THE MICRO IN PRINCIPLES OF MACRO: A SURVEY AND MODEST PROPOSAL

Nancy J. Burnett, Marianne Johnson, and Alexander Kovzik[1]

Abstract

To better understand the degree to which students enrolled in principles of macroeconomics are exposed to fundamental microeconomic concepts, we survey twenty popular textbooks. Using the TUCE guidelines as a framework, we categorize the microeconomic content of the textbooks by topic and amount of coverage. We find that for the significant percentage of undergraduates who take only a single semester of macroeconomics, these students are left without enough exposure to the core concepts of microeconomics – including ones that underpin macroeconomic models. On its own, we hope our detailed survey will prove useful to instructors who must select between a myriad of seemingly similar textbooks. In addition, we make a modest proposal for how instructors could include some specific microeconomic content at low opportunity cost.

Key Words: Principles of Macroeconomics, Micro-foundations, Textbooks of Economics

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Introduction

Undergraduates since the time of Alfred Marshall have studied the *Principles of Economics* (1890). For Marshall, all such principles were microeconomic in nature. Subsequent textbooks from the early 20th century, including Richard T. Ely's best-selling *Outlines of Economics* (1930), followed Marshall's focus on microeconomic theory but appended a handful of chapters on 'macroeconomic' topics such as monetary policy and business cycles. Paul Samuelson's *Economics* (1948) fundamentally changed both the conception and the teaching of economics by integrating the two into "a grand neoclassical synthesis."[2] The inaugural edition of his textbook placed macroeconomic problems such as unemployment and depressions first; these were followed by microeconomic topics. In later editions, the order would be reversed. Contemporary textbooks go both ways – some opt for microeconomics before macroeconomics (Mankiw 2021) and others, after a few introductory chapters, present macroeconomics before microeconomics (Miller 2021). A distinct minority of recent books have attempted to upend the established orderings by reconceiving textbooks along applied or topical lines (CORE 2017; Bowles and Carlin 2020). While having some ardent adopters, such textbooks are not yet the mainstream of undergraduate teaching.

[1] Nancy J. Burnett, Professor of Economics, Emeritus, University of Wisconsin Oshkosh, Oshkosh, WI, 54901. Marianne Johnson, Professor of Economics, University of Wisconsin Oshkosh, Oshkosh, WI, 54901. Alexander Kovzik, Associate Professor of Economics, University of Wisconsin Oshkosh, Oshkosh, WI, 54901.

[2] The relation of macro to micro has been "actively discussed from nearly the moment that the distinction between micro and macroeconomics emerged in the 1930s" (Duarte and Lima 2012, 4). Questions about the scale of analysis and aggregating individual behaviors continue to persist. The push for micro-foundations for macroeconomics that emerged in the later 1970s has only complicated the issue, so that now for "many young economists who are unfamiliar with the history of macro, the thought of doing macro without representative agent micro foundations is almost heretical" (Colander et al. 2008, 236).

The absence of consensus regarding the optimal sequencing of economics textbooks spills over to the sequencing of principles courses. Whereas John Fizel and Jerry Johnson (1986) recommended micro to precede macro, Jane Lopus and Nan Maxwell (1995) suggested the opposite. Others such as David Brasfield et al. (1993) claim it makes no difference. Andy Terry and Ken Galchus (2003) solve the problem by arguing for concurrent enrollment. More recently, Gerald Prante (2016, 82) reviewed the offerings of the 380 colleges and universities listed in the *Princeton Review's Best Colleges Edition*. He finds that the majority of schools offer separate microeconomic and macroeconomic principles courses, and most institutions allow students to choose the order in which to take the classes.

The teaching of economics principles is not a trivial matter. In their survey of undergraduate education, Sam Allgood, William Walstad, and John Siegfried (2015) outline the instructional obligations of economics departments – certainly to offer a set of courses for the major. With much wider reach, however, economics departments also offer principles courses in service to other departments. These courses form the foundation for study in fields such as business, political science, sociology, environmental studies, and international studies. Most such departments require students to take one or two courses in economics early in the major. Siegfried and Walstad (2014) similarly emphasize the importance of principles courses to the broader educational experience, estimating that 40 percent of undergraduates take at least one economics course during their collegiate career. "Obviously, the course taken most often would be introductory economics, either as a single-semester course, a two-semester sequence of principles of microeconomics and principles of macroeconomics, or at least half of the two-course sequence" (Siegfried and Walstad 2014, 148). This has long been true – Samuelson envisioned his textbook as being useful for those students "who will never take more than one or two semesters of economics" (1948, v).

Most economists would likely agree that in an ideal world all undergraduates would take both microeconomics and macroeconomics. Well-informed citizens and voters should understand both the implications of government policy decisions regarding unemployment as well as how the profit motive spurs businesses to expand or contract employment and/or to substitute capital for labor in the production process. However, university pressures to keep general education requirements minimal and manageable and departmental incentives to encourage courses within rather than outside one's major mean that practically, many U.S. students will only take a single economics course.[3] Although precise estimates are sparse, anecdotal and observational evidence suggests quite a lot of students fall into the "half of the two-course sequence" category – especially common would be the non-business and non-economics majors who take economics to fulfill general education requirements or major requirements.[4] It was concern for these students that led Lopus and Maxwell (1995) to conclude that for those who take only one principles course, it should be macroeconomics, as it tends to

[3] One option that some institutions adopt is that of a hybrid or survey course. Offering such a course has implications for resource allocations in a department, especially if the course might not regularly fill, if other departments might not choose to require the course, or if faculty are needed to teach semester-long micro or macroeconomics sections. At our institution, for example, we have a hybrid course, but it does not meet the same general education requirements as microeconomics or macroeconomics. Further, departments such as social work and sociology require either macroeconomics or microeconomics and do not allow the survey course. Hence, the survey course is offered infrequently compared to micro and macroeconomics.

[4] Prante (2016, 78) reports that of 369 schools, 92 offer a combined micro-macro principles course and seven schools offer a choice of a combined micro-macro survey course or separate courses in microeconomics and macroeconomics.

incorporate some fundamental microeconomic principles, whereas microeconomics tends not to cover any macroeconomics at all. Hart Hodges, Yvonne Durham, and Steve Henson (2018) speculate that many students may voluntarily opt for macroeconomics over microeconomics because they think microeconomics has steeper mathematics requirements or because they see macroeconomics as more practical and interesting.

The purpose of this paper is not to change policies regarding which course should be taken first, or which single class must be taken by those in the "half of the two-course sequence" category. Rather than recommending substantial instructional or institutional changes, we take as given that a significant number of students either will take only a single economics principles course or will take macroeconomics before they take microeconomics for various reasons.[5] The question thus becomes how instructors can best convey the wholeness of economics to these students – the fundamental principles and ways of thinking that underpin much of both micro and macroeconomics. Students not exposed to the core microeconomic concepts on which macroeconomics is built may finish the course without any vision of 'the big picture,' leaving them less able to spot specious economic arguments. We suggest that macroeconomics instructors can incorporate some essential microeconomics concepts in an introductory macroeconomics course with little cost and potentially much benefit, measured as deeper student comprehension.

