

1

Introduction — An Overview for Instructors

With so many microeconomics textbooks on the market, **why another book?** I think it's a question that has to be asked and answered before anyone considers writing another book — and before anyone can ask you to switch from the book you are using. In Section A of this overview, I attempt to provide an answer. I then elaborate on some of the **unique features of the text** in section B and give some suggestions on how to employ them most productively. Finally, I say a few words about Chapters 0 and 1 in Section C.

1A Why Should Students Take Economics — and What does that Tell Us?

To answer the question “why another book,” I think the best place to start is to ask: **What are we trying to do for our students when we teach them economics?** Since most students will ultimately do something other than think about economics all the time, I answered this question for myself by thinking about all the good courses I have taken *outside of economics* — and what it is that I have carried away from them.

Take my undergraduate physics class, for instance. I did a lot of work in that class and solved all sorts of problems using all sorts of tools. My guess is, if confronted with most of those problems now, I would not be able to solve them right away without brushing up a lot on the material. So the point of taking my physics class could not possibly have been for me to be able to work through these problems for the rest of my life. Rather, I think the point — and what influences me to this day — came in three parts:

1. First, even as I am writing this 20 years later, I still carry **some basic intuitions about the world** with me — intuitions that come in handy in all sorts of ways. Before I took physics, I thought that if I stand on the back of a fast moving train and jump in the air, I will end up landing on the railroad tracks and, assuming I survive the fall, will watch the train speed away. I now know that this

is not true — that I will actually land right back on the back of the train because of something called inertia and can therefore jump to my heart's content. More importantly, I think I understand a whole lot about cause and effect, about science and how it's done, about trusting scientific discoveries even if they seem counterintuitive at first.

2. Second, I think that solving all those problems — struggling through the math and trying to understand how it all connects — **sharpened conceptual thinking** “muscles” in my brain. While I may not be able to pick up those same problems and solve them right away now, I think better and more clearly as a result of having done them, and that has helped me in innumerable ways that I will probably never be able to connect easily to having done a particular problem involving acceleration and friction and gravity and such.
3. Finally, while I liked physics fine, I learned that it was not for me — and I focused the remainder of my course work on other fields that were more exciting to me. I don't think this was a failure on the part of my physics instructor — part of what we should do, particularly in undergraduate courses taken by freshmen and sophomores, is to **help students select into future courses** on the basis of what we are teaching them.

Any great course we have ever taken has had these different impacts on us. It has given us important intuitions, helped us make pivotal decisions about what to do next — all while making us better at something that enriches life — something like conceptual thinking (or, as the case may be for some courses, music appreciation, artistic expression, or the mastery of a foreign language). I particularly emphasize to my students the importance of moving from memorization to conceptual thinking. **The modern world rewards conceptual thinking above all else** — and conceptual thinking skills developed on one platform (like economics) directly translate to other platforms (such as business or everyday life).

So, why should students take economics? The answer, it seems to me, is similar to that for my physics class:

1. First, **economics offers extraordinarily useful insights and intuitions about the world** — insights and intuitions that are not at first obvious but that can become as obvious to students as it is to me now that I will land on the back of the train if I jump while the train is moving at great speed. Internalizing the basics — opportunity costs, tradeoffs, incentives, markets, etc. — cannot help but influence how our students will make decisions in their everyday lives, in their businesses and in the various roles they will take in the public sphere.
2. Second, **it is difficult for students to internalize these insights without confronting them in circumstances that are different in their specifics but conceptually similar to what they have seen in class**. This is why struggling with problems by defining particular models that give particular insights is so important. Just as I don't remember how to do physics homework problems

now, students will not remember how to do constrained optimization in 10 years — but they will think more clearly and conceptually if we can use these problems to develop their conceptual thinking muscle while focusing their intuitions on the broader insights we are trying to convey. For many students, **economics then provides an interesting playground on which they can transition from memorization to conceptual thinking.**

