

IS UNDERGRADUATE ECONOMICS CURRICULUM RELEVANT?

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ABSTRACT

Introductory economics textbook models and theories are simple, intuitive, and elegant. Another thing they have in common is they are not supported by the data. Textbook models such as exchange rate determination are reviewed and compared to empirical literature. It is argued that much of the material taught in intro courses is irrelevant for many students. Three major sources of irrelevance are identified. First, many of the theories have no external validation. Second, some are incomplete. Students need to take additional courses for understanding these incomplete theories. Last, textbooks do not describe nor discuss aspects of the economy that would be of great interest for any citizen. This work asks how the teaching of introductory economics can become more useful and attractive for the majority of students, especially those who do not seek a degree in economics. Keywords: Undergraduate, Economics, Teaching, Introductory Economics. JEL Classification Code: A22

THE IMPORTANCE OF AN INTRODUCTORY COURSE

“Our Macro class began with the statement: All that stuff you learned in undergraduate school—it’s incorrect.” (An MIT graduate student, cited by Colander, 2007:180)

Some of the material taught in introductory economics courses is irrelevant and often misleading. An example is the law of one price, which generally is not supported by the data. Another example is the demand and supply model of exchange rate determination, which has weak or no empirical validation. Understanding the shortcomings of undergraduate curriculum may inspire a discussion about how to improve course content, with obvious benefits for students and society.

Most of those who make important decisions on economic matters are not professional economists. Some may hold an undergraduate degree in economics, but many take only the usual introductory economics courses. (To my knowledge, none of the current U.S. Congress members are economists.) John Maynard Keynes, in his famous “General Theory” notes that “practical men, who believe themselves to be quite exempt from any intellectual influences are usually the slaves of some defunct economist.” (Keynes 1936). To paraphrase Keynes, most of those who affect our lives through economic decisions are the slaves of some outdated introductory economics textbook. Textbooks lag way behind the cutting edge of the discipline. Therefore, the importance of a discussion on the introductory economics curriculum cannot be overemphasized.

The typical introductory economics textbook is conceived to provide students with the building blocks of more advanced economic theories, but the vast majority of these students have no intention of continuing their studies in economics. Thus, the information they learn is incomplete. Moreover, part of the material consists of oversimplified theories, with little or no external validation. Irrelevance may be why many first year students do not care for more than a passing grade in economics. William Becker (2003:157) writes that in introductory economics courses “bright students recognize the shortcomings of simplistic analysis, rightly dismiss it as irrelevant, but then wrongly dismiss all of economics with it.” Increasing the relevance of the undergraduate curriculum has potentially two positive outcomes. First, those who do not pursue an economist’s career are better equipped to make economic decisions. Second, more students may be attracted to study economics in depth, which, again, has the potential to empower future decision makers.

Sections 2 and 3 discuss introductory textbook theories of exchange rate determination, as examples of irrelevant or confusing learning material. Section 4 discusses briefly other similar examples. Section 5 seeks to identify more general flaws in the introductory textbook models and theories. Section 6 briefly discusses possible alternative approaches to teaching undergraduate economics.

PURCHASING POWER PARITY, A THEORY ROUTINELY REFUTED

It is the spring of 2011. Canadians patiently wait in long lines at the U.S. border. Many of them go shopping in the U.S., where prices are often lower than at home. The “law of one price” predicts that the increased demand for the lower-priced American products must drive prices up in the U.S. and down in Canada, such that prices eventually are the same in the two countries. According to this theory, the real exchange rate will swiftly converge to one after an occasional disturbance. This rarely, if ever happens. Most of the existing empirical studies agree that purchasing power parity is a poor predictor of exchange rates in the short and medium run, though it performs slightly better in the very long run (see, for instance, Taylor and Taylor, 2004:138, and Rogoff, 1996). In the long run, the half-life of an exchange rate shock is incredibly long, somewhere between 3 and 5 years (Rogoff 1996).

