

THE MANAGERIAL ECONOMICS COURSE: PEDAGOGICAL CHOICES AND TEXTBOOK OPTIONS

D. Eric Schansberg, Indiana University Southeast, USA

ABSTRACT

What are the purposes of a Managerial Economics (ME) course in undergraduate and graduate business programs? How do those purposes compare and contrast to those in Intermediate Microeconomic Theory (IMT)? Related: How well is a ME course served by a conventional IMT approach? What ME texts are available and how do they compare? The primary purposes of this paper are to wrestle with these questions and to describe the substance and style of the 14 ME texts on the market as of 2024—with special attention to the extent of "technical coverage" (math and analytics); the scope of business, market, and public policy applications; the ancillary materials available; and the authors' discussion of topics ranging from Behavioral, Labor, and International economics to the role of information and political economy.¹

Keywords: Managerial Economics, Intermediate Microeconomic Theory, Pedagogy, MBA, Textbook.

INTRODUCTION

The study of economics in college typically starts with a two-course sequence in the “principles” of economics²—introductory courses in Macroeconomics and Microeconomics.³ From there, a subset of students take upper-level econ courses as required for econ majors and those in other business fields. These upper-level courses include second “intermediate” theory courses in Micro and Macro—sometimes as pre-requisites for all other upper-level courses.

In many business schools, the Intermediate Microeconomic Theory (IMT) course is replaced by a Managerial Economics (ME) course—with greater emphasis on business applications. In most Masters-level business programs, schools use a version of the same ME course. Even though the material is similar (or even equivalent), the Masters-level coverage can be more rigorous given the level and maturity of the students—and classroom discussion can be supplemented by the relevant business experience of the students. For both sets of business students, this is likely to be their final course in Econ.

What are the purposes of a ME course in undergraduate and graduate business programs? Broadly, the top learning objective would seem to be bringing upper-level undergraduate economic principles to bear on business decisions and strategy. Anderson and Muraoka (1990) define the ME course as an applied IMT course with the objective “to learn to apply microeconomic principles to business decision making.” In particular, the course promises to speak to the ways in which economics is relevant to *management* decisions. This begs some questions of interest: How do these purposes compare and contrast to those of IMT courses?⁴ How well is a ME course served by a conventional IMT approach? To what extent should a ME course cover the technical aspects of Micro Theory, public policy applications, and business applications?

An important and related question: What ME texts are available and how do they compare? As such, a primary purpose of this paper is to describe the substance and style of the 14 ME texts on the market as of 2024—the scope of business, market, and public policy applications; the authors' discussion of topics ranging from Behavioral, Labor, and International Economics to the role of information and political economy; and special attention to the extent of "technical coverage" (math, graphs, and analytics).

In this endeavor, I also want to help refresh a sparse and dated literature. Anderson and Muraoka (1990) survey 10 texts from the field of 30 ME books that were available at the time. (Two of the authors: McGuigan and Maurice still have texts in the market.) The consolidation of the market for book publishers seems to have resulted in a consolidation of (ME) texts. Acs and Gerlowski (1999) describe the available ME textbooks that emphasize a combination of decision-making (decision sciences) with micro (including the Brickley text still on the market) in contrast to standard texts (including the Salvatore and Samuelson texts still on the market). Wai (forthcoming) describes topical coverage of the seven most popular ME books as determined by available bookstore information at a subset of AACSB schools.⁵

IMT vs. ME Course Goals

An IMT course is meant to build on knowledge and skills developed in the Principles courses. Depending on the curriculum map, IMT can be a pre-requisite for all other upper-level "application" courses. In such cases, it ideally provides most of the tools needed to understand the material in the later courses. Or IMT can be just another upper-level class, with less need to develop theoretical underpinnings and skill formation, which can allow it to devote more attention to policy and business applications. In a handful of cases, undergraduate econ studies are a springboard to graduate school in econ for motivated and capable students. If so, IMT ideally prepares students for the mathematical rigors of graduate study—for econ in general and microeconomics in particular.

By way of contrast, a ME course should be at least somewhat more applied and less technical. The course is rarely meant to prepare students for graduate studies in econ—or even, additional upper-level econ courses. Moreover, business students are generally not as adept as econ students with math and graphs. And so, a "softer" approach is probably warranted. In terms of retention and relevance, what material is most likely to be helpful to such students in their future endeavors? Applying basic economic principles to the workplace and "how to think like an economist" within business emerge as high-priority goals.