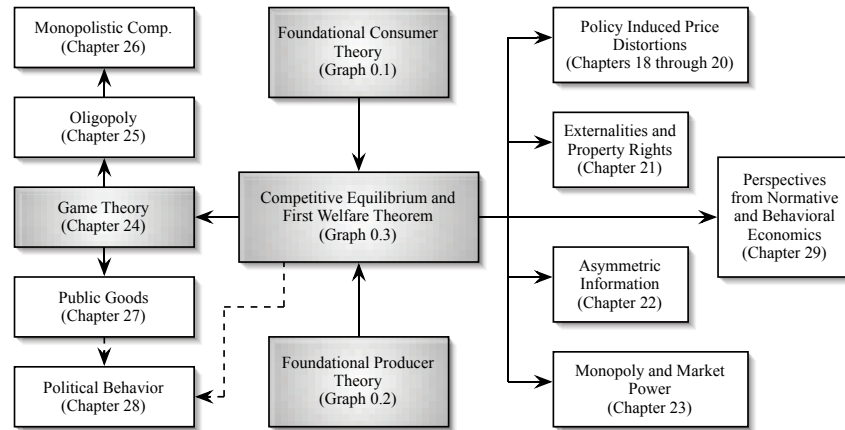
3. Third, I think we should be honest about what future economics courses will look like — dissuading students who might be more interested in physics or philosophy and providing **a roadmap for those that are interested in economics.**¹

So how, then, do we best achieve these goals? The trick, I think, is to **find the right balance**: If we over-emphasize the first goal, we end up preaching the wisdom of economics without deeply penetrating the often sleepy conceptual muscle of our students and without giving a good picture of how people really “do” economics. If we over-emphasize the second, the students will not see the forest for the trees — solving one optimization problem after another and learning to identify cute tricks along the way without ever appreciating how the mechanism is used to say something that actually matters. And if we overemphasize the third, we are providing roadmaps without developing the skills necessary to drive on the road we are putting the students on. Ultimately, I have become convinced that, if we find the right way of teaching economics, the three goals do not stand in contradiction to one another — pursuing one can reinforce the others.

Goal 1: Keeping an Eye on the (Big Picture) Forrest

I have developed a big-picture theme to this book that, in one way or another, is reflected in many other microeconomics texts (though I have tried to make it more explicit here). The first half of the book, illustrated by the three shaded boxes of the middle column of Graph 1.1, builds the tools for the consumer and producer model to derive a competitive equilibrium and the **First Welfare Theorem**. Along the way, “big picture” concepts like opportunity costs, how policy helps shape incentives, the role of prices, etc. are developed, but with the unifying theme that all this ultimately allows us to say something very profound. (Graphs 0.1, 0.2 and 0.3 in Chapter 0 of this *Instructor Guide* provide more detail on this shaded central portion of Graph 1.1.) The first welfare theorem, I tell my students from day 1, is the

¹There is, of course, the occasional student that becomes so interested in what we have to say that he or she goes on to graduate school and tries to become just like us. That’s cool — and we should not forget entirely about that student. But I am convinced we can do (1) and (2) in ways that do not cheat this student and at the same time do not impose unnecessary burdens on the rest of the class. In fact, if we succeed in this, we can help many more students than just the few that go to graduate school to gain access to at least some of the work economists do — and in the process we can empower some of our students to ask questions they might never otherwise be able to pose. And in undergraduate programs that emphasize an exposure to research, students can then become engaged in helping to answer some of these in ways that will also enrich their experience.



Graph 1.1: Placing the First Welfare Theorem at the Center

central unifying breakthrough that ties all of microeconomics together by illustrating the “ideal” conditions under which markets “work” — and thus implicitly defining what we mean when we say “markets work” and what can go “wrong”.

The second half of the book, illustrated on both sides of the central shaded column of Graph 1.1, provides different ways of investigating the underlying conditions of the first welfare theorem. On the right of Graph 1.1, the progression does not rely at all on game theory and simply takes students through the implications (for the first welfare theorem) of price distortions, externalities, asymmetric information and market power. The box farthest to the right furthermore provides a place for perspectives on this theorem as offered by normative critiques as well as the insights from psychology. The left side of Graph 1.1, on the other hand, starts with one more (shaded) foundational chapter — Game Theory — which then allows a further exploration of externalities (in the form of the free rider problem and public goods) and market power (in market structures that are more complicated and more interesting than monopoly). (The politics chapter, while written with the spirit of game theory in mind, can actually be covered without any game theory.)