Here are a few examples where the law of one price fails. First, prices of gasoline in various countries, expressed in U.S. dollars per gallon are anything between \$9.63 in Istanbul, Turkey, and \$0.06 in Caracas, Venezuela (Daily Finance 2011). The law of one price implies that prices of identical products, such as gasoline are the same in all countries, which obviously is not the case. Second, if the law of one price held, one should observe convergence between the actual exchange rate and the purchasing power parity (PPP) exchange rate. PPP exchange rates are those hypothetical exchange rates that make the prices of equivalent baskets of goods to be equal across borders, when measured in the same currency. Figure 1 shows Canada-U.S. nominal and PPP exchange

rates in Canadian dollars per U.S. dollar. The graph shows that the nominal exchange rate rarely converges to PPP in the short and medium term.

(Insert Figure 1 here)

There are good reasons for PPP not to hold. One is that prices adapt to local conditions, such as costs of labour and real estate, preferences, income, market structure, and so on. The law of one price hardly holds even within a province or city, let alone across countries. Exchange rates are mainly the result of financial transaction, which are driven by such imponderable things as mood and expectations.

Although PPP does not explain the nominal exchange rate, it is still useful for international comparisons of standards of living. In addition, the concept of purchasing power parity is an important building block in modern macroeconomic theories. However, none of these other uses of PPP are the focus of standard introductory economics textbooks, where PPP is presented as a long run exchange rate determination model (e.g., Mankiw, 2011:286). While Ragan and Lipsey, 2008:871 present PPP as a possibly “correct” long run exchange rate, they acknowledge that it does not need to hold.

MACROECONOMIC MODELS OF EXCHANGE RATE

Most of the widely used introductory economics textbooks rely on some version of supply and demand in the foreign exchange market for models of exchange rate determination. The predominant approach is to emphasize the link between the balance of trade and the exchange rate. This view is, however, challenged by the observation that the vast amount of foreign exchange currency is traded in the market for financial assets, rather than the market for goods and services.

According to various introductory textbooks, the factors that determine the exchange rate are all those that change the money demand or supply in the foreign exchange market. Such factors as preferences toward a country's exports, home and foreign price levels, relative incomes across borders, fiscal or monetary policies, and trade policies are among the frequently mentioned determinants of the exchange rate. Most of them are hardly supported by empirical evidence.

Various textbook authors do not agree with each other on the effect of variables such as incomes or prices on exchange rates. Some claim that an increase in the price level abroad makes local currency appreciate, as per the definition of purchasing power parity (Case and Fair 2007), but others point out that the effect of changes in prices on the exchange rate depends on the elasticity of demand for tradable goods (Ragan and Lipsey

2011). Most textbook authors agree that inflation differentials are important determinants of exchange rates. Authors of empirical studies are not so sure.

How about income differentials? Some textbooks (McConnell, et al. 2010) still teach that a domestic currency must depreciate when the domestic income increases as compared to foreign income because domestic consumers spend more money on imports, thus increasing the demand for the foreign currency. Other textbooks disagree (Barro and Serletis 2010), based on empirical findings that the Balassa-Samuelson effect may actually work: growing economies tend to strengthen, not weaken their currencies.

Interest rate differential is a determinant of exchange rates that seems to be favoured by both textbook and empirical authors, which is consistent with the fact that the greatest share of currency transactions are in financial assets, rather than in goods and services. Unfortunately, finding that interest rate differentials are correlated with exchange rates is not very illuminating, since interest rates are, as well as the exchange rates, endogenous. Which of the many macroeconomic factors that textbooks find important in determining the exchange rate have empirical support? Not many, as it turns out. Recent studies find that the best explanatory variables for exchange rate are some measures of world commodity prices and interest rate differentials. Bailliu and King (2005) find that the following error correction model, which they call the Amano–van Norden equation, was capable of tracking well the U.S.–Canadian real exchange rate over a period of about 30 years. Here is the Amano–van Norden equation:

$$\Delta \log RFX = \lambda(\log RFX_{-1} - \alpha - \beta_1 \log COM_{-1} + \beta_2 \log ENER_{-1}) + \gamma INTDIFF_{-1} + \varepsilon,$$

where *RFX* is the real exchange rate, *COM* stands for world non-energy consumer good prices, *ENER* is a world energy price index, and *INTDIFF* is the interest rate differential. (Real exchange rate is measured by nominal exchange rate deflated by the GDP price indexes in the two countries.) It is remarkable how different this equation is from the textbook supply and demand model.

