Teaching ECON 101 – Pairing the Mankiw and Komlos Texts

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Abstract: Mankiw's widely used ECON 101 textbooks have come under criticism by economists of various ideologies, who feel that it is time to supplant the mainstream neoclassical paradigm given rising inequality, climate change, andthe aftermath of the 2008-2009 financial crisis. Amongst the alternatives, the CORE text, and John Komlos' *Foundations of Real-World Economics* substantively stand out. While the CORE text is used at various institutions, it has also received myriad criticisms. Additionally, given the immense human capital investment in the neoclassical paradigm, there is inertia in changing wholescale to a different paradigm presented by the CORE text. The objective of this paper is to briefly appraise the CORE text and to showcase how the Komlos text can be paired with the Mankiw texts. This approach would be useful for those instructors not seeking a radical overhaul in teaching pedagogy.

Keywords: ECON 101; G.W. Mankiw; CORE; John Komlos.

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1 Introduction

Mankiw's widely used ECON 101 textbooks have come under criticism by economists of various ideologies for upholding the mainstream neoclassical paradigm. This paradigm rests on the foundations of perfect competition, perfect information, market equilibrium, the supply and demand model, and rational agents. Those who favour alternatives to the neoclassical paradigm feel that it is time to deprivilege it in teaching ECON 101. They believe that students ought to learn economics in the context of monopolies and oligopolies, asymmetric information, game theory, and irrational actors. Amongst the competing alternatives, some are more radical than others. Where Earle, Moran, and WardPerkins of the Post-Crash Economics Society prefer a multi-disciplinary liberal education approach in Economics instead of the current math-centred approach (Nelson, 2018), others prefer a data-centred approach using statistical tools (Smith, 2019).

There are alternatives to the Mankiw texts, such as *Principles of Economics in Context* by Goodwin et al. (2019); *Microeconomic Principles and Problems: A Pluralist Introduction* by Schneider (2019); and *Introducing a New Economics: Pluralism, Sustainability, Justice* by Reardon et al. (2018). Each deserves an in-depth review of its own, instead of a surface level cursory review. Otherwise, including all of them in one paper comes at the cost of either the paper becoming too long, or it ends up being thinly spread with a loss of focus. However, amongst the alternatives to the Mankiw text, two stand out. One, the CORE text because it has been the most successful in challenging the position of the Mankiw texts in terms of adoption at universities worldwide and given its online resources offered freely to instructors and students. Additionally, the CORE text has recently been promoted by Bowles and Carlin (2020) in the *Journal of Economic Literature*. Other alternatives do not share this level of recognition and success. And two, the text by Komlos (2019), which is in its second edition and is aptly titled, *Foundations of Real-World Economics: What every Economics student needs to know.* This book has been recently reviewed by many, including Burnazoglu and Ostermeijer (2020), recommending its use as a complement to the CORE text. According to Friedman (2015), the Komlos text is "more a critique of existing theory than the presentation of a substitute model." Since, the Komlos text has received significant attention through its second edition, and since Komlos has engaged with both the CORE text and the neoclassical paradigm,[1] it is selected as one alternative to the CORE text for the purpose of this paper. The choice of reviewing the Komlos (2019) text along with the CORE text and the Mankiw texts as a triad is buttressed by Samuelson's observation (2019) that both the CORE text and Komlos text substantively stand out.

While some instructors prefer a comprehensive overhaul in teaching ECON 101 by replacing the neoclassical paradigm, many who have made immense human capital investment in the neoclassical paradigm would be reluctant to shift radically to a new teaching pedagogy. Likewise, economics students, who are often trained rigorously through models and equations, are

[1] Komlos (2019b) has critiqued the CORE text just as he has critiqued the neoclassical paradigm upheld by Mankiw.

not necessarily prepared to sustain arguments, as they are wielded profusely in social media spaces. Yet, both instructors and students are increasingly interested in understanding issues of rising inequality, climate change, the aftermath of the 2008-2009 financial crisis, and the ongoing COVID pandemic. This necessitates engagement in a dialectical approach of contrasting the lessons from the neoclassical paradigm with opposing frameworks. For instance, where the neoclassical paradigm illustrates price ceilings and floors in a competitive market through a supply and demand model, Komlos (2019) illustrates ceilings and floors via the monopoly/monopsony models. Indeed, there is greater benefit to pair texts from diverse paradigms than to match those that already share a similar worldview.