The goal, then, is to understand more clearly how **the “real world” violations of the first welfare theorem create the opening for non-market institutions to make a positive difference.** Graph 1.1 attempts to illustrate the centrality of the first welfare theorem in this approach — and the book departs somewhat from prior practice in that it emphasizes both *government* and *civil society* institutions as potential avenues for correcting the “market failures” that arise due to such real world violations. (The short concluding Chapter 30 attempts to put all the pieces together.) Too often, I think, students walk away from a class like this thinking about markets and governments — neglecting the many institutions that simply do not fit neatly into either of these categories. Along the way, I hope students will develop an appreciation for how market-like forces are still present in civil society interactions

but also how **civil society institutions** can help shape preferences and offer partial solutions to efficiency and equity problems. I want students to understand that we recognize the importance of such institutions that are neither controlled by governments nor primarily governed by explicit prices — and that economics can help a lot in understanding them. Economics becomes inherently more interesting when students can see how it is about more than money.

Goal 2: Linking the (Conceptual Thinking) Trees

While I hope that students will see the big picture themes throughout, I know that my students often feel they are just being pounded by so many different concepts and ideas that they struggle to keep them all straight. I respond with the second main theme of the book: we are actually doing the same thing over and over in somewhat different settings — and the more students see all the “trees” connecting, the closer they are to conceptually *understanding* the material rather than just *remembering* lots of little trees. **Microeconomics is about individuals maximizing something subject to some constraints** — whether consumers maximize utility subject to a budget constraint or producers maximize profit subject to a production constraint, whether we maximize taking our economic environment as given or we maximize with an eye toward strategically shaping that environment. **This is what links all the trees to make a forrest from which the broader intuitions about the world emerge.** The more we can help students see this, the easier it will be for them to both internalize the big picture forrest while also beginning to think about conceptual insights that link problems which at first may seem very different. The hundreds of exercises in the book, the student *Study Guide* that links to these exercises and the over 300 web-based animated teaching and learning modules are designed with this conceptual linking in mind. (I will say more about these features of the text later in this chapter.)

Goal 3: Providing a Roadmap Forward

The final of our three goals is to provide students with a roadmap for thinking about what to study next. This consists of two parts: First, we don’t want to hide what economics is — so that students who would rather focus their energies elsewhere can decide that is what they should do. I try to do that by presenting material in rigorous but accessible ways. Second, for those students who get excited about what economics has to offer, the text repeatedly refers students who find particular topics of interest to future courses that they should consider taking. In fact, the organization of the text around the first welfare theorem provides a natural outline of many of the primary sub-disciplines in microeconomics, with each violation of the first welfare theorem (as illustrated in Graph 1.1) corresponding to one or several chapters in the second half of the book.

Instructors can help students a lot by emphasizing that none of these chapters fully “wraps up” the material — that there is always more to learn, always deeper to dig, and then by letting students know, within the particular setting in which

the course is taught, where they should go next. Teaching a course like this in part involves an “advising” function — our colleagues in our departments can benefit greatly if we can channel students from the outset to the courses that will be most exciting to them.

1B Features of the Textbook Package — and their Relation to the Text’s Goals

One of the unique aspects of this book and its accompanying supplements lies in the the strong **integration of the supplements with the text** itself. This is typically difficult to achieve as supplements are usually done as an afterthought after the book is completed — and usually contracted out to instructors or graduate students. In this case, however, the supplements were developed by me in conjunction with the development of the book. The *Study Guide* that students get (for free) on the accompanying web-site, for instance, is centered almost entirely on explanations of within-chapter exercises and selected end-of-chapter applications. All solutions — including those in the *Study Guide* as well as those in the *Instructor Solutions Manual* — were written as the exercises themselves were written. (This was done in part to insure that the exercises were well-crafted.) The *LiveGraphs* on the accompanying web-site were also developed as the graphics themselves were created during the writing of the text (with voice-overs and written explanations added later), and many of them have been classroom tested at Duke prior to being finalized. Only the *Powerpoint Presentations*, this *Instructor Manual* and the *Exam Question Bank* followed the completion of the textbook, but even many parts of these were tested in preliminary form in classrooms prior to that.

