	0		
Economic reasoning	0	0	0	1		
Mechanics	17	27	32	26		
Macroeconomic statistics	6	2	6	8		
Keynesian economics	12	17	18	13		
Classical economics	2	1	1	2		
Monetarism	1	1	1	0		
Expectations	1	1	1	3		
Supply shocks/supply side	2	1	2	2		
AD/AS	4	5	5	10		
Government deficits and debt	1	2	2	3		
Balanced budget multiplier	0	0	1	1		
Phillips curve	2	1	0	2		
Benefits of trade	1	3	3	2		
Balance of trade, exchange rates	3	3	3	5		
Monetary policy	6	7	11	13		
Economic growth, productivity	2	3	0	2		

On close review of the multiple-choice sections of the released exams, the reader notices a number of interesting features in Tables 1 and 2. There are few questions on expectations, monetarism, or classical economics on the macro exams. The benefits of protecting private property and promoting economic freedom receive no coverage. Economic reasoning is lightly covered on both exams.

The micro and macro free-response questions have a mechanistic approach similar to that of the multiple-choice questions. The micro free-response questions generally test the student's ability to construct and manipulate diagrams involving demand, supply, or production possibilities curves. Some questions involve the interactive effects of change in the firm and industry under different market structures, as well as interactive effects of changes in product and factor markets. Monopoly and perfect competition are often compared. There is gen-

erally a question on the effects of externalities on efficient allocation. Almost all free-response questions involve a diagram. The macro free-response questions also focus on diagram manipulation, mainly aggregate demand and supply curves. The effects of federal monetary policies or government policies often must be diagramed and explained. Other free-response questions focus on the mechanics of comparative advantage and of exchange-rate changes.

The exams largely omit those questions that test how well students can use economics to explain the monetary and fiscal policy world around them or how well they can use the knowledge to make better decisions as consumers, savers, investors, entrepreneurs, job seekers, and voters. By focusing on the nuts-and-bolts of "blackboard" economics, three unintended consequences emerge.

First, the AP exams stress mechanical exercises at the expense of the economic way of thinking. Outside of a few basic topics like scarcity, opportunity cost, comparative advantage, and gains from trade, very few of the exam questions test the ability of students to reason, to systematically compare and contrast different choices in a variety of settings, to interpret the economics of current events, or to identify the errors often present in articles in the popular media. Thus, the exams give students the impression that the job of an economist is to grind out solutions about the optimal price and output in a static world, to compute the proper size of government spending and the budget deficit under various specified conditions, and to impose taxes and subsidies in a manner promising to maintain efficient allocations, stable prices, and low rates of unemployment. This mechanistic approach leaves students with the false impression that economics is like engineering. A large segment of economists who tend to favor freer markets and less governmentalization of the economy would adamantly object to the mechanistic orientation, as would many heterodox economists who lean more to the left. All such economists see shortcomings in the mechanistic engineering approach and are apt to regret the impressions it often leaves students with regard to the precision and determinateness of economic analysis.

Admittedly, the engineering-type questions are easier to design and grade. This is particularly true for the free-response questions, the grading of which is very labor-intensive. Nonetheless, it would be relatively easy to modify existing questions or introduce questions that involve reasoning ability, analysis, and application of general concepts into the multiple-choice portion of the exams.

Second, AP economics ignores the importance of property rights and their impact on incentives. Clearly defined and enforced property rights exert a major impact on the present and future use of resources. When goods, services, and resources are owned privately and securely, owners have a strong incentive to (1) take care of their property, (2) develop it in ways that are highly valued by potential

trading partners, and (3) conserve for the future, particularly if the price of the resource is expected to rise as the result of increased scarcity. In contrast, regulation often weakens private ownership rights and undermines the ability of owners to direct their resources toward their highest valued uses. Similarly, common ownership of property leads to overuse and a failure to invest and conserve for the future. The latter is discussed in a very limited fashion in the materials supporting the micro exam but is not included in the macro exam. The micro and macro exams reviewed from 1990, 1995, 2000, and 2005 did not include even a single question on private property rights. While there is a brief reference to property rights in the AP Microeconomics Course Outline (College Board 2008), the reference is buried. Furthermore, three out of the four representative micro online syllabi posted at the AP economics Web site do not definitively mention the topic of property rights. The track-record gives little impetus to AP instructors or students to pay any attention to this vitally important topic.