We motivate our discussion with a survey of popular macroeconomics textbooks, considering which 'microfoundations' each includes and how these topics induce a deeper understanding of macroeconomic concepts. Using the TUCE guidelines as a framework, we categorize the microeconomic content of the textbooks by topic and amount of coverage. Judging by textbook exposure, we infer that a significant proportion of students may have only limited exposure to the core concepts of microeconomics that are important to macroeconomics – including ones that underpin macroeconomic models.[6] On its own, we hope our detailed survey will prove useful to instructors who must select between a myriad of seemingly similar textbooks. We also make a modest proposal for how instructors could include some microeconomic content with low opportunity cost. In doing so, we attempt to make the case for instructors to occasionally reflect on their course structure and content, to reconsider their textbook choices, and to think deeply about the picture of economics they give to students.

Survey of Textbooks

We survey the current editions of twenty common macroeconomics principles textbooks published on the microeconomic content included.[7] To organize the microeconomic concepts contained in macroeconomics textbooks, we employ the structure and classifications of the Test

[5] During the last twenty years, our institution has experimented with the sequencing order before finally giving up and allowing students full flexibility in scheduling their principles courses. Such flexibility is not without a cost. When students were required to take microeconomics before macroeconomics, every student was in the same position and most macroeconomics syllabi would include only a very brief review of the supply and demand mechanism. Now, instructors must devote extra time to the detailed introduction of core microeconomics principles at the expense of some macroeconomics topics.

[6] Such similarity has been previously noted: "Past studies of achievement in introductory economics found that the choice of textbook does not appear to matter, probably because of the homogeneity in textbook features and content coverage among the leading principles of economics textbooks (Allgood, Walstad and Siegfried 2015, 294).

[7] It is difficult to generate a definitive list of top-selling textbooks beyond that by Mankiw, which is estimated to cover 20 to 25% of the market for introductory textbooks. Those included here were in part influenced by Samuelson (2019) and Bowles and Carlin (2020), as well as by our own experiences and those of our colleagues.

of Understanding in College Economics (TUCE-4). The TUCE is a joint effort of the Committee on Economic Education (CEE) of the American Economic Association (AEA) and the National Council on Economic Education (NCEE); it has long offered a reliable assessment instrument for students in principles of economics courses (Walstad, Watts, and Rebeck, 2007). The TUCE's content categories for microeconomics and the recommended percentage ranges for the allocation of test items are summarized in Table 1.

We realize the inclusion of microeconomics topics in macroeconomics textbooks does not guarantee that instructors will necessarily discuss them. However, this applies equally well to macroeconomics topics. While many instructors may not have time to cover international economics or exchange rates, these topics are still routinely included in macroeconomics textbooks because (i) they are important subjects, and (ii) textbooks operate as a resource for students seeking more information. We argue it is better for an instructor to have the option to assign particular chapters as suggested reading, supplemental reading, or a bonus assignment than to have to find or generate their own material to fill in gaps. An insufficiency of microeconomic content in macroeconomic textbooks can also contribute to perceptions that the material is not of importance or that the topics are "a collection of random topics" (Kagundu and Ross 2015, 20) rather than fundamental building blocks.

Table 1. Microeconomic Topics in the TUCE

Category	**Examples of Topics**	**Recommended Percentage Allocation**
A. The Basic Economic Problem	Scarcity, Opportunity Cost, Choice	10 – 15%
B. Markets and Price Determination	Determinants of Supply and Demand, Utility, Elasticity, Price Ceilings and Floors	20 – 25%
C. Theory of the Firm	Revenues, Costs, Marginal Analysis, Market Structures	25 – 30%
D. Factor Markets	Wages, Rents, Interest, Profits, Income Distribution	10 – 15%
E. The Role of Government in a Market Economy	Public Goods, Maintaining Competition, Externalities, Taxation, Income Redistribution, Public Choice	15 – 20%
F. International Economics	Comparative Advantage, Trade Barriers, Exchange Rates	10 – 15%

As publishers seek to balance content coverage with production costs, it is inevitable that textbook authors must make decisions about which topics are most deserving of inclusion. Certainly, it would be unrealistic to expect macroeconomics textbooks to fully cover the gamut of microeconomics topics – yet many authors make the choice to include at least some brief discussion of various microeconomic concepts. Not infrequently, authorial choices regarding coverage are criticized. For example, Robert Samuelson (2019) suggests it is time to retire the Mankiw textbook because it fails to cover the impact of the Internet or digitalization — nor does

it pay much attention to the Great Recession of 2007 – 2009 or the rise of China. Samuel Bowles and Wendy Carlin (2020) call for a major overhaul of textbooks to better address contemporary economic problems such as climate change and discrimination.

Not surprisingly, the textbooks we survey include different amounts of microeconomic content, measured by topics covered, the number of chapters, and the number of pages. Although all the textbooks have about the same amount of coverage of The Basic Economic Problem of scarcity and opportunity cost, from there, texts diverge significantly. For instance, Miller (2021), McConnel, Brue and Flynn (2021), and Sexton (2020) each devote two chapters to the analysis of market failures, including externalities and public goods. Cowen and Tabarrok (2018) include a full chapter on public choice later in their book, and Stevenson and Wolfers (2020) have a chapter on inequality - all of these follow the traditional discussion of the mechanism of supply and demand and government intervention via taxes and price controls. The other textbooks include notably less on these topics.

To better capture specific topics, we divide each of the general categories listed in Table 1 into subtopics (also guided by the TUCE). In some cases, we find significant commonalities, while in others there is much less agreement on what should be included in a macroeconomics textbook. Our findings are summarized in Table 2. Appendix A provides detailed list of the exact number of ‘microeconomic’ chapters in the introduction section of various macroeconomics textbooks and their location in the book.