Active Learning versus Passive Absorption: Confronting Concepts Immediately

One of the features of the text that has helped my student the most is found in the many **within-chapter exercises**. These are meant to get students to immediately tackle the concepts they have just absorbed — and thus the jump-start the active learning process long before students sit down to attempt anything like end-of-chapter exercises. I provide the students will detailed answers to all within-chapter exercises in the student *Study Guide* because I have found that many students hesitate to try the within-chapter exercises if they don’t have a quick way to check whether they got them right. My experience with providing my own students these solutions has been truly remarkable: **Student performance on exams improved noticeably when students had access to these solutions**. I think many students literally read the text with these solutions next to them, attempting the within-chapter exercises along the way and checking themselves instantly. Much of the foundational learning appears to happen this way, and the more you can encour-

age your students to attempt these exercises as they are reading the text (or as they are listening to the relevant animated modules), the better off they will be.²

Where are All the Applications? — Using Applications to Teach and Learn

One of the first questions you might have as you flip through the text is where all the colorful side-boxes with "Real-World Applications" are. The answer is they are not there — not because real world applications aren't fundamental, but rather because I don't think we increase understanding by spoon-feeding sexy applications without having students really engage with them. Research has shown, and your own experience might confirm, that students do not read the colorful side-bars unless you specifically assign them and test them on those applications. My strategy instead is to **provide all the applications in problem settings** — guiding students through them step-by-step and allowing them to see the material inform real-world issues. That is what the end-of-chapter exercises attempt to do.

As you can see, these end-of-chapter exercises are long. They are divided into **Everyday Applications, Business Applications and Policy Applications** — and each of them contains an A and B part that corresponds to material covered in the respective parts of the chapter. When you do expose students to math, you can have them go through problems that first force them to confront the questions without the math and then show them how the math gets at the same issues as their intuition. This *Instructor Solution Manual* (available to all instructors) provides detailed answers to all these problems — not just sketches, but step-by-step solutions that you can share with your TAs and your students.³ These answers are arranged in pdf files for each chapter, with each solution starting on a new page to make it easy to extract just those solutions you want to share with your students. (The student *Study Guide* contains solutions to only those end-of-chapter exercises that are specifically marked in the text.)

There are a variety of ways to use these problems — all designed to **teach the material through active engagement with it**. I assign some of them as homework, go through some of them during lectures and have TAs go through some in break-out sections. Many of them are too difficult for students to tackle "cold turkey" — they are intended as teaching devices. Some instructors have used this text to lecture relatively little and simply use the application exercises to teach the material for them. The "right" way will depend on your own judgment — but I think it will involve a balance between lecturing, using the applications and having students go through applications on their own. They each involve dealing with the "trees" — but most of them attempt for students to also look at the forrest. In using the problems as a teaching device, you can help students see the forrest as you tackle

²Until the full completion of the accompanying web-site (by summer of 2010), samples of *Study Guide* chapters can be viewed on the demo site at www.cengage.com/economics/nechybademo.

³The answers are similar in format to those provided in the *Study Guide* for selected problems — with samples included on the demo site at www.cengage.com/economics/nechybademo until the full web-site is up in summer of 2010.

the trees along the way — you can build the conceptual muscle while not losing sight of the fact that we need to make the material relevant if we expect our students to go through the pain of learning.

Math, Intuition and the “Real World”

I began thinking about teaching microeconomics seriously when I was asked to teach Intermediate Microeconomics with Calculus to a class of over 100 students in my first quarter as an assistant professor at Stanford University. The course was not well liked by students — by and large because students saw little connection between the **math** they were asked to work through and either the **intuitions** they were trying to develop or the **“real world”** they cared about. Their experience was not much different than that of many first year PhD students who lose these connections and quit graduate school because they have no interest in simply becoming applied mathematicians.