Third, the concepts of entrepreneurship and dynamic competition are omitted in both the micro and macro exams. Economic progress is largely a story about dynamic competition, innovation, and the discovery and development of improved products and lower-cost production methods. When markets are open and competitive, entrepreneurs have a strong incentive to discover and develop improved products that eventually replace older ones and render them obsolete (Schumpeter's creative destruction). Examples abound. The smart phone is replacing the land line; the Global Positioning System (GPS) is replacing maps; the auto replaced the horse and buggy; the word processor replaced the typewriter; the phonograph was replaced by the cassette tape player, which was later largely replaced by CD and now MP3 players. During just the past 60 years, the list of new products that have transformed our lives would include: MP3 players, highdefinition televisions, microcomputers, hybrid cars, the World Wide Web, microwave ovens, video and digital cameras, hand-held devices, Blue Ray players, heart bypass surgeries, hip replacements, Lasik eye surgery, and auto air conditioners.

The omission of dynamic competition and entrepreneurship along with property rights means that AP students will have little understanding of the forces underlying economic growth. Further, their knowledge of why some nations prosper while others stagnate over time will be extremely limited. The growth process is largely about secure property rights, gains from trade, open access to markets, use of improved products as a competitive tool, monetary and price stability, and investment in both physical and human capital. Of course, the AP course covers investment in capital and improvements in technology as sources of growth, but there is no tie-in with property rights and dynamic competition. Without well-defined and enforced property rights, the incentive to invest is

undermined. Similarly, without open markets and dynamic competition, the spread of technological improvements throughout the economy will be slow. The AP exams simply do not cover any of this. Instead, students are left with the construction and manipulation of the good old production possibilities curve, the identification of equilibrium price and quantity, or the calculation of the spending multiplier, real GDP, nominal GDP, or something else. Once again, economics as engineering triumphs over real-world analysis and economic reasoning.

The failure to consider the key factors underlying the growth process is particularly tragic because AP economics will be the only economics course many students will ever take. Moreover, our experiences and the study of Rocca and Pruitt (2009) indicate that students have a strong interest in dynamic change and entrepreneurship. It is relatively easy for them to see how both affect their lives.

AP Economics: The Ugly

Tables 1 and 2 indicate that the AP economics courses and exams reflect views that were highly popular in the 1970s. During that era, it was widely believed that market forces were the primary source of economic instability, that fiscal policy could smooth the ups and downs of the business cycle, and that the job of the economist was to make wise engineering decisions that promoted economic stability, corrected market failures, and achieved a socially desirable distribution of income. Economics, including macroeconomics, has grown and developed since this time. Our point here and in the paragraphs that follow is not to discard the historical importance of this period of economic thought. Instead our goal is to broaden and update it to include the theoretical advancements and scholarly research of recent decades.

The AP macroeconomics exam and resources largely reflect the simplistic Keynesian view from the 1960s and 1970s. This view asserted that market economies were inherently unstable and that fiscal policy in particular was a powerful tool with which to correct this deficiency. The view was popular four decades ago, and several of its core elements have been resurrected as a justification for policies designed to promote recovery from the current recession. However, many economists, if not most, now recognize that the use of fiscal and monetary policies to promote stability is far more complex than presumed by the Keynesian-engineering approach, especially as represented in AP materials.

Well-rounded economics courses highlight the potential of fiscal and monetary policy as stabilization tools. But they also cover their limitations and the historic fact that policy errors have often been a source of macroeconomic instability. Modern economics recognizes the difficulties involved in forecasting the future direction of the economy, timing policy shifts correctly, and the time lags between when a policy change is instituted and when the change will exert an impact on the economy. The modern view also recognizes that changes in macro policy often alter incentives and generate secondary effects in addition to those stressed by the Keynesian model.

Unfortunately, this modern view has not made its way into AP macroeconomics exams, preparation materials, and courses. Table 2 shows that 21-30 percent of the questions emphasize Keynesian analysis. Graphical questions on the simple Keynesian aggregate expenditure model and/or aggregate demand changes in a horizontal or Keynesian range of the aggregate supply curve of the economy were present on the 1990, 1995, 2000, and 2005 exams. These exams also contained several questions on the multiplier effects of government spending and the balanced budget multiplier. The 2005 macro exam shows slightly more respect for classical economics and the effects of expectations in implementing monetary and fiscal policies. However, the exam is still heavily Keynesian, and about half of the questions involve shifting curves and other mechanistic procedures. None of the macro exams contain questions on the imperfect information, limited forecasting abilities, and timing problems that complicate the choices of policy-makers. Neither were there any questions about the political incentive structure that, for example, tends to bias policy shifts toward budget deficits and fiscal expansion.