Whatever the ideal differences between these two courses, when economists are enlisted to teach ME, they will be tempted to use an IMT approach. Positively, it is how they have learned (and have likely taught) the material. Continuing along this path is the most natural road to take. Negatively, they may not have the relevant business experience and examples to convey in a business classroom.⁶ And moving away from the math of an IMT approach may make it more challenging to test and to grade.

Not surprisingly, the ME textbook market reflects these tensions. All ME texts use math, but the extent varies widely. All ME texts have business applications, but the emphasis varies here too. To generalize, there are two basic approaches. First, many ME books are IMT-like or what might be considered "IMT-lite". As with the traditional IMT course, these ME texts rely heavily on math—even using tools familiar to those in Masters-level and PhD-level econ courses. They often provide a chapter or more on econometrics—albeit relatively light and quick coverage. These authors include business applications, but these are at most a co-primary goal within the text coverage.

Second, other books dramatically reduce the math (compared to an IMT course) and discuss econometrics little if at all. They have a greater focus on business applications of economic concepts. As an example, the opening chapter of the McKenzie text has a discussion on “property rights”—with applications to the problems caused by absent property rights in the workplace and examples ranging from messy bathrooms and empty coffee pots to the managerial problems associated with failure to allocate blame and credit properly.

This math dilemma within ME books is also evident in the strategies for covering the math that *is* included—whether to put it in the primary text or more often, to relegate it to footnotes, appendices, and on-line coverage. As we’ll see below, this makes measuring the “mathiness” of a text even more challenging.

Comparing the ME Books on the Market

Five of the 14 ME books on the market are single-authored. Other books will be listed in the tables by their first author. These other nine books have two or three co-authors—with the exception of Froeb which has five.⁷

The books range in length from 302 (Froeb) to 816 (Blair) pages, with an average of 615. A considerable portion of the books is not devoted to text, but to introductory material (e.g., Preface, Table of Contents), concluding material (e.g., Index, Bibliography), and within-chapter material (e.g., Summary, Questions, Appendices). The number of pages devoted to *non-text* material ranges from 39 (Herzog) to 312 (Salvatore) pages, with an average of 177. The percentage of pages devoted to non-text material ranges from 12.4% (Herzog) to 45.4% (Png), with an average of 29.1%. As a result, the number of pages devoted to text ranges from 177 (Png) to 688 (Wilkinson), with an average of 438.

Table 1 BOOK LENGTH (TEXT AND NON-TEXT)						
	Total pages	Non-text (pgs)	% of Non-text	Text (pgs)	Chapters	Pgs/Ch
Baye	572	168	29.4	404	14	29
Blair	816	281	34.4	535	16	33
Brickley	780	229	29.4	551	21	26
Farnham	550	138	25.1	412	16	26
Froeb	302	115	38.1	187	24	8
Herzog	315	39	12.4	276	15	18
McGuigan	777	202	26	575	17	34
McKenzie	565	107	18.9	458	12	38
Perloff	713	183	25.7	530	17	31
Png	324	147	45.4	177	13	14
Salvatore	788	312	39.6	476	15	32
Samuelson	545	215	39.4	330	17	19
Thomas	748	217	29	531	16	33
Wilkinson	809	121	15	688	15	46

Averages	614.6	176.7	29.1	437.9	16.3	27.6
-----------------	-------	-------	------	-------	------	------

Table 1 lists those statistics for each book—as well as the metrics in this paragraph. The number of chapters ranges from 12 (McKenzie) to 24 (Froeb), with an average of 16.3. (The variance in this category is modest; Brickley is the only other book with more than 17.) As a result, the number of text pages per chapter varies widely. Froeb’s approach is quite different, with many short chapters and an average of eight pages per chapter. (The next closest is Png with 14.) Wilkinson has the longest chapters, by far, with an average of 46 pages. (The next closest is McKenzie with 38.) The overall average between the 14 books is 27.6 pages per chapter.

Tables describe the topical coverage in the books. There are a few challenges in describing this category. In some cases, it is difficult to reduce a chapter to a single topic or set of topics. (In a few cases, chapters seem to clearly divide into “halves” and these are noted with the appropriate fraction.) Some authors choose to suffuse coverage of certain types throughout the chapters. These are measured in terms of pages devoted to the topic and designated with a “p”. Sometimes, coverage is in an appendix or on-line; these are designated with “App” and “OL”.