I quickly came to see why most undergraduate textbooks therefore shy away from much math. Many students, particularly those who come through U.S. secondary schools, have learned the little math they know in “cookbook” formats — never really understanding what math is all about. While instructors — having survived heavily mathematical PhD programs — instinctively see **graphs as another way of doing math**, this idea is utterly foreign to most of our students who have never developed the intuitive understanding of how math and graphs connect.

I began to experiment with a different way of teaching microeconomics — cutting down on the number of topics I covered and spending more time on explicitly illustrating that math and graphs are two sides of the same coin and that understanding the whole coin can strengthen the conceptual muscle that we use to understand the world. I started by thinking that understanding economics can be strengthened by understanding the mathematical underpinnings of modern economics — but over time I became convinced that understanding economics can help our students appreciate math just as well. Students do not know math because abstract math is uninteresting to most of them, but they can actually learn a lot about what math is all about by seeing it connect to something that *is* interesting to them.

I think it is perfectly possible to come a long way toward achieving the dual goals of internalizing intuitions while developing conceptual thinking skills without using much math at all, and I think it is equally possible to do it in a quite mathematically focused course. I don’t think there is one answer — and no one is in a better position to judge what is best than the individual instructor. It is for this reason that most of the chapters follow the A/B format religiously — giving you and the students the opportunity to focus on the approach you think is best for the material at hand.

And in the mathematical portions of the chapters, I actually try not to use very complicated math — even if at times it gets algebraically intensive. For almost everything we do in this text, **students don’t really need to know more than what a derivative is** — we can teach them from that what a partial derivative is, and that is

the main mathematical tool beyond single-variable differentiation that they need. On rare occasions I evaluate an integral — but those portions can easily be skipped if students don't have the appropriate background. The rest is manipulating equations and working with pre-calculus concepts. I do understand that many of our students are very rusty when it comes to pre-calculus material — even exponents and fractions are sometimes strangely unfamiliar. But I don't think we should apologize for allowing students to rediscover such basic material — it will serve them well. (Students will have access to a review of basic pre-calculus math in the web-based *Chapter 0* about which I say a bit more toward the end of this chapter.)

Using Technology in (and out of) the Classroom

One of the challenges for students starting out in economics is getting used to the graphs (and to how they relate to math to the extent to which math is introduced into the course). There are a number of tools we have developed to help address this — both within the classroom as well as outside.

1. Unpacking Graphs

The first innovation that should help is in the way graphs are displayed in the text. Rather than presenting graphs in their final form, most graphs are developed over multiple panels so that students can see how the final graphs actually come about. The text then takes students through the panels to construct the graphs that typically only appear in their final form. When students become confused about what happened in the graphs they put down in their notes from your lectures, they can return to the text to “unpack” the graphs and construct them anew. The same is done, though to a lesser extent, in the solutions to exercises in the *Instructor Solutions Manual* and the student *Study Guide*. Note also that the web site contains downloadable pdf files of each chapter's graphs to make it easier for students to follow the text when text explanations carry across several pages. Students can also print these out and bring them to class, allowing them to listen more carefully and become less obsessed about drawing every detail you draw on the board.

2. LiveGraphs — Animations of Text Graphs

Different students learn differently just as different instructors teach differently. As a result, we have developed animated versions of all the graphs (which we call *LiveGraphs* in the text — with the option of written and oral explanations for students as the graphs develop in real time at a pace that is selected by the user. Some instructors might find it useful to import some of these animations into their lectures — thus creating a direct link to the same graphics that appear in static form in the text. Others might prefer to rely on the powerpoint quasi-animations (discussed further below) that have been created using still-frames of animations — letting students explore the fuller animations on their own. And yet others may prefer to simply provide these as a tool to students — who can then replay them as they need to. Students,

in turn, may choose to accompany the animations with written text that unfolds as the animation proceeds at the speed selected by the student, or they may choose to hear an oral explanation alongside the animation. Students can pause the animations, reverse them, then forward once they are comfortable proceeding. For some of my students, this has become a second way of actually “reading” the text, and in future editions we hope to have these modules in forms that will download to popular mobile devices like iPods.⁴