Table 2. Microeconomics Topics and Macroeconomic Textbook Coverage

	Markets and Price Determination					Theory of the Firm				Factor Markets				Role of Government				International Economics		
	Supply & Demand	Law of Demand	Elasticity	Consumer/ Producer Surplus	Price Ceilings and Floors	Profit Motive in Supply	Profit Listed in the Index/ Role of the Entrepreneur	MR=MC Rule	Market Power/ Regulation	Poverty	Unequal Burden of Unemployment	Tax Incidence	Redistribution	Market Failure	Public Choice	Public Goods	Externalities	Comp. Advantage	Exchange Rates	Barriers to Trade
Acemoglu/ Laibson/ List	C, I	DMB	N	N	Y	N	Y, N	Y	Y, N	Y	Y	N	N	N	N	N	D	I	Y	LW
Bade/ Parkin	C	RP	N	N	N	N	Y, Y	N	N, N	Y	N	N	D	N	N	D	N	G, I	Y	NL
Baumol/ Blinder	N	N	N	N	Y	Y	Y, N	N	Y, Y	N	Y	Y	D	Y	N	N	N	G, I	Y	LW
Boyes/ Melvin	N	N	N	N	Y	N	Y, N	N	Y, Y	Y	Y	N	N	Y	D	Y	D	G, I	Y	LW
Case/Fair	N	DMU RP	N	Y	Y	N	Y, Y	Y	N, N	Y	Y	N	N	Y	N	D	D	G, I	Y	NL
Chiang	N	RP	N	Y	Y	Y	Y, Y	N	Y, Y	Y	Y	N	D	Y	D	D	D	G, I	Y	LW
Colander	N	RP	N	N	Y	N	Y, Y	N	Y, Y	Y	Y	Y	D	Y	N	D	D	G, I	Y	LW
Coppock/ Mateer	C, I	N	Y	Y	Y	Y	N, N	N	N, N	Y	Y	Y	N	N	N	N	N	G, I	Y	DWL
Cowen/ Tabarrok	N	DMV	N	Y	Y	Y	N, N	N	N, N	Y	N	N	N	N	Y	N	N	G	Y	DWL
Hubbard/ O'Brien	C, I	SE IE	N	Y	Y	Y	Y, Y	Y	N, N	N	Y	Y	D	N	N	D	D	MI	Y	DWL
Karlan/ Morduch	C, I	RP	Y	Y	Y	Y	Y, N	N	Y, N	Y	Y	Y	N	Y	N	N	D	G	Y	N
Krugman/ Wells	C, I	N	N	Y	Y	N	Y, N	N	N, N	N	Y	N	N	Y	N	N	Y	MI	Y	DWL
Mankiw	C, I	N	Y	Y	Y	N	N, N	Y	Y, Y	Y	Y	Y	N	Y	N	N	D	G	Y	DWL
McConnell/ Brue /Flynn	C	DMU SE IE	N	Y	Y	N	Y, Y	Y	N, N	Y	Y	N	N	Y	Y	Y	Y	I	Y	NL
McEachern	N	SE IE	N	Y	Y	N	Y, Y	Y	Y, Y	Y	Y	N	D	Y	N	D	D	G, I	Y	DWL
Miller	N	NG RP	N	Y	Y	N	Y, Y	N	Y, Y	Y	N	Y	D	Y	N	Y	Y	G, I	Y	LW
O'Sullivan/ Sheffrin/ Perez	C	N	N	N	N	N	N, Y	Y	Y, Y	Y	Y	N	N	N	N	D	D	G, I	Y	LW
Sexton	C	DMB	Y	Y	Y	Y	Y, Y	Y	Y, Y	Y	Y	Y	D	Y	Y	Y	Y	G, I	Y	DWL
Stevenson/ Wolfers	C, I	DMB	N	Y	Y	Y	Y, N	Y	Y, Y	Y	Y	N	Y	Y	N	N	D	MI	Y	DWL
Taylor/ Weerapana	N	RP	Y	N	Y	N	Y, N	N	N, N	Y	Y	N	N	Y	N	N	N	G, I	Y	NL

Key for Table 2

N = Not included
Y= Yes included
D= definition only
C = Competitive markets discussed
I = Imperfect markets included
No = No distinction
DMB = Diminishing Marginal Benefit
RP = Relative Prices
DMU = Diminishing Marginal Utility
DMV = Diminishing Marginal Value
SE = Substitution Effect
IE = Income Effect
I = in International chapter (end of text)
G = in General (early in book) material
MI* = International material early in text rather than later in the book
LW = Losers and Winners mentioned (only)
NL = Net Loss (only, rather than DWL)
DWL = Dead Weight Loss

Markets and Price Determination

Beginning with the TUCE microeconomic classification of Markets and Price Determination, we note that understanding markets (supply, demand, equilibrium) may be the most critical microfoundation for macroeconomics. This rather broad classification, however, contains a wealth of subtopics that are covered quite differently across the texts in our sample. In eight of the surveyed textbooks, the supply and demand model is the only microeconomic topic included beyond scarcity, opportunity cost, and choice. All 20 macroeconomic textbooks devote time and effort to explicating the factors of supply and demand – and it is not surprising that in all cases, the model is elaborated succinctly in one or two chapters. Furthermore, market structure is often confined to the case of perfect competition. In seven out of 20 textbooks (Table 2, noted by "C, I" for both competitive and imperfect markets)., there is a single statement to the effect that the study of perfect competition provides useful insights into real-life markets despite these being rarely characterized by perfect competition (Karlan and Morduch 2021). In another four textbooks, the authors emphasize that the price mechanism presumes a competitive market, but without any discussion of imperfect markets ("C" for only mention of perfect competition without any reference to other market structures in Table 2). In the remaining nine textbooks, the authors explain the law of demand, the law of supply, and equilibrium without any reference to market structures ("No" means no distinction between market structures in Table 2, Supply and Demand column).

Although the TUCE lists utility as an important subcomponent of Markets and Price Determination, it is all but excluded from macroeconomic textbooks. This seems unfortunate as the concept of diminishing marginal utility is one of the pillars of mainstream microeconomics, grounding explanations of the law of demand. Since demand is what people are willing and able to buy at all possible prices, a traditional explanation of the law of demand suggests three major arguments: the diminishing marginal utility, the substitution effect, and the income effect. In microeconomics, the chapter on consumer behavior usually provides an analysis of the three

phenomena based on the utility function and the budget constraint. In macro textbooks, only Case and Fair (2021) and McConnell, Brue and Flynn (2021) make any reference to marginal utility in their presentation of the law of demand (Table 2, "DMU"). In four books, the authors use the term diminishing marginal benefit (or value) to address the motivation of the law of demand ("DMB" in Table 2). In five books, the only reason for the negative slope of the demand line is the change in the relative price "RP" which appears to be hinting at the substitution effect. In four books, the authors refer to two out of the three major arguments and only McConnell, Brue, and Flynn (2021) explain the law of demand on the basis of all three – the substitution effect, the income effect, and the diminishing marginal utility. In six books, the law of demand is defined without any explanation as to why people buy more when the price goes down and buy less when it goes up (this is noted with a "No" in Table 2 in the Law of Demand and Supply column).

Using the concept of diminishing marginal returns is one common way to generate an understanding of the law of supply in microeconomics. Students who take only macroeconomics will have limited exposure to production decision-making. In all 20 of our surveyed textbooks, the idea of diminishing marginal returns is used to build the macroeconomic production function in the chapter on economic growth. This is done without any connection to the Law of Supply. Furthermore, the Law of Supply, itself, is generally developed in macroeconomic textbooks separate from profit considerations. In twelve textbooks, profits are excluded entirely, though even a very compact introduction to profit as a motive for production would be useful in explaining the difference between the change in supply and the change in quantity supplied. Similarly, though elasticity is another important tool of the price determination only five textbooks cover elasticities; other authors opt not to introduce the concept at all.

Consumer and producer surplus are defined and discussed in thirteen of the 20 textbooks in our survey (fourth column under Market and Price Determination in Table 2). Sexton (2020) and Stevenson and Wolfers (2020) measure consumer surplus for an individual using an individual's demand curve before explaining the idea at the market level. The other textbooks only explain consumer surplus in the context of market demand. Price discrimination, when different customers pay different prices for the same product, or when a customer pays a different price for larger quantities than for smaller quantities, is not addressed in macroeconomic textbooks. Consumer and producer surplus, along with deadweight loss, can be applied to outcomes of government intervention in markets applicable in macroeconomics including situations of price ceilings/floors, excise taxes, tariffs, and quotas. Eighteen textbooks cover some aspect of price floors or price ceilings; in twelve, however, the negative impact of government restrictions is addressed without reference to deadweight loss. Furthermore, although tax incidence can probably be best explained using the concept of elasticity, only four textbooks do so; eleven (including six that list consumer/producer surplus in the index) do not raise the question of tax incidence. Atypical of the group, Coppock and Mateer (2021) devote fifteen pages of their macroeconomic textbook to tax incidence, which includes analysis of deadweight loss and elasticity.