All of the books have introductory material. (In this case, the number of pages is listed along with the number of chapters.) Perloff has the shortest approach here (nine pages), while McKenzie’s applied emphasis and a focus on the “economic way of thinking” leads to the longest treatment (two chapters with 85 pages). Froeb is also noteworthy here, given the applied nature of their book, with 54 pages (30% of their text) in five chapters (the only book with more than two intro chapters).

Not surprisingly, all ME books have coverage in the following five core areas of microeconomics: 1.) demand and supply, consumer theory, and elasticity; 2.) theory of the firm, production, and costs; 3.) market structure; 4.) game theory; and 5.) the role of government. The extent of this (universal) coverage is detailed in Table 2 and Table 3.

Table 2 UNIVERSAL TOPICAL COVERAGE							
	Total Chs	Intro	CT/D&S/Ed	PT/Prod/Cost	MktStruc	GameTheory	Govt
Wilkinson	15	1 (30)	2	2	3	1	1
Thomas	16	1 (37)	4	2	3+OL	1	1
Samuelson	17+1OL	1 (16)	1	4	3	1+OL	1
Salvatore	15	1 (39)	2	3	3	1	1
Png	13	1 (18)	3	2	2	1	2
Perloff	17	1 (9)	2	3	4	2	1
McKenzie	12+4OL	2 (85)	2.5	2	3	26p	1 + OL
McGuigan	17	2 (62)	1	4	4	1	1 + App
Herzog	15	2 (18)	3	2	3	6p	2
Froeb	24	5 (54)	2	1	5	3	1p
Farnham	16	1(14)	2	2	4	3p	2 + 5p

Brickley	21+2OL	1.5 (29)	2.5	10 + 2OL	3	1	1
Blair	16	1 (32)	1	3	4	1	1
Baye	14	1 (39)	3	3	4	1	1

Most books address: 1.) Information economics and risk/uncertainty; 2.) International economics⁸; and 3.) Analytics/Econometrics. Treatment of other notable topics is more sporadic: 4.) Behavioral economics; 5.) Finance and present value; 6.) Labor economics (beyond merely describing labor as a cost and an input to production); 7.) Macroeconomics; and 8.) Austrian and Public Choice⁹ economics. The extent of the inconsistent coverage is detailed in Table 3.

Mankiw (2020) argues that teachers and texts should be “ambassadors” for the mainstream in the profession. He cautions against niche approaches to texts, noting that such special interests can reduce to “idiosyncratic”. In contrast, Goolsbee (2019) argues that students will be more attracted to Economics if professors have some focus on topics of greater interest to them.

Table 3 SPORADIC TOPICAL COVERAGE								
	Info/R&U	INTL	ECMT	Behavioral	PV/Fin	Labor	Macro	PC/Austrian
Wilkinson	39p	1	2	1	1			
Thomas	1		3+2OL		4p+OL			
Samuelson	4	10p	2	1p				
Salvatore	1	43p	2	2p	1			
Png	2			Y				
Perloff	2	1	1	17p	4p			
McKenzie	0.5	6p + OL		2p + OL	4p	1	OL	8p
McGuigan	23p	1	2		1+App			
Herzog	1		1		1			
Froeb	3	1			1p	3p		
Farnham		1	1				5	
Brickley	10p	3p		2p		2		
Blair	3	10p	1		1			
Baye	1	4p	12p		6p	10p		

Sometimes, the focus of a text is easy to describe. Farnham is easily the strongest on Macroeconomics (ideal among these books if one is looking for a combined Macro/Micro approach).¹⁰ Brickley is probably the most inter-disciplinary. Thomas has the strongest combination of technical and applied questions in the back of each chapter. McKenzie and Thomas both put an emphasis on “the economic way of thinking”. (For Thomas, it is the first “pedagogical highlight” in the preface. For McKenzie, it is a key part of the introductory

material and suffused throughout the book.) Froeb, Blair, and Brickley have the most emphasis on decision-making. Salvatore is strongest on finance and international economics. Samuelson and Wilkinson are focused on information—while Wilkinson adds an emphasis on the role of technological advance. Baye has the best array of larger case studies; McGuigan has the longest list of smaller applications.⁹ Herzog provides a big emphasis on demand and supply, with little math otherwise. Png is also light on math, short, and relatively applied. And Perloff may be the most balanced of the set.