OTHER EXAMPLES WHERE THEORIES ARE AT ODDS WITH FACTS

Here is a typical mind-bending piece of theory, of which introductory economics textbooks are full and which are unlikely ever to be practical. This example is compiled from (Mankiw, Kneebone and McKenzie, Principles of Macroeconomics 2011). It describes the mechanism through which fiscal expansion affects the aggregate demand in an open economy with flexible exchange rate and perfect capital mobility. Here is how the theory goes.

Suppose government spending increases. Aggregate demand has a tendency to increase by an amount amplified by the multiplier effect, thus increasing the interest rate. Higher interest rate crowds out investment, which alleviates the initial increase in aggregate demand. Higher interest rate also attracts foreign investment, which appreciates the dollar. A stronger dollar reduces net exports, which in turn brings both aggregate demand and the interest rate back to their initial values. The

conclusion is that “an increase in government spending has no lasting influence on the position of the aggregate demand curve” (page 387 in the fourth Canadian edition.)

Are the implications of this scenario verified in reality? I can think of at least two facts that should be observed if this theory were true. First, countries with flexible exchange rates should rarely rely on fiscal policies to stimulate the economy. This was certainly not the case during the 2008 global recession. Second, automatic stabilizers should be ineffective under a flexible exchange rate regime, since their mechanism of affecting aggregate demand is the same as fiscal policy. This does not seem to be the case either, and many economists seem to think positive about the role of automatic stabilizers, whether the exchange rate is fixed or flexible. Many of the chained implications in such scenarios are more like wishful-thinking hypotheses than rigorously established results. For instance, it is hard to believe in a simple cause-effect relationship such as “a stronger dollar reduces net exports.” The exchange rate and net exports are more likely to be endogenous, determined simultaneously by other factors. External validation is rarely addressed in introductory textbooks.

WHAT IS WRONG WITH THE THEORIES WE TEACH?

First, introductory textbook theories are disconnected from reality. The previous examples show that theories of exchange rate determination rely too much on the trade

balance side of the foreign exchange market, while the largest market share goes to financial transactions. When international transactions in financial instruments such as stock and bonds are taken into account, interest rate differentials are found important by both theorists and empiricists. Unfortunately, introductory textbooks largely exclude the financial asset approach. An interesting question would be what happens when the financial assets being traded are the currencies themselves? In other words, how important foreign exchange speculation¹ is in the determination of exchange rates? To the extent that speculation is an important share of the foreign exchange market, expectations about future exchange rates should play an important role in the determination of current exchange rates. (Intermediate level textbooks, such as Mishkin and Serletis (2008) recognize the role of expectations in exchange rate determination.) Perhaps the exchange rate is so volatile because foreign exchange markets are highly efficient, like any other financial market. If currency is viewed as just another financial asset, volatility is a natural thing to happen.

Second, introductory textbook models should not be taught as building blocks for more elaborated theories. For most of the first year college students, the introductory courses are the only economics courses they take, ever. First-year students do not need only “building blocks,” but well-rounded information. Many economic issues, such as increasing public debts or aging population and increasingly stressed pension systems concern the students’ future. Studying such issues is sporadic in introductory courses. If not in their few economics courses, then when are these students supposed to learn about

¹ Following (Copeland 2008), speculation is understood here as buying something with the only purpose of reselling it later for a profit. One may think of speculation as a form of arbitrage, not in space, but in time.

these things? Here is what Salemi and Sigfried (1999) have to say about the introductory economics curriculum:

“At most institutions, Principles is taught as a broad survey course, and emphasis is placed on introducing a litany of concepts that prospective majors will need in later courses. This emphasis is inappropriate since few Principles students go on to major in economics.”