Theories of the Firm

After the problem of scarcity and the three fundamental questions of what, how, and for whom to produce, there remains the idea of how each society will organize its economic system. U.S. macroeconomic texts generally confine themselves to the capitalist system as based on the profit motive and entrepreneurial ability, though rarely do they make this explicit. In eight books

out of the 20, profit is mentioned in the supply and demand chapter, but that mention is often brief and without further elaboration. The most common context for the definition of profit (in 16 books) is the circular flow model and/or the description of the four major real resources and the four corresponding monetary incomes. In nine out of these 16 textbooks, there is a statement regarding the role of an entrepreneur in putting other factors of production together but often without analysis of profit as the major driving force of the market economy. The description of entrepreneurship is often compressed into one or two short paragraphs. For example, classification of sole proprietorships, partnerships, and corporations in the 16 texts is not followed by a discussion of profit. The authors of the remaining four books we survey do not list 'profit' in the index, though we are able to find casual mentions in the introductory chapters and the chapters on national income accounting. Only one of the four books talks about the role of the entrepreneur in a market economy (O'Sullivan, Sheffrin and Perez 2020). See Table 2, second column under the heading of Theory of the Firm; the first letter indicates the existence of profit in the index and the second letter indicates mention of entrepreneurship. For example, "Y, N" would mean there is a mention of profit, but no mention of the role of the entrepreneurship.

Turning to other important subcategories under the TUCE classification of Theory of the Firm, only Stevenson and Wolfers (2020) make profit and profit maximization a focal point in the explanation of not only the law of supply but also of the marginal principle, in general. They illustrate profit maximization in the labor market decision with a computation of total revenues, total costs, marginal revenues, marginal costs, and profits in a table traditional for microeconomics. Acemoglu, Laibson, and List (2018), Case and Fair (2020), McConnell, Brue, and Flynn (2021), and McEachern (2017) emphasize profit maximization (in addition to profit) as a goal. However, the analysis runs to one or two sentences without much explication of the mechanism by which to achieve it. In six books listed in the MR=MC column of Table 2, the general marginal principle is illustrated with the examples of various types of business practices, but without the direct reference to profit (Case and Fair 2020; Hubbard and O'Brien 2021; Mankiw 2021; McEachern 2017; O' Sullivan, Sheffrin, and Perez 2020; and Sexton 2020). One popular example is when airlines sell a discount ticket that does not cover the average cost of flying, so long as it covers the marginal cost of the additional passenger (Case and Fair 2020; Mankiw 2021; and Sexton 2020). However, while the marginal cost is defined in almost every textbook, either in connection to the law of supply or to the marginal principle in general, this is not the case when it comes to average costs, which is treated more casually, and often without the distinction between fixed and variable costs.

As we noted previously, imperfect markets are not treated in chapters on supply and demand in 18 out of 20 books. Monopoly is mentioned in 12 books as an example of market failure but without discussion of the mechanism of price determination. The concept of elasticity and the availability of substitutions clearly demonstrate ideas of market power. Yet, of the five textbooks that cover elasticity, none connect elasticity to market power. Overall, the microeconomic category of Theories of the Firm is the least treated in macroeconomic textbooks.

Factor Markets

Bowles and Carlin (2020) suggest that microeconomics can be integrated into macroeconomics most easily in discussions regarding labor and credit markets. Although Factor Markets are important in both micro and macroeconomics, most mainstream textbooks diverge over which of the factors receives the most play. Microeconomics tends to give significant space to the determination of wages; interest rates receive extensive treatment in macroeconomics. The

concept of rents typically emerges only in the context of the circular flow model and in national income accounting for GDP calculation. It would be fair to note that in microeconomics, rent is also not deeply analyzed. We argue that all students need to understand that markets exist for labor, land, and capital – their prices determined by markets. Such analysis of factor markets underpins discussions of income distribution. Yet, textbooks avoid direct explications of the marginal productivity theory of distribution – the closest is connecting the marginal productivity of labor to the real wage (Acemoglu, Laibson, and List 2018; Bade and Parkin 2021; and O'Sullivan, Sheffrin, and Perez 2020). The inefficiency of excise or sale taxes and/or tax incidence is addressed only in 9 out of the 20 textbooks (Tax Incidence column of Table 2 under Factor Markets).

The TUCE considers income distribution and redistribution separately. In principles of microeconomics textbooks, income distribution, inequality, poverty, discrimination, and the role of the government to correct such market outcomes are often bundled together in the same chapter. In macroeconomics, however, these concepts are scattered among several chapters. Since it is impossible to teach national income accounting, business cycles, unemployment, fiscal policy, and debt and deficit structure and financing without at least a brief description of the progressive tax system, transfer payments, unemployment compensation, and other entitlement programs, all such concepts appear readily in the text of the surveyed books. However, if students were assigned to study income distribution as a concept, they would need to read through the entire book to put the various pieces of the puzzle together. Only Stevenson and Wolfers (2020) dedicate a chapter to "Inequality, Social Insurance, and Redistribution." How the government can alter income distribution is briefly articulated in eight textbooks; the most detailed treatment occurs in Stevenson and Wolfers (2020) in the context of the trade-off between equity and efficiency and a caution regarding the potential degradation of economic outcomes with income redistribution. Sexton (2020, 55) similarly notes "the degree-of-equality argument can generate some sharp disagreements." About half of the textbooks we survey exclude mention of redistribution as a function of government.

Bowles and Carlin (2020) report that the problems of inequality and poverty animate much of student interest in economics globally – being two of "the most pressing problems economists should address." [8] As an indicator of income inequality, we examined the textbooks for use of the Lorenz curve and the Gini coefficient in the context of poverty and/or discrimination - all the textbook authors leave the instruments for measuring inequality to microeconomics. Poverty as a subject is excluded from Baumol and Blinder (2020), Hubbard and O'Brien (2021), and Krugman and Wells (2021). In the other 16 textbooks, poverty is defined in chapters on either economic growth or development economics (e.g., Coppock and Mateer 2021, 359 - 360). Poverty in the United States is less popular; for example, the definition of the poverty line for the U.S. is not found in any of our surveyed macroeconomic textbooks, other than in Stevenson and Wolfers (2020).

Although 'discrimination' was rarely specifically identified when students were asked about "the most pressing problems" in contemporary economics, the prevalence of related words suggest that discrimination is, in fact, a serious concern for students (related words include immigration, fairness, refugee crisis, wage gap, equal pay, minimum wage, disparities, and social

[8] Over the past several years, CORE instructors have been asked to collect from their students one-word answers to the question "what is the most pressing problem economists today should be addressing?" Data imaging from more than 4400 students at 25 universities and in twelve countries are available at https://www.core-econ.org/escaping-from-imaginary-worlds-update/

injustice). Yet, only two macroeconomics textbooks in our survey list discrimination as a specific topic in the index (Boyes and Melvin 2016; Sexton 2020). For example, Sexton (2020) explains rent controls can encourage housing discrimination because landlords can indulge in their 'taste' for discrimination without any additional loss beyond that generated by the market controls alone. Consequently, they can choose to rent to people they deem more desirable. Fifteen textbooks address discrimination tangentially in tables on the unequal burdens of unemployment, but without much elaboration. McConnell, Brue, and Flynn (2021) and Taylor and Weerapana (2020) provide some specific examples of discrimination against women and/or minorities; the former, for example, comments on racial differences in unemployment rates in the United States. In three textbooks, differing unemployment rates by race are unconsidered (Bade and Parkin 2020; Cowen and Tabarrok 2018; Miller 2021).