Like AP macroeconomics, the AP microeconomics course and exam highlight the deficiencies of markets and the potential of government as a corrective agent. The course description covers externalities, public goods, antitrust policy, and income distribution. When markets fail to achieve ideal efficiency conditions because of externalities, the government can correct the deficiency by levying the proper tax or subsidy. Similarly, government action can provide the efficient quantity of public goods and regulate monopolies or apply antitrust legislation when competition is absent. It is fine to cover these topics. However, there is no coverage of the linkage between externalities and poorly defined and enforced property rights. Neither is there any coverage of the fact that government regulations are often the source of non-competitive markets. In the AP world, markets fail and the government provides the solution.

The terms social efficiency, social benefits, and social costs are peppered especially throughout the micro materials. The term "social efficiency" is never clearly defined in the AP resources, and it is sometimes used interchangeably with allocative efficiency and productive efficiency. But the AP materials do make a connection between social efficiency and an equitable distribution of income. Thus, the term reflects the idea of a social welfare function and an "ideal" distribution of income. The designers of the AP materials do acknowledge the dif-

ficulties involved in determining whether a distribution of income is equitable. Thus, only equitable (or inequitable) income distributions are formally recognized. The Lorenz curve and Gini coefficient are introduced as tools that will help to represent the inequality of income distribution. As previously mentioned, redistribution of income is presented as one of the major functions of government, and students are left with the impression that a more equal distribution of income is also more equitable. There is no coverage of how levying taxes on some in order to provide transfers to others will affect the incentive to earn of either taxpayer-donors or transfer recipients. Neither is there any consideration of what type of income transfers are likely to be generated by the political process. No mention is made of the fact that transfers are often directed toward members of well-organized interest groups with incomes substantially higher than the taxpayers footing the bill. There is some good news here: while social efficiency is a component of the course outline, it has received little coverage on the exams. There were no questions on this topic on the 1990, 1995, 2000, or 2005 exams.

While market failure is an integral part of the AP world, the public choice literature and the possibility of government failure are totally absent. The public choice literature shows that when government action imposes a small personal cost on a large majority in order to provide substantial benefits to a well-organized interest group, elected political officials have a strong incentive to support the concentrated interest even if the action is counterproductive. Similarly, the political process is biased toward actions that generate immediate, highly visible benefits at the expense of future costs that are difficult to identify. This incentive structure provides elected political officials with a strong incentive to spend more than they are willing to tax. A long string of budget deficits in the Keynesian era of the past 50 years is an outgrowth of this incentive structure. Public choice analysis also explains why a larger share of resources will flow into inefficient rent-seeking activities and a smaller share into productive activities when the government becomes more heavily involved in providing subsidies, tax breaks, and other political favors to some at the expense of others. In turn, as resources are shifted away from productive toward counterproductive activities, per capita income will fall below its potential.

The bottom line is clear: The AP course and exams present students with a highly imbalanced view of markets and government. In the AP world, market failures in the form of economic instability, absence of competition, externalities, and public goods are a problem. But ideal solutions can be engineered by economists, and presumably they will then be instituted by saintly government officials. Government failure simply does not exist in AP economics.

Modern economics indicates that the truth is more nearly the opposite. When property rights are well-defined and markets are relatively free, business firms earn profits by using resources to produce goods and services that are valued more highly than the resources required for their production. In contrast, losses discipline firms that misallocate resources and do not provide consumers with enough value to cover costs. Thus, the profit and loss mechanism of a market economy tends to direct resources toward productive projects and away from those that are unproductive. The political process does not have any mechanism parallel to profit and loss that can be counted on to direct resources toward productive uses. Moreover, as public choice analysis indicates, to a large degree, the modern political process is about various coalitions trading contributions, high-paying jobs, and other forms of support to political officials in exchange for subsidies, spending programs, and regulations that provide well-organized groups with privileges and subsidies.

But all of this is totally absent from AP economics. There is no mention of the possibility of government failure, and there has never been a question on this topic. Rather, government is presented as a means through which social efficiency can be achieved when free markets fall short of ideal "blackboard perfection." This was acceptable 30 years ago, but it is a gross misrepresentation of economic scholarship today.