Third, intro textbooks emphasize too much the importance of perfect competition (Becker 2003). Therefore, many people learn to think in terms of demand and supply when trying to make sense of economic facts. However, very few remember under what conditions the demand and supply model is applicable. People would be surprised to find out that technically there is no market in the world that satisfies the assumptions of the demand and supply model. They would be surprised to hear that in most markets there is no such thing as a supply curve. Much of the sophistication of economics science is misused. People forget too easily the limitations of the theories they learn in school, but they still remember their conclusions. The abuse of economics models by half-knowledgeable but influential individuals can compromise the credibility of the discipline. For instance, there are many public voices that blame economics and economists for the failure to foresee the 2008 recession. As Coyle (2010) points out, economists cannot be blamed entirely for the ways greed and vested interests have abused theories such as market efficiency and risk diversification to justify their vicious practices. However, most of the instances of misuse of economic theories come not from

dishonesty, but from half-knowledge and half-understanding. Truncated memories of over-idealized demand and supply models may claim much of the apparent “failures” of economics to relate to real world events.

Fourth, intro textbooks rely too much on partial equilibrium. Consider the following question: How does the equilibrium wage change if there is an increase in population? The answer you get from students may depend on when the question is asked. If it is asked after the “labour market” chapter, students will say, technically correct, that the wage decreases because of increased supply of labour (Mankiw, Kneebone, et al., Principles of Microeconomics 2008). If the question was asked at the beginning of the semester, some smart students will notice that there are more people looking for jobs, which may decrease the wage, but the new workers and their families also need more goods and services, which may increase prices, therefore firms will expand and will need to employ more people, increasing the wage. While the former answer should be considered correct under the *ceteris paribus* assumption of a partial equilibrium labour market model, the latter better describes what actually happens. The “technically correct” answer was the consequence of what students learn about the labour market: that a shift in the labour supply curve changes the wage. But they are not told yet that this is only a small step in analyzing a complex economy, in which markets interact with each other. Really correct answers must take into account all the important factors. Students have to wait until the next course (intermediate microeconomics) to learn that. Unfortunately, about 95 percent of them will not take that second course, thus remaining with the false idea that immigration must lower the wages of the local workers. Incomplete knowledge

could be worse than no knowledge. Perhaps teachers should take an oath of doing no harm, the way physicians do (or so the legend goes).

STUDENTS NEED AWARENESS, PRINCIPLES, AND SKILLS

If the content or the way we teach in introductory courses is not good enough, what and how should we teach instead? The discussion about the goals of undergraduate economics education is not new (Stigler 1963); (Hansen 1986); (Salemi and Sigfried 1999). Diverging slightly from the acclaimed (Hansen 1986) “proficiencies,” I would keep it simple: Students need awareness, principles, and skills. Awareness is what students know about their country and other countries’ economies. It is mainly descriptive and comparative. Principles enable one to answer new questions and analyze new issues. Principles guide a person when making personal, political (for instance voting), or work related decisions. Principles make a good citizen. The teaching of basic economics concepts is currently vastly ineffective (Ferraro and Taylor 2005). Skills such as quantitative analysis, written and oral communication, and logical reasoning make a student valuable for potential employers. Skills give a person confidence and foster entrepreneurship.

Perhaps we should not “teach” anything, but engage students in examining contemporary issues from different perspectives. We should acknowledge various points of view. We should point out where there is consensus and where there is not. Each chapter in the

book could address one important real world question.² Instead of being method oriented, an introductory textbook could be problem oriented. The objects of inquiry may change from one edition of a textbook to another. Here are some examples of such questions: Should Canada allow for private provision of health care? What is the philosophy and structure of Canadian health care system? What is the issue of aging population? Should taxes on the rich be raised? Should governments provide free primary and secondary education? Is public education as efficient as private education? Current introductory textbooks emphasize theory over fact. Case studies are handpicked to “prove” the validity of theory, which gives students the bad example of a pseudo scientific method.