Therefore, the objective in this review is to evaluate the criticisms against the neoclassical paradigm upheld by the Mankiw texts, argue for dialogue, appraise the novelty and the limitations of the substitute CORE text, and to showcase how Komlos (2019) can be critically paired with the Mankiw texts, especially for those seeking a balanced approach for change, given significant human capital investment in the neoclassical paradigm, instead of a radical overhaul in teaching pedagogy. This review is structured to first highlight the limitations of the Mankiw text and to argue for a dialogue in Section 2; appraise the CORE text in Section 3; and showcase in Section 4 how a few key topics can be addressed through pairing the Mankiw and the Komlos texts. Section 5 offers concluding remarks.

2 The Mankiw texts and the case for a dialogue

2.1 Limitations of the Mankiw texts

The Mankiw texts are critiqued for upholding the mainstream neoclassical paradigm. Bowles and Carlin (2020), and Komlos (2019) highlight the limits of markets and competition because of the ubiquity of monopolies and oligopolies. A chief concern is that students want to address the pressing issues of poverty, inequality, climate change, and automation but instead learn abstract economic theory and mathematical equations (Nelson, 2018). In addition, the neoclassical paradigm does not emphasize the advances made in behavioural, information, and experimental economics. Both Bowles and Carlin (2020) and Komlos (2019) question the assumption of rationality and optimization by discussing cognitive limitations, bounded rationality, and satisficing. Instead of privileging the standard supply and demand model, they emphasize asymmetric information and principal agent problems from information economics and fairness, rather than efficiency from experimental economics. In contrast, Mankiw relegates these topics to Chapter 22, "Frontier of Microeconomics," even as the frontier on imperfect information was reached over thirty years ago (Rosalsky, 2018).

Mankiw has responded to some of these criticisms. On the currency of content, he concedes that the growth of behavioural economics has been one of the most important developments; and post 2008-2009 financial crisis, he discussed bank capital and leverage (Mankiw, 2020a). Additionally, he provides a full chapter on inequality in an online chapter of his ECON 101 textbook. However, he cautions that reframing mainstream economics through the lens of asymmetric information and behavioural economics would be idiosyncratic even as they are important topics (Mankiw, 2020b). Moreover, in contrast to Bowles and Carlin (2020) he asserts

that the single most important tool to understand market economies remains the supply and demand model (Mankiw, 2020b). Additionally, he argues that the capacity of students to absorb information does not expand just because economic knowledge does (Mankiw, 2020a), and that we must avoid information overload, and that less is more (Mankiw, 2020b). In short, while Bowles and Carlin (2020), and Komlos (2019) advocate addressing real life economic problems, Mankiw remains a proponent of clarity before nuance.

2.2 The case for a dialogue

Some instructors would prefer a complete overhaul in teaching ECON 101 by replacing the neoclassical paradigm completely with an alternative. However, Colander (2015) has argued that significant human capital has been developed in the neoclassical paradigm so that many instructors stick to their training and are loath towards a complete overhaul. Additionally, economics instructors "can continue to teach with only slight modifications" and that before making any changes, they should ensure that they are not diluting "the strengths of the current presentation" (Colander, 2005).

The focus, therefore, in this paper is not on a radical overhaul but rather on how to tweak the neoclassical paradigm from within so that students can see the chinks in the armour. Such an approach creates room for a dialogue in economics pedagogy, as true pluralism includes paradigms we agree with and disagree with. As such, this paper is not necessarily for radical economists but for those who remain wedded to the mainstream neoclassical paradigm and who are not yet ready to divorce that paradigm completely, especially as upper-level courses and graduate school still rests on that paradigm. This means ECON 101 instructors must prepare at least some students for that, for not doing so would be disserving students. Yet, by including a critical approach in their presentation, they can simultaneously introduce students to a dialogue in the study of economics.

This review is by an economist for fellow economists. It is more of a discussion within the field rather than "social epistemology," which treats knowledge as a collective endeavour. This means that in the interest of retaining focus and for the purpose of internal dialogue within the field, what outsiders think of how ECON 101 is taught is not addressed in this paper, as that deserves a separate paper of its own. Additionally, while there is value in teaching alternative theories to students, as Van Steveren (2021) has shown, my focus is on a critical look at the neoclassical paradigm so that students can see, for instance, how its conclusions drastically change by tweaking the assumption from a competitive to a monopsonistic market, as in the case of the minimum wage. Additionally, my focus is on the CORE and the Komlos texts, which may seem like a binary choice as alternatives to the stand-alone Mankiw texts, and therefore may belie a pluralist approach to economics education. However, it is also important to recognize that other options are not discarded but simply relegated to separate (future) papers in the interest of maintaining critical depth and focus. Finally, in terms of accessibility for students, only the CORE text is freely available. However, the need for a dialogue demands that instructors do not confine the education of economics to just that text, and to find creative solutions to ensure low cost or free accessibility to students even if they draw material from various texts.