Of course, types of coverage can vary in a manner that is difficult to describe quantitatively. For example, McKenzie discusses government for a chapter (as is common), but is unique in covering the relevance of the Median Voter Model, Bureaucratic Models, and Interest Group theory—for both government and managerial decisions. Salvatore's book is suffused with international topics, but does not have a chapter devoted to it. Wilkinson's book takes the same approach with information, risk, and uncertainty—while Perloff does the same with behavioral economics.

Comparing the ME Books in Terms of “mathiness”

All that said, the most interesting (and perhaps most important) distinction is how the texts handle the more “technical” aspects of their discussions. In addition to professor preferences, there are other considerations here as well—most notably, the math abilities of students and the modality of the class.¹¹ Marcal et. al. (2009) observe that one-semester economic literacy courses are not as effective in preparing students for IMT courses. Tseng (2010) finds that class size in Principles of Micro is inversely related to performance in ME. Butler et. al. (2001) determine that a second semester of calculus improved IMT grades by one letter grade on average, controlling for sample selection bias. More broadly, program admission standards, course pre-requisites, what peers are teaching, the mean and variance of student competence, etc. may influence the ideal level of mathiness in a course—and thus, the ideal text.

Likewise, modality is important. Metzgar (2014) finds that hybrid is considerably less effective than face-to-face courses in ME. (Interestingly, all of their “sample questions” are mathematical.) As higher education moves increasingly toward hybrid and on-line delivery, professors may be wise to pursue a less-mathematical approach. And combining concerns about modality and preparation from earlier courses, with so many students taking college econ through dual credit in high school or on-line in college, the level of preparation in econ (and math) may be lower than anticipated (and decreasing).¹²

Some of the ME texts explicitly express the tension between too much and not enough math, recognizing different audiences and trying to appeal to as many students (and professors) as possible. Perloff talks about setting most of the math apart from the primary text—noting its importance, but expressing worry about it getting in the way. McGuigan is careful to tell us that “in all cases where calculus is employed, at least one other approach, such as graphical, algebraic, or tabular analysis is also presented.” Samuelson says “the logic of profit-maximizing behavior is more important than mathematical sophistication.” Therefore, they pursue a “quantitative approach...without drowning students in mathematics.” Thomas is most interesting here—noting that “a thorough foundation is required”, but also that it's important to be balanced and applied, pursuing “flexible mathematical rigor” with mathematical material set-apart. Thomas backs this up with arguably both the most mathematical *and* the most applied approach.

Others are more aggressive in claiming their place relatively high on the “mathiness” scale. Baye says that professors are “adopting this book to replace...texts laden with anecdotes but lacking the microeconomic tools needed.” Still, “users can include or exclude calculus-based material”. Salvatore is a bit less direct, allowing for coverage “with or without calculus”, but he notes the importance of “sound analytical foundations [rather than] overly theoretical or applied...[that] rest on weak theoretical foundations.” Wilkinson is similar: He uses “quantitative techniques only when they are relevant”, but also assumes that “students already have a basic knowledge of calculus and statistics.”

The other texts try to sell a “less mathematical than usual” approach. Farnham says his book is “not as detailed or theoretical as standard” texts with their “heavy emphasis on...linear programming, multiple regression analysis, and other quantitative tools”. Blair “skipped” and “omitted” technical material when teaching out of other books; when they wrote their own, they wanted to focus on “how to apply theory.” Brickley complains about other texts that are “too esoteric.” McKenzie laments that many ME courses are taught like IMT (“full of arcane mathematical explanations”) and relegates “more technical details” to an on-line math appendix. Herzog wants to “demonstrate how the mathematical assumptions presented in the study of microeconomics can be attained in the real world.” Png looks to provide “conceptual rigor without mathematical complexity...a minimum of technical jargon, complicated figures, and highbrow mathematics.” And Froeb pushes this furthest, wanting “practical knowledge, not abstract theory”. As a result, they have “ditched the models”, leaving them “without as much of the analytical ‘overhead’ of a model-based pedagogy.”¹⁴

In trying to measure “mathiness”, there are many challenges and limits. As noted above, I distinguish between “in-text” and “out-of-text” in appendices, footnotes, end-of-chapter material, and accessible on-line material. This distinction seems important in light of the concerted effort to provide math, but to keep it “out of the way” if desirable. For example, most texts have some calculus, but most of them relegate it to footnotes, appendices, or boxes set aside in the text. Figures and tables were typically categorized and numbered, but when to count multiple graphs in one “figure”—and when to re-categorize a “figure” as a “table” (and vice versa)? Also note that “figures” include both graphs and diagrams. Some graphs are simple; some are complicated. Some tables are simple (e.g., simple data presentation or game theory examples) while others are more complicated (e.g., regression results). In a word, the “number” in each category is somewhat arbitrary and not necessarily indicative of the level of rigor.