Perhaps we could include some notions of economic philosophy and methodology in an introductory course. Examining a concept from different perspectives not only enlarges students’ horizon, but helps them to better understand that concept. An example of such an approach is (Frank 2008), who looks at the controversy surrounding the method of cost-benefit analysis. The author identifies the strengths and weaknesses of this method in a clearly written, non-technical manner, through a dialog with its supporters and detractors. Granted, one will not learn how to do cost-benefit analysis from reading this article, but neither do first-year students. Students taking only introductory economics courses learn the basic tools that are needed to apply cost-benefit analysis, but they never get to use those tools. This is another instance where current undergraduate curriculum fails to provide the majority of students with well-rounded, complete knowledge. People who take only one economics course in their lives should form an attitude with respect to

² A similar approach was previously proposed by Leftwich and Sharp (1974). According to (Grimes 2009), this approach has not become popular because it is too costly in terms of instructor’s time.

economics, rather than attempting to learn how to do economics themselves. Students should learn how to critically assess economic information rather than to be left with some incomplete or misleading ideas about the nuts and bolts of a few reductionist models.

Perhaps we should provide our fresh students with a broader context of the economics discipline, including the landmark events in the history of economic thought and economic history. Economics depends on past facts to validate its theories. Past economic events, such as recessions have often triggered important breakthroughs in economics. It is amazing how little role these landmark events play in introductory economics textbooks. In undergraduate schools, economics should be about the economy, not about the science of economics.

CONCLUSION

This work is not about exchange rate theories or any other theory in particular. This work mainly argues that the current introductory economics content is irrelevant and confusing for the majority of students. A few reasons are discussed to support this assertion. First, most of the students taking intro courses do not intend to take other, higher level economics courses. These students need a well-rounded course instead of a “building-block” one. Second, an important part of the content in intro courses is misleading if not complemented by other courses. Third, students majoring in economics are taught

material that is believed to prepare them for grad school, but only a small fraction of them wish to pursue such a career path. These students receive information and training that they do not need. Last, many of the theoretical models in intro textbooks do not reflect state-of-the-art trends in the discipline. Moreover, they do not have empirical support.

The irrelevance of textbook content leads to lack of interest from the part of students, which reinforces poor achievement in learning principles, facts, and skills.

Undergraduate economics becomes interesting at the stage of “field” courses, which are more connected to current events than the introductory ones. As long as introductory courses are primarily about dry theoretical concepts, the interesting stuff does not even begin by the time most students finish all the economics courses they want to take. With poorly thought out introductory courses, the economic profession misses a unique opportunity of reaching out to the public. No wonder economics is exciting for economists, but dull for everyone else.

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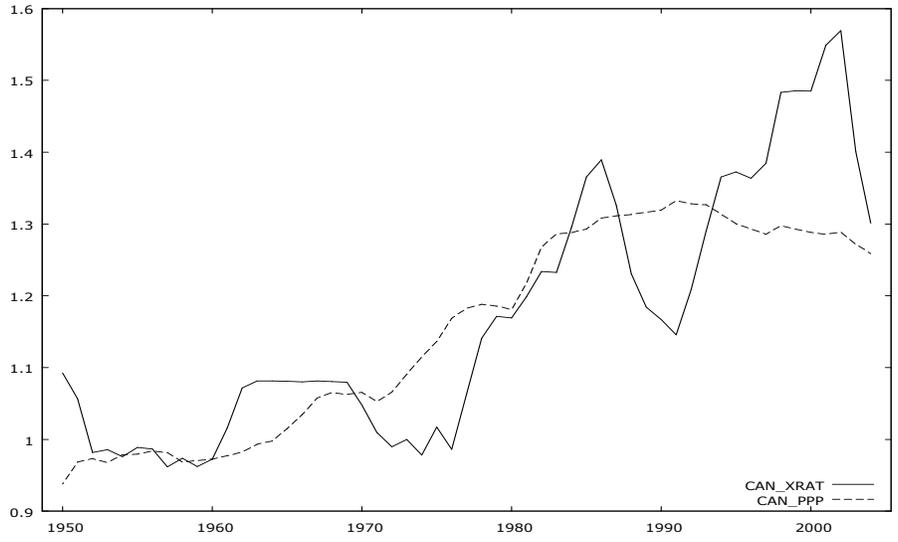


Figure 1: Canada-U.S. nominal and PPP exchange rates (in CAD/USD).
Source: Penn World Table 6.2, series CAN_XRAT and CAN_PPP