In short, my approach is to uphold a dialogue with the neoclassical paradigm, to show the chinks in its armour, instead of a radical overhaul in teaching ECON 101. Furthermore, to foster a dialogue amongst economics instructors and to retain an in-depth critical focus, my emphasis is on the CORE text, as a freely available well-recognized resource, and the Komlos text, as it significantly facilitates the dialogue with the mainstream neoclassical paradigm.

3 The novelty and limitations of the CORE text

3.1 The novelty of the CORE text

According to Bowles and Carlin (2020), ECON 101 textbooks uphold neoclassical economic theory based on the assumptions of rational individuals, perfect information, and perfectly competitive markets; whereas the CORE text is based on the assumptions of cognitively limited individuals, asymmetric information, and monopolistic and oligopolistic markets. Their approach is to bring the back of the book content to the forefront. They argue that where Mankiw highlights equilibrium and competition, the CORE text emphasizes history and institutions. Referencing Paul Samuelson, they underscore the point that space for new material on contemporary economic problems is made by reducing the content on marginal analysis.[2] They mention that the CORE text emphasizes feasible sets, indifference curves, and Nash equilibrium instead of the standard supply and demand model. Additionally, the CORE text extensively uses empirical evidence and data analysis, as it is based on inductive rather than deductive learning. On the other hand, Mankiw concedes that statistical tools can be employed in ECON 101 classes, as statistical tools are introduced more fully to high school students and agrees that we should start introducing students to some of the empirical methods used in economics research (Mankiw, 2020a). However, while Mankiw relegates data-based approach to the future, the CORE text already manifests that future.

3.2 Limitations of the CORE text

Despite its novelty through an induction data-based learning, challenge to the neoclassical paradigm, and provision of online resources for instructors, the CORE text has been subjected to various criticisms. An obvious one is that its greatest strength on inductive learning is also its greatest weakness, as according to Mankiw, clarity should precede nuance. In trying to do too much, it ends up blurring the lines between micro and macro and disrupts the sequential introduction of economic concepts in favour of an eclectic approach. As such, information overload becomes overwhelming. Cassidy (2017) claims that "the CORE curriculum may be challenging to some students." Likewise, Bowles and Carlin (2020) concede that on the complexity of language, the CORE text is "somewhat more complex than Mankiw's."

Apart from clarity there are issues of pluralism. Reteaching Economics, a network of U.K—

[2] For a similar and updated argument, see Jones (2020).

based young academics, claims that the CORE text is not radical enough (Nelson, 2018). Likewise, the Post-Crash Economics Society at the University of Manchester states specifically in its report that, 'the monopoly of neoclassical economics and the absence of any competing theories is the biggest failing of the CORE project' (PCSE, 2014, p. 55). Mitchell (2017) strongly claims that the CORE text is "replete with standard neo-liberal monetary myths," and that it is "a major disappointment." Likewise, Cassidy (2017) argues that the CORE approach is not radical enough for it does not sufficiently provide exposition on Marxian or Modern Monetary Theory. In response to such criticisms, Bowles and Carlin responded that they integrated ideas from polar opposites like Coase and Marx; however, Negru (2018) argues that integration implies a utopian unitary focus rather than pluralism.

While applauding many aspects of the CORE text, Komlos (2019b) has also criticized it for failing to account for opportunistic behaviour where corporations take advantage of people with lower cognitive abilities and education; that low income individuals cannot afford to acquire enough information, which impedes efficiency; and that it fails to account for personal characteristics like IQ and cognitive ability that influence economic outcomes like lifetime earnings. There exists another problem, as Colander (2015) argues, that that too much human capital developed in the neoclassical paradigm means that current instructors stick to what they have been trained in, that teaching something radically different is met with inertia, and that most students merely seek the "certification aspect of education than the learning aspect." These factors impede the supplanting of the neoclassical paradigm and therefore the Mankiw texts by the CORE text.

These criticisms suggest that where supplanting the neoclassical paradigm of mainstream economics by the CORE pedagogy is fraught with challenges, an alternate approach, which may be more suitable for those who do not want a radical overhaul in their teaching pedagogy would be to pair the Mankiw and Komlos text.