Role of Government

The Economic Role of Government in a Market Economy includes such various topics as market failure, public choice, public goods, and externalities (the four columns under the heading of Role of Government in Table 2). Though treated as conceptually similar problems in microeconomics, this is not the case in macroeconomics. For example, of the 13 macroeconomic textbooks that cover both the concept of deadweight loss and market failure, only six connect the two. Stevenson and Wolfers (2020) is an outlier of the macroeconomic textbooks, including a detailed introduction to market failure, deadweight loss, and government action.

As noted, imperfect markets receive little discussion in macroeconomic textbook chapters on supply and demand. Monopoly and the role for government in preserving competition do get some treatment elsewhere in the textbooks. Twelve textbooks identify monopoly power as a market failure, and ten out of the 12 declare market regulation as one of the major functions of the government. The role of the government in promoting competition is generally mentioned without much insight into particular policy instruments. Contrary to microeconomics, where monopoly is the traditional example of the inefficiency of underproduction, only one of the surveyed macroeconomics textbooks deploy deadweight loss as a measure of such inefficiency. (Stevenson and Wolfers (2020).

It is perhaps surprising that Public Choice gets so little consideration in macroeconomic textbooks – in the contemporary literature, Public Choice has much to contribute to understanding deficit spending, the ratchet effect, policy decision-making, and other aspects of discretionary governmental spending. Yet, Public Choice goes unmentioned in fifteen macroeconomic textbooks; two others provide minimal cursory treatment (Boyes and Melvin 2016; Chiang 2020). McConnell, Brue, and Flynn (2021) and Cowen and Tabarrok (2018) both dedicate a chapter to the political economy of the government; in Sexton (2020) public choice theory is addressed as a section of a similarly oriented chapter. All three books emphasize the costs and benefits of government policies and the limitations of majority voting.

Among the 11 textbooks that include public goods in the index, seven define public goods, nonrivalry, and non-excludability in one or two paragraphs in a larger list of market failures. In another four textbooks, there is a more detailed description of the characteristics of the pure private and pure public goods and the free-rider problem. Only McConnell, Brue, and Flynn (2021) offer the traditional microeconomic graph of market demand for public goods, which is based on the vertical summation of individual demand lines as opposed to the horizontal summation for the private goods. Descriptions in other books leave some room for misunderstanding when authors claim only that it is not profitable for the private companies to

produce public goods. We do not find a clear distinction between the provision of public goods and the production of public goods; publicly produced private goods are mentioned in one textbook (Miller 2021). In the other nine textbooks, public goods go unmentioned (the Public Goods column of Table 2). In three out of these 9 texts, the government is added to the circular flow diagram, however, the flows between the government and the private sector include taxes and money transfers without reference to public goods. Those books we surveyed that employ the formula $C + I + G + (X – IM)$ do not distinguish between government purchases of private goods, such as office supplies, from the provision of public goods, such as national parks. As a result, there is no discussion in the context of leakages and injections in national income accounting of the role of government as an intermediary between taxpayers and the private companies contracted to implement public projects.

The treatment of externalities in macro textbooks is similar to that of public goods. Out of 20 textbooks, a definition and a very brief description can be found in 11 textbooks typically in the chapter or section devoted to market failures. Acemoglu, Laibson, and List (2018), Chiang (2020), and Stevenson and Wofers, (2020), define externalities without direct reference to the role of the government regulation in internalizing them. A relatively substantial number of pages are devoted to externalities and government policies in four books, including discussion of Pigouvian taxes and subsidies and regulation. The problem of unclear property rights as a cause of externality is covered in three; only McConnell, Brue, and Flynn (2018) and Sexton (2020) consider transferable pollution permits, and only Sexton (2020) refers to the Coase Theorem. Five books do not raise the question of externalities at all (Externality column, Table 2). Although issues of sustainability and climate change have become increasingly important to students (Bowles and Carlin 2020), they have not yet found their way into most macroeconomic textbooks (Samuelson 2019).

International Economics

Since Adam Smith's *Wealth of Nations* (1776), International Economics has been a focus of study. Both contemporary microeconomics and macroeconomics textbooks give the topic notable coverage, though usually with a somewhat different focus. In macroeconomic textbooks, the most common discussions are issues of exchange rates, barriers to trade, gains from trade, and the notions of comparative and absolute advantage. Most texts allocate a chapter to international economics at the end of the book – it is for the most part treated separately from the 'principles of macroeconomics.' Further, by virtue of appearing last, international economics is less likely to receive coverage if time is short – as a sidebar, having this material at the end of the book implies it is less important than earlier material. Most commonly are the concepts of absolute and comparative advantage. Out of 20 textbooks, 12 discuss it twice: first in the context of the opportunity costs and the production possibilities frontier and a second time in the chapter on international trade. In three textbooks, this concept is introduced as a general principle only and completely omitted from the international material (Cowen and Tabarrok 2018; Karlan and Morduch 2021; and Mankiw 2021). Three books positioned all of the material on international economics at the front, making it a part of their general introduction to economics (see Table 2, "MI"). In only two textbooks does the concept of absolute and comparative advantage appear for the first time in the final chapters (Table 2, where "I" indicates the only mention for the concept).

Most textbooks relegate the topic of exchange rates solely to the chapter on international trade. However, in five textbooks, the exchange rate is introduced either as an example of a real-world supply-and-demand application or as a facet of national income accounting. While trade

barriers are discussed in 19 of the 20 texts in our survey, different authors treat the outcome of tariffs and quotas differently. For example, when examining the losses to limiting trade opportunities, some texts offer a full analysis using deadweight loss (8 texts, see Table 2, the "DWL" designator). Four textbooks focus on net loss ("NL" Table 2), and seven remaining books consider 'winners and losers' ("LW") without drawing a general conclusion about the inefficiency of trade restrictions.

Macro Bits Versus Micro Splits

The majority of microeconomics and macroeconomics textbooks – including all those in our sample – can be characterized as text splits, where a split is one part of a two-text set drawn from an existing single volume principles of economics textbook. Locating the corresponding microeconomics split for each of our 20 macroeconomics textbooks (by name, publisher, and author), confirms that, at the principles-level, there does not appear to be a division of labor by authors. No one specializes in either macro or micro as is common at the intermediate level. Another relevant point is that even though there exist consistent sets of macro and micro splits, students who take both classes are not guaranteed to have the matching halves of a whole textbook, unless perhaps, text decisions are made jointly across the department.

That said, we clearly see the pattern that individual course textbooks are designed as if micro and macro are two parts of the same book. The introductory chapters which cover basic principles and the economic way of thinking can generally be found in both the microeconomic and macroeconomic editions (see Table 3). In 16 out of the 20 cases we sample, the introductory chapters in both splits are identical. In the other four cases, the micro textbooks include one or two extra chapters relating fundamental principles to microeconomic material in greater depth. We have not found a single case where a macro split has more chapters in the introduction than its matching micro split. There is also a consensus among the authors regarding the role of microeconomic foundations for macroeconomics: "Don't think about micro- and macroeconomics as distant halves of economics. Rather, think about macroeconomics as being built upon your understanding of microeconomics" (Stevenson and Wolfers 2020, 216).