It is revealing to compare and contrast AP economics with the *Voluntary National Content Standards in Economics* (2010). In 1997, the Council for Economic Education (formerly the National Council on Economic Education), the National Association of Economic Educators, and the American Economics Association's (AEA) Committee on Economic Education developed a set of 20 voluntary national content standards for economics (hereafter, referred to as "standards"). The standards were developed with the consultation of economic educators, other economists, and the K-12 community. The AEA Committee on Economic Education played a central role in the development of these standards, and the committee approved the final version. The 1997 standards were revisited and refreshed in 2010. These standards are designed to reflect the current status of scholarship in the discipline.

The standards stress economic reasoning rather than mechanics. They highlight the role of gains from trade (Standards 5 and 6), market prices (Standards 7 and 8), the competitive process (Standard 9), protection of property rights (Standards 10 and 16), and profit and entrepreneurship (Standard 14). They cover market failure (Standard 16). But government failure and special interest politics (Standard 17) are given equal attention. Thus, the standards address the role of property rights, entrepreneurship, dynamic competition, and both market and government failure. This is what a balance presentation of modern economics would look like, and it stands in stark contrast with the imbalanced coverage of AP economics.

The College Board responds to this criticism by maintaining that the AP program is only teaching what is taught in college principles courses. The AP Development Committee periodically surveys Economics departments at colleges and universities "to ascertain what topics and abilities are being stressed in introductory-level courses." (College Board 2000b). The committee asks college instructors to review the exam questions for accuracy and partake in the audit of AP economics courses through the review of the syllabi. We do not know whether the departmental surveys are a truly random sample or merely voluntary responses to the survey questionnaire. There may also be a reluctance to modify the structure of the content because doing so would involve additional training of AP instructors. These issues aside, there is a crucially important difference between college-level principles courses and AP economics. College instructors have many degrees of freedom and can deviate from their course outlines, and they can change those outlines over time; most importantly, they determine their own examinations. AP high school instructors simply do not have the same flexibility and latitude as their college counterparts.

The core coverage of economic principles at a majority of colleges and universities may well look much like the AP course, although the *Voluntary National Content Standards in Economics* raise questions with regard to this issue. We have argued that AP materials give short shrift to the rubric of property rights and economic freedom, and the rubric of entrepreneurship, discovery, and innovation. Others like Dan Johansson (2004) have documented that these same two rubrics are largely absent from the leading textbooks of graduate education in economics. Those instructors who teach introductory economics at the college level are the products of such education, and they are the ones who set the tone for the Economics Development Committee in making the AP economics exams. Thus, the problems we have identified may well run through the entire cultural ecology of academic economics.

Conclusion

The AP economics courses and exams present an imbalanced view. They leave many of our brightest high school students with misleading impressions of both economics and how a society can get the most out of its resources. AP economics focuses on mechanics rather than economic reasoning. The vitally important roles of secure property rights, dynamic competition, entrepreneurship, and innovation as sources of growth and prosperity are almost totally ignored by AP economics. Moreover, students are presented with a highly imbalanced view of markets versus government. Market failure is covered, but government failure

is totally omitted. Students are left with a false impression of how the political process works and a lack of understanding of why government intervention often leads to outcomes that are dramatically different than those promised by politicians. The cause of economic enlightenment is poorly served by these omissions and imbalances.

The authors hope that this article encourages those individuals involved with the development of AP economics to consider integrating more economic reasoning into the courses and exams and to broaden their design teams to include economists with perspectives associated with such thinkers as Adam Smith, J.B. Say, Friedrich Bastiat, Friedrich Hayek, Milton Friedman, James Buchanan, Ronald Coase, Gary Becker, and Vernon Smith, to name a few. Such changes would provide tens of thousands of AP economics students with a more accurate assessment of the current views of professional economists and enhance their understanding of real-world economies and what might be done to improve their operation.

As previously mentioned, there were 134,747 AP economics exams administered in 2010. Even if the AP economics courses are not reformed in the needed directions, we hope that the information provided here will enhance the awareness of students and parents with regard to the shortcomings and biases of AP economics as they make future choices about whether to take principles of economics at the high school or college level.

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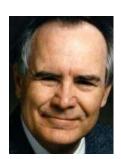
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