4 Pairing the Mankiw and the Komlos texts

The motivation for pairing the Mankiw and the Komlos texts comes from the observation that the Komlos text is arranged so that it parallels a "standard course curriculum," and that it is "more a critique of existing theory than the presentation of a substitute model" (Friedman, 2015). This is important, as unlike the CORE approach, Komlos does not integrate diverse writers like Coase and Marx, which allows for keeping different approaches distinct and upholding pluralism of thought. Another motivation for this pairing approach, instead of a radical overhaul, comes from Colander (2005), who, despite his criticisms, has expressed his hesitation to "change too much," and that economics instructors "can continue to teach with only slight modifications." Finally, in the conclusion of his online chapter on health economics, Mankiw contrasts the arguments of the political left, who seek universal health coverage, with those on the political right, concerned about long waiting times for medical procedures, in a balanced fashion. Additionally, in his paper "Defending the one percent," he has a sizeable section "Listening to the Left," where he engages with three principal arguments from the left on greater income redistribution. It is this type of

approach that would be more productive in teaching economics given the inertia that impedes a radical overhaul.

The Komlos text is not without its share of critiques. Friedman (2015) argues that his framework has a "slant towards a psychological critique" that emphasizes bounded rationality instead of human mistakes. Burnazoglu and Ostermeijer (2020) raise the issue of imbalance in that Komlos attributes opportunistic behaviour largely to the private sector and not as much to government bureaucrats. They argue that his treatment of pluralism is superficial, that the message from his arguments "gets lost between empirical facts and numbers," and that his ideas are repeated in different chapters. However, these criticisms do not impede using this text as a complement to the standard Mankiw texts in ECON 101 courses. Thus, the following illustrates the contrasting methodology of the two texts and how some key topics highlighted by Komlos can be juxtaposed with their treatment in the Mankiw texts to showcase the strengths and limits of incorporating the Komlos critique in ECON 101.

4.1 Methodology - Nuance versus Clarity

In terms of methodology, Mankiw argues against information overload, while insisting clarity before nuance. However, Komlos writes that the argument that themes of opportunistic behaviour, heterogeneous cognitive ability, non-rationality, inequality, and imperfect information amongst others, cannot be studied in ECON 101 because of their complexity or time limitations is "a pretext" (p. 265), by which he means a simple excuse. He asserts that the argument that foundations must be studied before sophisticated aspects is misguided, as it is more efficient to learn the discipline correctly the first time instead of unlearning and correcting it. Additionally, just as Mankiw justifies his position by claiming that "the typical student is not a future economist but is a future voter" (Mankiw, 2016), Komlos justifies his position by arguing that many students do not study economics beyond the first year and that nuance can be taught at the ECON 101 level (pp. 11-12). Komlos alludes to the risks of economism that without nuance, ECON 101 is reduced to inculcating simplistic slogans as "lowering tax cuts creates jobs," even as the rich spend largely on conspicuous consumption or overseas investment, neither of which creates domestic jobs (pp. 14-15). However, Mankiw also states that most economists agree that most tax cuts do not generate sufficient growth to increase tax revenue, and effectively argues against Trumponomics (Mankiw, 2019b, 2020b). In short, both Mankiw and Komlos adopt common positions to some extent even given their differences on balancing nuance and clarity in teaching pedagogy.

4.2 Methodology - The limits of nuance in ECON 101

Komlos discusses topics to address in ECON 101, which, however, are typically addressed at the intermediate level or in specialized elective courses. For instance, in the section on prospect theory, he discusses how risk averse people are willing to pay a premium to avoid uncertain income (pp. 68-71). However, the model he uses is usually covered in the chapter on uncertainty in intermediate microeconomics. As an example, Chapter 5 titled "Uncertainty and consumer behaviour," in the Pindyck and Rubinfeld (2018) text explains this topic in detail after introducing the basic concepts of probability and expected value and after setting up standard consumer theory

that rests on indifference curves and budget constraints in the previous chapters. Therefore, bringing this topic earlier at the ECON 101 level is problematic without building the detailed building blocks of consumer theory and basic statistics. Alternatively, while some topics can be introduced at the ECON 101 level, others that require a more technical treatment are best left for intermediate level courses.

4.3 Methodology - Violating the conditions of competitive markets step by step

Komlos argues that markets only work towards efficiency with appropriate government-provided laws and institutions (p. 49). He argues that bounded rationality, opportunistic behaviour, asymmetric information, monopolies and oligopolies, transaction costs, and pollution prevent markets from working efficiently (p. 31), and that competition requires the conditions of many buyers and sellers, undifferentiated products, absence of transaction costs and negative externalities, rationality of both parties and knowledge of product quality (p. 101). However, Mankiw also confirms that markets need institutions to enforce property rights and that "the invisible hand does not ensure that everyone has sufficient food, decent clothing, and adequate health care" (Mankiw et al., 2020c, pp. 12-13). By highlighting these conditions and their subsequent violations students can receive a nuanced treatment in ECON 101.