Equations were even more painful to categorize and count. Sometimes they’re numbered; sometimes they’re not. And what do with *series* of equations? Some are solved slowly by the authors; others quickly. If one text solves an equation in six steps, while another uses two steps, how to count this? The quantity of equations is one metric, but then, how to measure the level of the math, comparing lighter algebra, heavier algebra, lighter calculus, and heavier calculus? For example, most of Herzog’s graphs stem from an exceptionally thorough discussion of demand and supply, leading a “counting equations” approach to overestimate the mathiness of his book. And Wilkinson’s heavy reliance on calculus and equations over graphs and tables causes this simple quantitative approach to underestimate the mathiness of his text.

All that said, Tables 4 and Table 5 provide quantitative detail on the “technical” aspects of the approaches in each text, listing the number of equations, figures/graphs, and tables—and then calculating the same categories *per page* (separately and cumulatively) to give a better sense of the *concentration* of math within each text. Table 3A describes the in-text coverage, while Table 3B adds non-text coverage and calculates the totals. To further describe the mathiness of the texts, Table 3B also includes the number of chapters devoted to

econometrics; coverage of indifference curves (U) and budget constraints (BC); coverage of isocost (I-C) and isoquant (I-Q) curves, and the number of calculus equations—as well as my subjective rating and ranking of the texts in terms of mathiness.

Table 4
MATH (IN TEXT)

	# of eqns	# of figs	# of tables	Text pgs	Eqn/pg	Fig/pg	Table/pg	EFT/pg
Thomas	466	142	83	531	0.88	0.27	0.16	1.3
Baye	366	126	60	404	0.91	0.31	0.15	1.37
Wilkinson	547	93	51	688	0.8	0.14	0.07	1
Salvatore	261	103	78	476	0.55	0.22	0.16	0.93
Samuelson	211	78	55	330	0.64	0.24	0.17	1.04
Blair	195	187	58	535	0.36	0.35	0.11	0.82
McGuigan	327	136	85	575	0.57	0.24	0.15	0.95
Perloff	206	124	44	530	0.39	0.23	0.08	0.71
Farnham	169	98	67	412	0.41	0.24	0.16	0.81
Brickley	92	113	10	551	0.17	0.21	0.02	0.39
McKenzie	14	97	24	458	0.03	0.21	0.05	0.29
Herzog	99	120	125	276	0.36	0.43	0.45	1.25
Png	12	47	23	177	0.07	0.27	0.13	0.46
Froeb	27	44	43	187	0.14	0.24	0.23	0.61
Averages	213.7	107.7	57.6	437.9	0.45	0.26	0.15	0.85

Table 5
MATH (NON-TEXT AND TOTAL)

		NON- TEXT		TOTA L					
	# of eqns	# of figs	# of tables	Eqn/p g	EFT/p g	A/E Chs	U&BC; IC&IQ	Calc Eqns	
Thomas	262	2	4	1.37	1.81	3	all	83	M ⁺ +
Baye	64	4	0	1.06	1.53	0.5	all	47	M ⁺ +
Wilkinson	26	9	1	0.83	1.06	2	all	48	M ⁺ +

Salvatore	194	12	22	0.96	1.41	2	all	30	<i>M+</i>
Samuelson	55	8	10	0.81	1.26	2	all	20	<i>M+</i>
Blair	190	10	2	0.72	1.2	1	I-C, I-Q	46	<i>M+</i>
McGuigan	131	29	18	0.8	1.26	2	BC, I-C	58	<i>M+</i>
Perloff	132	4	0	0.64	0.96	1	all	24	<i>M+</i>
Farnham	77	25	0	0.6	1.06	1	all	4	<i>M+</i>
Brickley	79	8	8	0.31	0.56	0	all	7	<i>M</i>
McKenzie	42	17	0	0.12	0.42	0	all	9	<i>M</i>
Herzog	0	0	0	0.36	1.25	1	all	0	<i>M</i>
Png	0	0	0	0.07	0.46	0	none	0	<i>M</i>
Froeb	9	0	0	0.19	0.66	0	none	0	<i>M</i>
Averages	90.1	9.1	4.6	0.63	1.06	1.11		26.9	