3. “Exploring Relationships” Modules

In addition to the animations of the graphs that appear in the text, we have also developed separate “Exploring Relationship” modules that do not appear in the text but that can also be used in both lectures and individually by students. Some of these directly link math to graphs — as, for instance, in cases of utility and production functions whose parameters can be changed by the user to illustrate how these changes affect the shapes of these functions or the shapes of “slices” of these functions (such as indifference curves). Others illustrate broader conceptual points to demonstrate how three dimensional functions can be “sliced” in different ways to obtain the two dimensional graphs we often rely on. These latter modules can play an important role in illustrating how the “trees” make up a “forrest” — how, for instance, various two dimensional relationships arise from three different ways of slicing a three dimensional production functions. I used to bring an onion to class and slice it up to show how the two dimensional slices emerge from the three dimensional onion — and then spent some moments in awkwardly contorted positions in the corner of the room to illustrate how a production function is different and similar to the onion. It was funny, I suppose — but I now find that simply playing these kinds of modules is worth an entire lecture.⁵

Powerpoint Slides

The *Powerpoint Presentations* for each chapter in the text are comprehensive while allowing instructor’s flexibility in terms of how to use them. Instructors might choose to use these as they are, or they might choose to use portions of them and combine them with their own materials. The presentations are grouped by chapter and contain the following features:

1. The A-part material is organized primarily around an exposition of the graphs, with the graphs built up from still-images of the *LiveGraphs* animations. In many cases, multiple panels of the graphs are overlaid — with the **quasi-animation** proceeding as you click through the presentation. If you use these

⁴Samples of *LiveGraphs* are available for early chapters on the text demo site www.cengage.com/economics/nechybademo until the full website goes up in summer of 2010.

⁵Samples of *Exploring Relationships* modules are also available on the demo site www.cengage.com/economics/nechybademo until the full website goes up in the summer of 2010.

to create your own powerpoint slides, be careful to cut and paste all the overlaid panels (by dragging the pointer over the graph area rather than just clicking the graph) rather than just the top panel if you want to retain the quasi-animation effect.

2. Many of the powerpoint slides have timing effects built in, with the slides (and graphs) evolving for the students to see. For particularly challenging graphs, you can click back and forth to let students see portions of the graphs built several times.
3. If you are primarily teaching the A-portion of the material but want to occasionally show students some of the accompanying math from the B-sections, you will find green buttons labeled wither "Go to Math" or "Go to X" (where X might be a topic like "the Slutsky Equation"). By clicking these buttons, you are taken to a later portion of the powerpoint presentation – and there you will find blue buttons labeled "Back to Graphs" that return you to the earlier portion of the presentation.
4. The top banners for A-section material are blue, while the top banners for B-section material contain two colored stripes.
5. The math portions of the powerpoints contain equations drawn from the text as well as additional equations created from the text equations. These are pasted into the powerpoint presentations as "pictures" and cannot be manipulated. They also sometimes appear pasted into textboxes (surrounded by regular text). If you create your own powerpoint presentations from the ones accompanying this text, you will need to be careful to cut and paste all the relevant material – i.e. don't just click on a textbox, but rather drag the arrow over the material you want to copy to make sure you are catching all parts.
6. The 2010/2011 version of the powerpoint presentations do not at this point include any links to *LiveGraphs* – rather they draw on still images of the *LiveGraphs* as graphs are constructed. Occasionally, however, I will suggest particularly compelling modules you might want to pull up in your classes for different chapters. Future versions of powerpoint presentations might include these directly.
7. If you are using a *Tablet PC*, you might consider combining the powerpoint presentations with blank slides on which you hand-draw and hand-develop some of the material further. This is particularly useful when students ask questions in class.