This means instructors will have to highlight these conditions and add to it the condition of perfect information early on, while discussing Principles 6 and 7 in the Mankiw text on free markets and government intervention. Then gradually, they can take students through market failure in the presence of externalities and market power through monopolies and oligopolies, as these conditions get violated. Additionally, they need to highlight the assumption of zero transaction costs before discussing the Coase Theorem, and the violation of perfect information as they discuss the problems of adverse selection, moral hazard, and the principal agent problem. Finally, the violation of rationality leads towards topics in behavioural economics. By focusing on the conditions and their violations students get a clear framework and a methodical step-by-step tinkering with that framework instead of being flooded with a deluge of information. In short, through a methodical treatment of topics, the Komlos critique can be incorporated in ECON 101.

To summarize, three lessons arise from the contrasting methodologies: a balance must be struck between nuance and clarity; there is a limit to the nuance that can be introduced in ECON 101; and that an incremental, methodical approach is better than offering a deluge of information. With these lessons, the following key topics raised by Komlos can be studied comparatively with the Mankiw text.

4.4 Topic - Irrationality and the limits of marginal analysis

Komlos states that utility maximization assumpes that individuals are rational, have perfect information, understand the fine print, and have stable preferences so that they are not manipulated by smart sellers, and make reasoned decisions instead of basing them on habit, intuition, emotion, conditioning or the subconscious mind (p. 57-58). However, given unequal distribution of wealth, education and cognitive abilities, information is costly to acquire, which allows sellers to engage

in opportunistic behaviour and exploit individuals through fine print and information overload (pp. 59, 93). Therefore, given bounded rationality and costs of acquiring information, consumers cannot engage in utility maximization and therefore make decisions based on rules of thumb, i.e., satisficing instead of optimizing (p. 60-63). Similarly, Komlos argues that firms use rules of thumb (e.g., the mark-up rule) to obtain the selling price (p. 100), and heuristics instead of marginal product to determine wages (p. 116). Thus, the violation of rationality, costs of acquiring information, and rules of thumb indicates that both consumers and firms are satisficing without using marginal analysis (p. 110). This impugns the usefulness of teaching marginal analysis at the ECON 101 level (Jones 2020).

However, Mankiw also considers the violation of rationality in the final chapter when he introduces behavioural economics showing that "people aren't always rational," in the case of drug addicts, who are not looking after their best interests (Mankiw et al., 2020c, pp. 150-151). Furthermore, the concrete framework of rationality which assumes that consumers can rank their preferences, make choices transitively, and that they prefer more to less, is not really developed until intermediate microeconomics. In contrast to the topic on market power, where an incremental violation of conditions allows for a more structured approach, the issue of rationality is not comprehensively presented at the ECON 101 level. Therefore, as an improvement, some parts of the final chapter in Mankiw can be discussed earlier. In this regard, students can be shown how exuberance leads to bubbles in the market and how the time inconsistency problem explains problems in quitting smoking or saving for retirement. However, the limits of marginal analysis do not necessarily diminish the argument for teaching it, as subsequent analysis on externalities and the cost benefit analysis in public finance depend on this framework.

4.5 Topic - Market power of corporations and the role of governments

Komlos notes that firms, rather than being price takers, determine prices and wages, manipulate consumer wants, and lobby politically to amass more market power (p. 99). He argues that while economists allude to voting with dollars, this is not a democratic process, as dollars are not equally distributed (p. 148), and therefore the power of giant corporations impedes democracy. He argues that incumbent firms use advertising as a barrier to entry (p. 102) and acquire monopoly power through branding and copy rights. As an example, he observes that the prices of Apple products have not changed much, since competition is based on product hype through advertisement instead of prices (p. 103).[3] Additionally, he argues that such giant corporations benefit from basic research on the internet and information technology, which was initiated by governments at taxpayers' expense, and therefore a surtax would allow taxpayers to earn a return on their investment (p. 117).

However, the Mankiw texts already address the issues of market power through three chapters on Monopoly, Oligopoly, and Monopolistic Competition. It is part of every ECON 101 course to

[3] For an interesting contemporary example, see Sanchez (2020).

underscore how a downward sloping demand curve and the inelasticity of demand curve confers monopoly power on the firm, enabling firms to engage in price disc2019
rimination. The benefits and problems with advertisement are addressed in the chapter on Monopolistic Competition, where it is shown that while advertisement impedes competition through brand loyalty, it also offers information on product quality, thereby reducing the problem of imperfect or asymmetric information. However, according to Mankiw, the threat of firm power to democracy is overstated, as the wealthy include both supporters of the right and the left; and that in 2008 and 2012, the U.S. was able to elect a left-leaning President "committed to increasing taxes on the rich" (Mankiw, 2015). Moreover, he addresses the argument that since the rich benefit from the services provided by the government, they bear the responsibility to finance them. Mankiw counters that an increasing share of government spending has been for transfer payments instead of the goods and services provided by the government (Mankiw, 2013).