CONCLUSION

Acs and Gerlowski (1999) argue for a “decision-based” approach to ME, substituting decision-making for calculus, regression analysis, and linear programming. They encourage ME professors to emphasize the vital concept of “exchange”, the economic environment in which decisions are made, the economics of organization, and an interdisciplinary approach that feeds into a greater understanding of business strategy. Even so, professors might well differ on what constitutes the ideal, especially for their teaching context. In any case, ME professors would do well to wrestle with their learning objectives, course content, and textbook options.

As such, this paper hopes to encourage discussion about the goals within IMT and especially ME courses. And it presents data on the content of the 14 available ME books on the market, hoping to help professors make more efficient, well-informed decisions about text selection.

END NOTES

¹ Thanks to the discussant and session participants at the 2024 Public Choice Economics conference

² On the study of economics in K-12, see: Walstad and Watts (2015). On the study of economics in high school, see: Colander (2012), Roberts and McCloskey (2012), Gwartney (2016). On the relationship between success in high school and college economics, see: Rebeck and Walstad (2015).

³ Some universities prefer Macro before Micro—or vice versa. Allgood et. al. (2015) report that 30% of universities specify an order—and of those, 87% start with Micro. On the pros and cons of the two approaches, see: Fizel and Johnston (1986), Lupes and Maxwell (1995). Schools often offer a one-semester Macro/Micro

combination with an emphasis on broad economic literacy, especially for majors which do not require two Econ courses (Hensen et. al. [2002], Salemi [2005], Gilleskie and Salemi [2012]). Allgood et. al. (2015) report that 84% offer the two-course sequence; 37% offer the one-course version; and 21% offer both. In a handful of cases, schools have combined this non-technical literacy course with a second “technical” course in Macro/Micro to cover the same material as the standard two-course sequences. See: Schansberg (2016), Owen and Hagstrom (2021).

⁴Goolsbee (2019) argues that the priorities should include: interesting, useful, fun, understand the world, and make better decisions. Nechyba (2019) centers his course around competitive equilibrium and the First Welfare Theorem—and encourages professors to “help our students develop an intuition for what math actually means”.

⁵Full disclosure: I am the (new) second author on the McKenzie ME text.

⁶Neymotin (2014), Enajero (2009), and Marburger (2004) warn economists trained in liberal arts programs about this concern. Marburger (2004) recommends the use of cases to help here. Enajero (2009) provides a handful of examples of material from both perspectives and call professors to “close the gaps”: Too often, “business students are left to figure out by themselves the links between social science illustrations and business applications.” The extent to which this is a problem will relate, in part, to whether one’s undergraduate and/or graduate training was in a Business School or in a School of Liberal Arts or Social Sciences. See: Siegfried and Midani (1992) and Dean and Dolan (2001) for a discussion of these differences. After undergraduate and graduate studies in Economics within a Liberal Arts setting, I was fortunate to teach in a business school many years before being asked to teach ME to MBA students.

⁷Two of the 14 are in their first edition; McGuigan is in its 14th. In terms of their ancillaries, the books are similar—if not in quality, at least in terms of their presence. All of the texts have an e-book option. All of them (except Wilkinson) provide a test bank. All of them provide PowerPoint slides (except Herzog—and Png who provides “transparencies”). All of them provide at least some answers to text questions (except Herzog)—whether some or all, whether in-text or on-line. Some of the books provide videos—usually from the publisher as part of a general econ resource (MyLab for Farnham, Perloff, and Blair; Mindtap for Froeb and McGuigan; and Connect for Baye, Brickley, and Thomas), but sometimes from the authors (McKenzie and Herzog).

⁸Gordon (2001) argues that (international and) comparative micro and macro are increasingly important in the face of increasing globalization.

⁹Fike and Gwartney (2015) survey the coverage of Public Choice economics in Principles texts—and find that text devoted to “market failure” is six times greater than “government failure”.

¹⁰Navarro (2006) makes the case for a “managerial macroeconomics” course for business decision-making, especially by CEO’s. Gregorowicz and Hegji (1998) report that 60% of MBA programs offer a ME course, while 54% offer Macro course and 45% offer Micro.