A Modest Proposal

As each author or group of authors must decide for themselves the optimal amount of microfoundations for macroeconomics – and so must each instructor. As faculty face greater and greater demands on their time – publishing, committee work, larger classes, pandemic adjustments – it is easy to revert to the same textbook one has used in the past. We hope this detailed survey of macroeconomic textbooks, as filtered through the lens of the microeconomic topics included, provides a way to compare options which are rooted in a traditional or mainstream approach. For faculty that like to use textbook supplements such as online homework or quiz systems or who rely on test banks, choosing a book to match one's own interests can make the textbook and its supplements more useful for students. The better matching of books to interests can bridge some of this difficulty. We also hope that consideration of the textbook topics provides an impetus to reflection on the course structure and content chosen by instructors.

Our survey persuades us that there is room to improve the microeconomic content in macroeconomic textbooks without substantial additional costs and without significant tradeoff of macroeconomic material. We identify a short list of microfoundations that could be added to a macroeconomic principles course without significant commitment of time or effort by

instructors. We match these concepts to the macroeconomics textbooks we identify as having relatively better coverage of the topic. Last, we suggest where in a typical macroeconomic syllabus the topic could be incorporated (Table 3). Based on our own teaching experience, the recommended adjustments to the syllabus may require approximately one class period to elaborate on market and government failures in more detail as a way to bridge the introductory part of the course to national income accounting. The other microeconomic concepts can find homes in the introductory week and throughout the course, as indicated in Table 3.

Table 3. Recommendations for Microfoundations

Topics	Recommendations	Best Practice	Topic in the Syllabus
Markets and Price Determination			
Supply & Demand	Include a short description of different market structures.	Karlan & Morduch	Supply and Demand
Law of Demand	Explain the law of demand on the basis of all three major arguments – the substitution effect, the income effect, and the diminishing marginal utility.	McConnel, Brue & Flynn	Supply and Demand
Elasticity	Explain elasticity and apply to analyze tax incidence and market power.	Coppock & Mateer Sexton	Supply and Demand
Consumer/Producer Surplus	Use the tools of consumer and producer surplus and deadweight loss to measure market inefficiencies.	Sexton Stevenson & Wolfers	Supply and Demand
Price Ceilings and Floors	Illustrate the negative impact of government restrictions using the concept of deadweight loss.	Sexton	Supply and Demand
Theory of the Firm			
Profit Motive in Supply	Stress from the outset that supply decisions depend on profit potential.	Case & Fair	The Core Principles of Economics.
Profit Listed in the Index/ Role of the Entrepreneur	Emphasize that an entrepreneur's goal to maximize profit is a driving force of the market economy as opposed to command economy.	McConnel, Brue & Flynn	The Core Principles of Economics.
MR = MC Rule	Make profit and profit maximization (*MR = MC* rule) a focal point in the explanation	Acemoglu, Laibson, & List	The Core Principles of Economics.

	of the marginal principle in general (*MB = MC* rule).	Stevenson & Wolfers	
Market Power/Regulation	Illustrate that the inefficiency of monopoly with the deadweight loss that results from underproduction.	Baumol & Blinder Chiang O'Sullivan, Sheffrin & Perez	Supply and Demand
Factor Markets			
Poverty	Extend the discussion of the equity-efficiency tradeoff by showing how inequality is measured and providing some basic data about the number of Americans living below the poverty line.	Stevenson & Wolfers	The Core Principles of Economics; Economic Growth
Unequal Burden of Unemployment	Address discrimination when discussing unemployment and provide data on the differences in unemployment rates by race and gender.	Boyes & Melvin Taylor & Weerapana	Business Cycles, Unemployment, and Inflation
Tax Incidence	Use elasticity to illustrate tax incidence, including a discussion of the elasticity of labor supply versus capital supply.	Coppock & Mateer	Supply and Demand; Fiscal Policy
Redistribution	Recognize that regardless of political leanings, redistribution is now one of the major functions of government; continue the discussion of the equity-efficiency tradeoff.	Stevenson & Wolfers	Fiscal Policy
Role of Government			
Market Failure	Address the problems of market failure and of government failure when discussing the efficiency of markets.	Stevenson/Wolfers	The Core Principles of Economics; Market Failures.
Public Choice	Introduce the pros and cons of the mechanism of democratic decision-making; discuss why government failure might occur in budgeting and policy-decision making.	Cowen & Tabarrok McConnell, Brue & Flynn	The Core Principles of Economics; Market Failures;

Public Goods	Make a clear distinction between the provision and the production of public goods versus private goods; consider the case of publicly provided private goods.	McConnell, Brue & Flynn, Miller	Market Failures; Supply and Demand; National Income Accounting
Externalities	Explain the 'missing market" interpretation of externalities and the role of the government in internalizing externalities.	Sexton	Market Failures; Supply and Demand
International Trade			
Comparative Advantage	This concept is well explained in most textbooks.	Hubbard & O'Brien Krugman & Wells Stevenson & Wolfers	The Core Principles of Economics; International Trade
Exchange Rates	Introduce the exchange rate in the foundations chapter or use the price of a foreign currency as an example of the real-world supply-and-demand application, emphasizing that currency is just another good.	McEachern Colander	Supply and Demand; The Aggregate Expenditures Model
Barriers to Trade	Use deadweight loss in the assessment of trade barriers to draw a general conclusion about the inefficiency of trade restrictions.	Mankiw	Supply and Demand; Aggregate Demand and Aggregate Supply

Our recommendations can be adopted and adapted by instructors; we also hope they will spur authors, publishers, and book reviewers to think seriously about the microfoundations that underlie many of the tools and concepts of modern macroeconomics. Students need to understand these fundamental microfoundations to be able to see the bigger or overarching picture that economics paints of societal functioning.[9]

To create a more holistic vision of the economic approach, we suggest the following as a set of best practices. We stress that our recommendations target precision in presentation of

[9] We disagree with Kagundu and Ross's (2015, 20) description of their unconventional "Global Economy" introductory course is illustrative. The first part of the course is "a collection of random topics…These concepts include definitions of economics, marginal analysis, opportunity cost, supply and demand, gross domestic product (GDP), inflation, and the production possibilities frontier (PPF). Each of these topics is independent of the others and can be presented in any order."

microeconomic topics, repeated application of core concepts, and brief 'big picture' discussions rather than the inclusion of significant additional material, which we realize would impose opportunity costs on both authors and instructors by diverting time and effort from critical macroeconomic content. We understand that the inclusion of these topics does not guarantee coverage in the classroom by instructors. However, including these microfoundations opens an opportunity for instructors to discuss the topics and provides students with a more complete resource.

a). Since the entrepreneur has the leading role putting other factors of production together, profit maximization should be seen as a core concept in the introduction to economics and the driving force of the market economy. Profit maximization as a goal of an entrepreneur (and the *MR = MC* rule) can be generally introduced in the section on the foundations of economics.

b). The demand-and-supply chapter should include a definition of perfectly competitive markets as well as imperfect markets. The major characteristics of each type of market structure should be discussed, including the number of producers, the severity of the barriers to entry, and the availability of the substitutes. Students need to understand that the supply-and-demand model presumes competition with all the participants being price-takers. Other market structures may see prices determined by different mechanisms.