I have to admit that I am a late-comer to using Powerpoint in my classroom, in part because I prefer the flexibility of chalkboards or blank overhead presentations. At the same time, I have increasingly found the *LiveGraphs* and *Exploring Relationships* modules to be invaluable assets in my teaching and have therefore

brought them into the classroom with increasing frequency (and into the powerpoint presentations through the “quasi-animations”.) Adding the option to bring blank slides up on the Tablet PC during the presentation has allowed me to combine the flexibility of the chalk-and-talk approach with the benefits that technology can bring into the classroom.

Exam Questions and Quizes

As of this writing (in spring of 2010), the exam and quiz features of the package are still in development (but will be ready for use by fall of 2010). Here, too, flexibility is the key — with questions grouped by type (True/False, Multiple Choice, Short and Long Answer formats) as well as mathematical sophistication. (We are still contemplating the possibility of adding a “Flashcard” feature to the website, but only if we find a way to make that feature not centered on memorization.)

1C A Few Words about Chapters 0 and 1 of the Text

Following preliminary feedback from instructors in focus groups, I will, over the summer or early fall of 2010, be adding a web-based *Chapter 0* to the website. The chapter will contain an A-part that reviews basic graphing techniques within the context of some of the concepts most students will have seen in their Principles course. It will also contain a B-part that connects some foundational mathematical concepts to the graphical exposition in part A. This B-part will also review some basic pre-calculus topics that students struggle with, and it will provide a short review of single variable derivatives (that are then used to develop the concept of a partial derivative in Chapter 4 of the text). (Note: Chapter 0 will most likely not yet be ready for use in fall of 2010 but will be up for use in spring 2011.)

Chapter 1 is one of only two chapters to not be split into an A and a B part — the other being the concluding Chapter 30. It’s relatively straightforward, but it tries to get students on the right page to start out the substantive tools-building that begins in Chapter 2. *Microeconomics* is defined, as are the concepts of *rationality* and *self-interest*. Students are introduced to the idea that an analysis of individual actions can help us think about social consequences of institutions — consequences we think of as an *equilibrium*. And I spend a little time on the idea of *models* — how to think about their “simplicity” and lack of “realism”, and how using models can help us build the conceptual thinking skills that are so highly demanded in the modern world.

After introducing the terms *positive* and *normative* economics, I introduce the term *efficiency* and the sense in which that is a positive concept as well as the sense in which we often give it normative interpretation. Finally, I review three basic lessons I hope students will never forget — that the world is not a zero sum game, that bad behavior can emerge from bad incentives (rather than bad character), and

that order can arise spontaneously. The remainder of Chapter 1 outlines the rest of the book and provides some hints for students on how to succeed in a course that uses this book.

Concluding Remarks

In conclusion, let me summarize my answer to the question “Why another book?” We want students to internalize important ideas, grow in their conceptual thinking skills and clarify where they should head next in their studies. Internalizing ideas and developing conceptual thinking skills should be complements — regardless of how much or little formal mathematics is used along the way. And both of these goals require that students confront the material on their own rather than simply memorizing definitions and concepts. Along the way, keeping an eye on the “big picture” brings relevance and excitement to the material — and permits students to develop their own interests in terms of how to continue their education.

A full use of this text then makes use of the following features: (1) Instructors can flexibly move through the text, choosing to emphasize some topics over others and highlighting math more or less. (A guide on how to construct a syllabus that meets your needs is presented in Chapter 0.) (2) In carefully choosing which Application exercises to emphasize in lectures, TA sessions and homeworks, students can internalize concepts on different platforms — whether these are more focused on everyday, business or policy questions. (3) Using technology where it can make a difference — through the animated graphics and exploring relationships modules — gives added flexibility to both instructors and students, explicitly recognizing the different teaching styles that are appropriate in different settings, and the different learning styles that differ across individual students. The *Powerpoint Presentations* incorporate this flexibility while encouraging instructors using Tablet PC's to also allow students to see them develop ideas using some of the tried-and-true chalk-and-talk methods. And the integrated *Study Guide*, *Instructor Solutions Manual* and *Exam Questions* provide supporting tools to both instructors and students.