¹¹On “problem-based learning” in ME courses, see: Goodman (2010), Chulkov and Nizovtsev (2015). Heath et. al. (2013) discuss the use of spreadsheet problems in ME courses.

¹²Gregorowicz and Hegji (1998) note that students often complain that ME courses are too theoretical (30%), too difficult (23%), and too quantitative (21%).

¹³Goolsbee (2019) reports that 100,000 students take the AP exam in Micro and 150,000 take the AP exam in Macro.

¹⁴While also less mathematical, McKenzie takes a very different view of theory, arguing that students should *embrace* it as the best way to learn: “People in business often spurn theory on the grounds that it lacks practical value. [But] The abstract way of thinking that we develop in this textbook has a *very* practical, overriding goal—to afford students more understanding of the business world than they could if they tried to keep the analysis cluttered up with the “buzzing confusion” of facts from their workplaces...If people can *think* through business problems in some organized way, albeit abstractly, they might be able to avoid mistakes when they actually *do* business...If the class is about *thinking*, then professors have some justification for being in front of the class. And if the class is about the thinking process, there must be some method for thinking through problems...As such, our goal in this volume is to develop *the economic way of thinking* in the context of a host of problems that business students, as (future) managers of real-world firms, will find relevant to their daily work and their career goals.”

REFERENCES

- Acs, Z. J., & Gerlowski, D. A. (1999). Teaching managerial economics. *Financial Practice and Education*, 9, 125-131.
- Allgood, S., Walstad, W. B., & Siegfried, J. J. (2015). Research on teaching economics to undergraduates. *Journal of Economic Literature*, 53(2), 285-325.
- Anderson, R. C., & Muraoka, D. D. (1990). Survey of managerial economics textbooks. *The Journal of Economic Education*, 21(1), 79-91.
- Baye, Michael and Jeffrey Prince (2022). *Managerial Economics and Business Strategy*, 10th ed. New York: McGraw-Hill.
- Blair, R. D., & Rush, M. (2020). The economics of managerial decisions. Pearson.
- Brickley, J. A., Smith, C. W., Zimmerman, J. L., Zhang, Z., & Wang, C. (1997). Managerial economics and organizational architecture. Chicago: Irwin.
- Butler, J. S., Finegan, T. A., & Siegfried, J. J. (1994). Does more calculus improve student learning in intermediate micro and macro economic theory?. *The American Economic Review*, 84(2), 206-210.
- Chulkov, D., & Nizovtsev, D. (2015). Problem-based learning in managerial economics with an integrated case study. *Journal of Economics and Economic Education Research*, 16(1), 188-197.
- Colander, D. (2012). Symposium on precollege teaching of economics: Introduction. *The Journal of Economic Education*, 43(3), 282-282.
- Dean, D. H., & Dolan, R. C. (2001). Liberal arts or business: Does the location of the economics department alter the major?. *The Journal of Economic Education*, 32(1), 18-35.
- Enajero, S. (2009). Interdisciplinary approach to teaching managerial economics. Available at SSRN 1394233.
- Farnham, Paul (2014). *Economics for Managers*, 3rd ed. New York: Pearson.
- Fike, R., & Gwartney, J. (2015). Public choice, market failure, and government failure in principles textbooks. *The Journal of Economic Education*, 46(2), 207-218.
- Fizel, J. & J. Johnston (1986). The effect of macro/micro course sequencing on learning and attitudes in principles of economics. *Journal of Economic Education*, 17(2), 87-98.
- Froeb, Luke, Mikhael Shor, Brian McCann, Michael Ward (2023). *Managerial Economics: A Problem-Solving Approach*, 6th ed. New York: Cengage.
- Gilleskie, D. B., & Salemi, M. K. (2012). The cost of economic literacy: How well does a literacy-targeted principles of economics course prepare students for intermediate theory courses?. *The Journal of Economic Education*, 43(2), 111-132.
- Goodman, R. J. B. (2010). Problem-based learning: Merging of economics and mathematics. *Journal of Economics and Finance*, 34, 477-483.
- Goolsbee, A. (2019). What should we teach in intermediate microeconomics?. *The Journal of Economic Education*, 50(3), 269-272.
- Gordon, R. J. (1993). Why the principles course needs comparative macro and micro. *The American Economic Review*, 83(2), 17-22.
- Gregorowicz, P., & Hegji, C. E. (1998). Economics in the MBA curriculum: Some preliminary survey results. *The Journal of Economic Education*, 29(1), 81-87.
- Gwartney, J. (2012). What should we be teaching in basic economics courses?. *The Journal of Economic Education*, 43(3), 300-307.
- Hansen, W. L., Salemi, M. K., & Siegfried, J. J. (2002). Use it or lose it: Teaching literacy in the economics principles course. *American Economic Review*, 92(2), 463-472.
- Heath, W. C., Underwood III, J. H., & Watson, J. K. (2013). Teaching managerial economics: Spreadsheet exercises integrate economics within the business curriculum. *Advances in Management and Applied Economics*, 3(4), 249.
- Herzog, John (2021). *Making Sense of Managerial Economics*. Solana Beach, CA: Cognella.
- Lopus, J. S., & Maxwell, N. L. (1995). Teaching tools: Should we teach microeconomic principles before macroeconomic principles?. *Economic Inquiry*, 33(2), 336-350.
- Mankiw, N. G. (2020). Reflections of a textbook author. *Journal of Economic Literature*, 58(1), 215-228.
- Marburger, D. R. (2010). Tailoring managerial economics to suit the MBA. Available at SSRN 1636019.
- Marcal, L., A. Naganand, R. Tontz, & W. Roberts (2007). One-semester principles and student performance in intermediate theory courses. *Journal of Economics and Economic Education Research*, 10(3): 27-38.
- Maurice, S. C. (2020). Managerial economics: Foundations of business analysis and strategy. McGraw-Hill Education.
- McGuigan, J. R., Moyer, R. C., & Harris, F. H. D. (1999). Managerial economics: Applications, strategy, and tactics. South Western Educational Publishing.
- McKenzie, R. B., Schansberg, D. E., & Lee, D. R. (2024). Microeconomics for Managers: Principles and Applications. Cambridge University Press.