c). The explanation of the law of demand should be rooted in (i) the concept of diminishing marginal utility, (ii) the substitution effect, and (iii) the income effect. What consumers are willing and able to buy at each possible price depends on their utility function and the budget constraint. Not using all three arguments in introducing the law of demand, would be equivalent to considering utility function without the budget constraint or other way around. The law of supply should be motivated by profit maximization. Since profit is the difference between revenues and costs, supply is likely to react to changes in revenues, which depend on the price of the product, and changes in production costs, which depend on many factors. The supply decision is just one of several decisions that firms make to maximize profit (Case and Fair 2020). Understanding profit maximization is very helpful in explaining the difference between the change in supply and the change in quantity supplied.

d). Elasticity is a fundamental concept in economics that underpins changes in the quantity demanded, the ability of suppliers to respond to market shocks, market power, tax incidence, and the impact of governmental interventions in the economy. For students taking only a single economics principles course, we argue some exposure to elasticity is fundamental to the economic way of thinking. The discussion need not be as detailed as it would be in microeconomics and could be a part of the general supply and demand discussion with an emphasis on the relative strength of the market players.

e). The concepts of consumer and producer surplus and deadweight loss are also essential microeconomic tools, which have important implications for macroeconomics. Considerations of the efficiency of the market and of government policies should not be elective in macroeconomic textbooks if one goal of the course is to educate voters on policies such as price ceilings and floors, raising taxes, anti-trust, and trade restrictions.

f). We find treatment of market failure and of evaluating government policies is scattershot at best in principles of macroeconomics textbooks. Stevenson and Wolfers (2020) provide an exception, with a thoughtful introduction of market failure, deadweight loss, and government failure. Given the importance of fiscal policy for standards of living – beyond the smoothing of business cycles – we suggest textbooks give more room to market failures,

including the implications of and policy recommendations for situations of public goods, externalities, and market power.

g). Much like Samuelson (2019) and Bowles and Carlin (2020), we find the problems of income inequality, poverty, and discrimination are under considered – sometimes woefully so – in introductory macroeconomics textbooks despite being leading topics of student interest. We suggest the simplest way to address income distribution is to extend the segment in the fundamentals chapter which distinguishes between efficiency and equity. We also suggest to textbooks and instructors include measures of inequality and provide some basic data about the number of Americans living below the poverty line. Problems of discrimination and redistribution could be integrated throughout the textbook – in chapters on unemployment, economic growth, and fiscal policy. The distribution of goods and services (and/or their redistributions) should be treated as a fundamental macroeconomic function of government along with the allocation of resources and the stabilization of the economy.

h). Despite an increasingly globalized economy, many students lack even a rudimentary understanding of the functioning of exchange rates. The idea that exchange rates are ancillary is reinforced by covering them solely in a late textbook chapter on international trade. Instead, we argue to include discussion of exchange rates throughout the course and textbook, including in sections on national income accounting, economic growth, and aggregate demand. A general introduction of exchange rates is possible as an example of the real-world application of supply and demand.

i). Last, returning to market inefficiencies – now in the context of international trade – we argue to treat trade barriers like the related governmental policy interventions of price floors and ceilings by using deadweight loss. More general examinations of the costs of barriers to trade, along the lines of 'winners' and 'losers,' complicate drawing conclusions consistent with the broader framework of economics.

Conclusions

The most common goal of introductory economics is to encourage students to develop an economic way of thinking so that they can understand the mechanisms of market economies. While business and economics majors will be exposed to both microeconomics and macroeconomics at the principles level, a substantial number of students will take only one principles-level economics course. For these students, specific economic lessons will likely fade. Ideally, however, they will retain some grasp of economic principles and understand the major functions of the market and government for the rest of their lives. This was the point of Paul Samuelson's famous claim – "I don't care who writes a nation's laws if I can write its economics textbooks" (Samuelson 1990, xi – x). Or, as Mankiw noted, "the typical student is not a future economist but is a future voter" (2016, 170). For those selecting only one course, the opportunity cost is high: you graduate either without knowing the golden rule of profit maximization or without a clue about what are fiscal and monetary policy.

In this paper, we argue that there is room for the judicious inclusion of fundamental microeconomics topics in an introductory macroeconomics course. We motivate our suggestion with a detailed examination of popular macroeconomics textbooks. These books differ notably in the amount and type of micro-foundational content. The absolute minimum number of microeconomic chapters in macroeconomics principles texts is two: scarcity and opportunity cost and supply and demand. Our goal is not to rank the textbooks, but to facilitate better matching of books with instructor interest. Having a text that covers the material that an instructor most wants

to highlight makes learning much easier – and is perhaps even more important as online, hyflex, and hybrid options become mainstays of undergraduate education. Certainly, we recognize that considerations such as length, writing level, and cost play a role in textbook decisions. However, we hope that the comparisons provided here prove useful to instructors choosing among the myriad of macroeconomic textbook options to find the one that most closely aligns with their course goals and objectives.

We do not mean to imply, however, that the choice of textbook can solve the entire problem of providing macroeconomics students with sufficient grounding to understand the big picture of economics. What we hope is that our detailed consideration of the textbook coverage of microfoundations will encourage instructors to reflect upon their own course structure and content coverage and what they feel is most important to convey to students. To this end, we make a modest proposal for how and where macroeconomics instructors could include some microeconomic content with low opportunity cost and explain how these concepts can deepen students understanding of macroeconomic concepts.

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Appendix A. Micro Content in the Opening Sections of Macroeconomics Textbooks

Authors	Macroeconomics	Microeconomics
Acemoglu/ Laibson/List	1 The Principles and Practice of Economics 2 Economic Methods and Economic Questions 3 Optimization: Doing the Best You Can 4 Demand, Supply, and Equilibrium	1 The Principles and Practice of Economics 2 Economic Methods and Economic Questions 3 Optimization: Doing the Best You Can 4 Demand, Supply, and Equilibrium
Bade/Parkin	1 Getting Started 2 The U.S. and Global Economies 3 The Economic Problem 4 Demand and Supply	1 Getting Started 2 The U.S. and Global Economies 3 The Economic Problem 4 Demand and Supply
Baumol/ Blinder	1 What is Economics? 2 The Economy: Myth and Reality 3 The Fundamental Economic Problem: Scarcity and Choice 4 Supply and Demand: An Initial Look	1 What is Economics? 2 The Economy: Myth and Reality 3 The Fundamental Economic Problem: Scarcity and Choice 4 Supply and Demand: An Initial Look
Boyes/ Melvin	1 The Wealth of Nations: Ownership and Economic Freedom 2 Scarcity and Opportunity Costs 3 The Market and Price System 4 The Aggregate Economy	1 The Wealth of Nations: Ownership and Economic Freedom 2 Scarcity and Opportunity Costs 3 The Market and Price System 4 The Aggregate Economy
Case/Fair	1 The Scope and Method of Economics. 2 The Economic Problem: Scarcity and Choice. 3 Demand, Supply, and Market Equilibrium. 4 Demand and Supply Applications.	1 The Scope and Method of Economics. 2 The Economic Problem: Scarcity and Choice. 3 Demand, Supply, and Market Equilibrium. 4 Demand and Supply Applications. 5 Elasticity
Chiang	1 Exploring Economics. 2 Production, Economic Growth, and Trade. 3 Supply and Demand. 4 Markets and Government.	1 Exploring Economics. 2 Production, Economic Growth, and Trade. 3 Supply and Demand. 4 Markets and Government.