4.6 Topic - Inequality, income redistribution, and Rawlsian philosophy

Komlos mentions that in the U.S., between 1982 and 2016, productivity increased by 94% but compensation only increased by 40%, which he attributes to the market power of firms and weakening labour unions, rather than outsourcing or technology (p. 112). Based on this fact and rising inequality, he references Rawlsian philosophy for income redistribution (p. 116). He criticizes that mainstream economists are inconsistent in their approach, as they argue against redistribution on the basis that utility cannot be compared across individuals, but they have a single representative agent in macroeconomic models (p. 169). Furthermore, he asserts that mainstream economists argue that redistribution is not pareto efficient but venerate technological change, even as it is never pareto efficient (p. 196). Additionally, he claims that while economists argue that income redistribution reduces the incentive of high productivity workers to work and invest, the only effect of redistribution would be to reduce conspicuous consumption and negative externalities (p. 212).

However, the Mankiw text also presents Canadian data, showing that from 1976 to 2014, while labour productivity increased annually at 1.12%, mean real hourly earnings only increased by 0.61% (p. 410). Though, in contrast to Komlos, understanding this gap between productivity and real wage growth is relegated to ongoing research; and that this could be due to the concentration of productivity gains in higher income occupations (p. 411). In his chapter on inequality, Mankiw provides a nuanced picture on the problems in measuring inequality due to in-kind transfers, the economic life cycle, and the distinction between transitory and permanent income (p. 446). Additionally, he argues that even under Rawls' criterion of maximizing the well-being of the least well-off person, disparities in income remain because of the impact of redistribution on the incentive to work hard (p. 451). Mankiw also critiques Rawlsian philosophy: a risk averse person in the original position behind a veil of ignorance would want insurance against having a less fortunate economic position; this argument could be extended from government mandated income redistribution to the case for government mandated kidney donations (Mankiw, 2013). Instead of income redistribution, he supports universal basic income (Mankiw, 2021). Thus, while both Komlos and Mankiw highlight the issue of inequality, the reasoning behind its cause is

different, as is their position on Rawls. This necessitates presenting both types of arguments, and it also shows that the issue of inequality can be effectively addressed at the ECON 101 level.

4.7 Topic - Price floors and ceilings

Komlos argues that the standard supply and demand model is inappropriate to analyze the impact of the minimum wage (a price floor) in oligopolistic markets, as it does not create unemployment and that the increase in wages comes out of firm profits (p. 159). He argues that firms like MacDonald's make profits because of location, brand recognition, a unique menu, and therefore have market power. Additionally, many teenagers and poor people are unable to commute outside their neighbourhoods, which further confers market power to such firms, as they access a captive labour market (p. 160). This indicates that instead of the standard supply and demand model, the monopsony market model would be more appropriate to introduce the topic of minimum wage at the ECON 101 level. There already exists some precedence with Ragan (2020).

Similarly, Komlos notes that while mainstream economists argue that price ceilings create shortages and/or lower product quality, there are several examples of price gouging by pharmaceutical companies (p. 161), which necessitates a cap on prices. Additionally, he states that capping the salaries of most CEOs would not be inefficient, as their earnings are mostly rent, and that they would work just as hard at even 10% of their current salaries (p. 119). He illustrates the impact of a price ceiling through the monopoly market model: as long as the price ceiling is set at the marginal cost or higher, the dead weight loss due to monopoly is reduced by the introduction of a price ceiling. In short, differing with Mankiw, who showcases the impact of ceilings and floors in perfectly competitive markets, Komlos makes a strong case for analyzing their impact through the monopoly and monopsony market models, which can both be easily accommodated at the ECON 101 level.

4.8 Topic - Measuring unemployment, and trickle-down economics

In discussing macroeconomics, two major themes stand out in the Komlos text: an alternate measure of unemployment, and the critique of trickle-down tax cuts. Komlos advocates including both involuntary part time workers and discouraged workers as unemployed, instead of treating them as employed and out of the labour force, respectively (p. 189). He also argues against trickle-down economics (p. 210). He argues against tax cuts by asserting that such measures would limit government revenues for infrastructure, education, healthcare, and renewable energy (p. 271). Instead, he favours increasing tax rates up to 70%, which would not negatively impact output or government revenues, instead reducing rent-seeking by millionaires (p. 210). Moreover, he argues against one of the fundamental lessons in neoclassical macroeconomics that budget deficits crowd out private investment. He asserts that crowding out does not happen when unemployment is persistent or when the government spends on education, healthcare, basic research, and renewable energy, since all complement private investment (pp. 206-207).