- Metzgar, M. (2014). A hybrid approach to teaching managerial economics. *E-Journal of Business Education and Scholarship of Teaching*, 8(2), 123-130.
- Navarro, P. (2006). The hidden potential of “Managerial Macroeconomics” for CEO decision making in MBA programs. *Academy of Management Learning & Education*, 5(2), 213-224.
- Nechyba, T. J. (2019). What should students learn in intermediate microeconomics? To think conceptually from the fundamentals of the discipline. *The Journal of Economic Education*, 50(3), 261-264.
- Neymotin, F. (2014). From Ford to Friedman: Teaching microeconomics to business students. *e-Journal of Business Education and Scholarship of Teaching*, 8(2), 100-111.
- Owen, A. L., & Hagstrom, P. (2021). Broadening perceptions of economics in a new introductory economics sequence. *The Journal of economic education*, 52(3), 175-191.
- Perloff, Jeffrey and James Brander (2020). *Managerial Economics and Strategy*, 3rd ed. New York: Pearson.
- Png, I. (2022). *Managerial economics*. Routledge.
- Rebeck, K., & Walstad, W. B. (2015). Grades, coursework, and student characteristics in high school economics. *The Journal of Economic Education*, 46(2), 219-230.
- Roberts, H., & McCloskey, D. N. (2012). What economics should we teach before college, if any?. *The Journal of Economic Education*, 43(3), 293-299.
- Salemi, M. K. (2005). Teaching economic literacy: Why, what and how. *International Review of economics education*, 4(2), 46-57.
- Salvatore, D. (1998). *Managerial economics in a global economy*. McGraw-Hill.
- Samuelson, W. F., Marks, S. G., & Zagorsky, J. L. (2021). *Managerial economics*. John Wiley & Sons.
- Schansberg, D. E. (2016). Teaching micro and macro in all principles courses. *Journal of Economics & Economic Education Research*, 17(1).
- Siegfried, J. J., & Bidani, B. (1992). Differences between economics programs located in liberal arts colleges and in business schools. *The Journal of Economic Education*, 23(2), 181-188.
- Tseng, H. K. (2010). Has the student performance in managerial economics been affected by the class size of principles of microeconomics. *Journal of Economics and Economic Education Research*, 11(3), 15-27.
- Wai, Sebastian (forthcoming). Managerial Economics in the MBA Program. *Journal of Economic Insight*.
- Walstad, W. B., & Watts, M. (2015). Perspectives on economics in the school curriculum: Coursework, content, and research. *The Journal of Economic Education*, 46(3), 324-339.
- Wilkinson, Nick (2022). *Managerial Economics*, 2nd ed. London: Cambridge University Press.