Colander	1 Economics and Economic Reasoning 2 The Production Possibilities Model, Trade, and Globalization 3 Economic Institutions 4 Supply and Demand 5 Using Supply and Demand	1 Economics and Economic Reasoning 2 The Production Possibilities Model, Trade, and Globalization 3 Economic Institutions 4 Supply and Demand 5 Using Supply and Demand
Coppock/ Mateer	1 Five Foundations of Economics 2 Model Building and Gains from Trade 3 The Market at Work: Supply and Demand. Appendix 3A: Changes in Both Demand and Supply 4 Market Outcomes and Tax Incidence Appendix 4A: Price Elasticity of Demand and Supply 5 Price Controls	1 Five Foundations of Economics 2 Model Building and Gains from Trade 3 The Market at Work: Supply and Demand. Appendix 3A: Changes in Both Demand and Supply 4 Elasticity 5 Market Outcomes and Tax Incidence 6 Price Controls
Cowen/ Tabarrok	1 The Big Ideas 2 The Power of Trade and Comparative Advantage 3 Supply and Demand 4 Equilibrium: How Supply and Demand Determine Prices 5 Price Ceilings and Floors	1 The Big Ideas 2 The Power of Trade and Comparative Advantage 3 Supply and Demand 4 Equilibrium: How Supply and Demand Determine Prices 5 Elasticity and Its Applications 6 Taxes and Subsidies 7 The Price System: Signals, Speculation, and Prediction 8 Price Ceilings and Floors
	1 Economics: Foundations and Models 2 Trade-offs, Comparative Advantage, and the Market System 3 Where Prices Come From: The Interaction of Demand and Supply 4 Economic Efficiency, Government Price Setting, and Taxes 5 The Economics of Health Care 6 Firms, the Stock Market, and Corporate Governance	1 Economics: Foundations and Models 2 Trade-offs, Comparative Advantage, and the Market System 3 Where Prices Come From: The Interaction of Demand and Supply 4 Economic Efficiency, Government Price Setting, and Taxes 5 Externalities, Environmental Policy, and Public Goods

Hubbard/ O'Brien	7 Comparative Advantage and the Gains from International Trade	6 Elasticity: The Responsiveness of Demand and Supply 7 The Economics of Health Care 8 Firms, the Stock Market, and Corporate Governance 9 Comparative Advantage and the Gains from International Trade
Karlan/ Morduch	1 Economics and Life 2 Specialization and Exchange 3 Markets 4 Elasticity 5 Efficiency 6 Government Intervention	1 Economics and Life 2 Specialization and Exchange 3 Markets 4 Elasticity 5 Efficiency 6 Government Intervention
Krugman/ Wells	1 First Principles 2 Economic Models: Trade-offs and Trade Appendix: Graphs in Economics 3 Supply and Demand 4 Price Controls and Quotas: Meddling with Markets 5 International Trade Appendix Consumer and Producer Surplus	1 First Principles 2 Economic Models: Trade-offs and Trade Appendix: Graphs in Economics 3 Supply and Demand 4 Consumer and Producer Surplus 5 Price Controls and Quotas: Meddling with Markets 6 Elasticity 8 International Trade
Mankiw	1 Ten Principles of Economics 2 Thinking Like an Economist 3 Interdependence and the Gains from Trade 4 The Market Forces of Supply and Demand 5 Elasticity and Its Application 6 Supply, Demand, and Government Policies 7 Consumers, Producers, and the Efficiency of Markets 8 Application: The Costs of Taxation 9. Application: International Trade.	1 Ten Principles of Economics 2 Thinking Like an Economist 3 Interdependence and the Gains from Trade 4 The Market Forces of Supply and Demand 5 Elasticity and Its Application 6 Supply, Demand, and Government Policies 7 Consumers, Producers, and the Efficiency of Markets 8 Application: The Costs of Taxation 9. Application: International Trade.
	1. Limits, Alternatives, and Choices 2. The Market System and the Circular Flow 3. Demand, Supply, and Market	1. Limits, Alternatives, and Choices 2. The Market System and the Circular Flow 3. Demand, Supply, and Market

McConnell/ Brue/Flynn	Equilibrium 4. Market Failures Caused by Externalities & Asymmetric Information 5. Public Goods, Public Choice, and Government Failure	Equilibrium 4. Market Failures Caused by Externalities & Asymmetric Information 5. Public Goods, Public Choice, and Government Failure
McEachern	1 The Art and Science of Economic Analysis. 2 Economic Tools and Economic Systems 3 Economic Decision Makers. 4 Demand and Supply Analysis.	1 The Art and Science of Economic Analysis. 2 Economic Tools and Economic Systems 3 Economic Decision Makers. 4 Demand and Supply Analysis.
Miller	1 The Nature of Economics 2 Scarcity and the World of Trade-Offs 3 Demand and Supply 4 Extensions of Demand and Supply Analysis 5 Public Spending and Public Choice 6 Funding the Public Sector	1 The Nature of Economics 2 Scarcity and the World of Trade-Offs 3 Demand and Supply 4 Extensions of Demand and Supply Analysis 5 Public Spending and Public Choice 6 Funding the Public Sector
O'Sullivan/ Sheffrin/ Perez	1 Introduction: What is Economics? 2 Key Principles of Economics 3 Exchange and Markets 4 Demand, Supply, and Market Equilibrium	1 Introduction: What is Economics? 2 Key Principles of Economics 3 Exchange and Markets 4 Demand, Supply, and Market Equilibrium
Sexton	1 The Role and Method of Economics 2 Economics: Eight Powerful Ideas 3 Scarcity, Trade-Offs, and Production Possibilities 4 Demand, Supply, and Market Equilibrium 5 Markets in Motion and Price Controls 6 Elasticities 7 Market Efficiency and Welfare 8 Market Failure 9 Public Finance and Public Choice	1 The Role and Method of Economics 2 Economics: Eight Powerful Ideas 3 Scarcity, Trade-Offs, and Production Possibilities 4 Demand, Supply, and Market Equilibrium 5 Markets in Motion and Price Controls 6 Elasticities 7 Market Efficiency and Welfare 8 Market Failure 9 Public Finance and Public Choice
Stevenson/ Wolfers	1 The Core Principles of Economics 2 Demand: Thinking Like a Buyer	1 The Core Principles of Economics 2 Demand: Thinking Like a Buyer

	3 Supply: Thinking Like a Seller 4 Where Supply Meets Demand 5 Welfare and Efficiency 6 Gains from Trade 7 International Trade 8 Inequality, Social Insurance and Redistribution	3 Supply: Thinking Like a Seller 4 Where Supply Meets Demand PART II Analyzing Markets 5 Elasticity: Measuring Responsiveness 6 When Governments Intervene in Markets 7 Welfare and Efficiency 8 Gains from Trade 9 International Trade 13 Inequality, Social Insurance and Redistribution
Taylor/ Weerapana	1 The Central Idea 2 Observing and Explaining the Economy 3 The Supply and Demand Model 4 Subtleties of the Supply and Demand Model	1 The Central Idea 2 Observing and Explaining the Economy 3 The Supply and Demand Model 4 Subtleties of the Supply and Demand Model