However, the Canadian edition of the Mankiw macro text also includes a table that shows the official unemployment rate can be adjusted to account for such categories of workers (Mankiw et al., 2020d, p. 194). Mankiw also states that most economists agree that most tax cuts do not generate sufficient growth to increase tax revenue (Mankiw, 2020b). Additionally, the intermediate Mankiw text on macroeconomics provides a nuanced treatment of trickle-down economics in the appendix of the chapter on open economy (Mankiw and Scarth, 2014, pp. 170-174). Whereas for a closed economy, tax breaks for savings are shown to lead to higher capital accumulation, greater labour productivity, and therefore increased living standards; in the small open economy, higher savings lead to higher income for domestic capitalists, as foreign interest obligations decline; thus, there is not strong support for this theory in a small open economy. However, this conclusion requires constructing an additional model that would add complexity at the expense of clarity at the ECON 101 level. Therefore, while the alternate definition of unemployment is easily incorporated, the discussion on trickle-down theory is not as easily incorporated at the ECON 101 level.

4.9 Topic - Free trade and tariffs

In contrast to other ideologies within Economics, the neoclassical argument for free trade is based on the Ricardian model of comparative advantage, where a country is able to export a good if the opportunity cost of producing it is lower than that of the importing country. However, Komlos argues that this theory does not account for trade deficits and exchange rate manipulations. Additionally, it assumes that those who lose jobs would find employment in a different sector, which contravenes pareto efficiency if they are unable to do so and hence are made worse off. Furthermore, apart from other concerns, this theory assumes that goods are produced competitively, whereas most traded goods are produced by oligopolies (pp. 219-220). Komlos further argues that the Ricardian model was refuted by Krugman, as countries today trade the same goods among themselves, for the motivation is not comparative advantage but rather economies of scale, branding, and diversity in consumption (p. 227).

Extending this line of thought, he shows how the supply and demand model, which is usually used to show the benefits of free trade and the dead weight loss due to import tariffs, can be used to show the welfare enhancing property of tariffs. He argues that the model assumes full employment but with unemployment there would be a gain to workers after the tariff is imposed, which through the multiplier effect would enhance welfare (pp. 220-222). Additionally, Komlos argues that even if consumers lose because of higher prices, these losses are dispersed amongst many people, whereas the gains are concentrated among the smaller group of workers and that the benefit of low-priced consumer goods under free trade cannot trump the cost brought by underemployment (pp. 222, 225). He also states that while tariff reduction for free trade increases consumer welfare, it says nothing about economic growth; and that China was able to translate the gains from trade by investing their profits; unlike the USA where consumers buy goods that do not have lasting growth effects (p. 223).

On the other hand, the Mankiw text (2020c) addresses arguments for the restriction of free trade in detail, including the infant industry argument, which confers protection to politically powerful industries (p. 209). Though, it states that without compensating those who lose from trade, opening up trade can expand the economic pie but leave some with a smaller slice (p. 202). In short, by referencing Krugman's work on free trade, and by critiquing the standard supply and demand model on trade and tariffs, Komlos challenges the conventional position on free trade. While such a position may not necessarily be affirmed by Krugman, addressing these arguments in juxtaposition to those from the neoclassical paradigm on free trade would offer ECON 101 students a richer experience.

In summary, in terms of methodology, a balance must be struck between nuance and clarity; and an incremental methodical approach is better than offering a deluge of information. Viewed in this light, there are gains to pairing the Komlos and Mankiw texts, specifically by addressing the key topics that Komlos highlights which can be easily incorporated in ECON 101, as opposed to others that require a more technical analysis at higher levels. Amongst these topics, there is a strong case to address irrationality in ECON 101, along with the conditions and assumptions underlying competition before they are subsequently violated; and to study externalities, market power and asymmetric information. Additionally, there is a case to study inequality at the ECON 101 level instead of spending time on excessive calculations. However, marginal analysis, despite its technicality and criticisms has to be taught for cost benefit analysis in public finance and other economics courses. Price ceilings and price floors, trade and tariffs, income redistribution and measuring unemployment differently, the power of corporations, and the subsequent role of governments with tax cuts, can all be considered through richer discussion in ECON 101, whereas the topics on uncertainty and trickle-down economics are better addressed with a proper theoretical background at the intermediate level. Finally, the pairing up of the two texts along these key topics can be illustrated by Table 1:

Table 1: Principal differences between Mankiw and Komlos on key topics

Topic	Mankiw	Komlos
Rationality	Rational agents with perfect information	People have cognitive limits and can be exploited
Marginal analysis	Individuals can undertake cost benefit analysis	Individuals do not optimize but use rules of thumb and therefore satisfice
Market power	Seen as violation of conditions of perfect competition	The de facto case is monopolies and oligopolies

Government role	A lot of government spending is on making transfer payments	Governments must impose a surtax on corporations to benefit taxpayers for their investment in IT research, infrastructure, etc.
Inequality	More research is required to understand its causes, partly due to skilled biased technological change	Due to market power of firm and rent seeking behaviour
Income redistribution	Supports universal basic income	Supports the Rawlsian criteria for income redistribution
Price ceilings and floors	Taught via competitive markets supply and demand model	Taught via monopoly and monopsony models
Measuring unemployment	Shows the alternate method for computing the unemployment rate	Supports including involuntary part time workers and discouraged workers in defining the unemployment rate
Trickle-down theory	Works in closed economy but not so much in a small open economy	Low tax rates for top earners limits government funds for infrastructure, education, and healthcare
Free trade and tariffs	Trade can make every nation better off; tariffs introduce dead weight loss	Ricardian model is based on comparative advantage, but current trade is on same goods; tariffs can be welfare enhancing

5 Conclusions

The context for this paper emerged from the observation that both instructors and students are increasingly interested in understanding issues of rising inequality, climate change, and the aftermath of the 2008-2009 financial crisis. Increasingly, the mainstream neoclassical economics paradigm is found wanting, as it rests on the textbook foundations of perfect competition, perfect information, market equilibrium, the supply and demand model, and rational agents.

The objective in this review is to highlight the criticisms received by the neoclassical paradigm upheld in the Mankiw texts; appraise the novelty and the limitations of the substitute

CORE text; and to showcase how Komlos (2019) can be critically paired with the Mankiw texts. The idea for using a complement text instead of supplanting the Mankiw texts with a substitute works especially for those seeking a balanced approach for change. This necessitates engaging in a dialectical approach of contrasting the lessons from the neoclassical paradigm with opposing frameworks. Therefore, this review was structured to address two substantive alternatives to mainstream neoclassical economics.

Principal criticisms raised include the relegating of nuance found in behavioural and information economics to the end of the book chapters, and the need for incorporating data analysis at the ECON 101 level. In response to these criticisms, the counter arguments were raised that clarity should precede nuance and that data analysis can only be undertaken given prior training in statistics. However, addressing these criticisms does not diminish the challenge posed by the alternate CORE text or the Komlos text. Therefore, in Section 3, the merits and critiques of the CORE text were highlighted followed by Section 4 on pairing the Mankiw and the Komlos texts based on the key topics underscored by Komlos.

The CORE text brings topics from the back of the standard textbooks to the front and engages students with data analysis, a reality that Mankiw postpones. Additionally, its strength is as an open access resource for both instructors and students. However, the problem with the CORE text is that instead of a sequential treatment of topics, it offers a mish mash of topics where the lines between micro and macro are blurred, and which poses the tradeoff between simplicity and reality. Such an approach may pose an overwhelming challenge to students, who seek a more structured approach to the topics. Additionally, the CORE text has been criticized by many economists upholding alternative paradigms, for not being radical enough in its departure from the mainstream.

There is inertia given that instructors trained in the neoclassical paradigm would not necessarily want a radical overhaul in their teaching pedagogy. This means instead of supplanting the Mankiw texts with a completely different approach, it is relatively easier to pair the Mankiw text with a complement text like that of Komlos, which is presented as a critique instead of a substitute paradigm. There are gains in adopting this approach, as the Komlos text is structured around the standard textbook format and raises several key topics that can be studied comparatively at the ECON 101 level. Though, this text pairing is more justified for some topics than for others, e.g., there is a strong case to address irrationality in ECON 101, along with the conditions and assumptions underlying competition before they are subsequently violated to study externalities, market power, and asymmetric information. Additionally, there is a case to study inequality in ECON 101 instead of spending time on excessive calculations. However, marginal analysis, despite its technicality and criticisms, has to be taught for cost benefit analysis in public finance and other economics courses. Price ceilings and price floors, trade and tariffs, income redistribution, measuring unemployment differently, the power of corporations, and the subsequent role of governments with tax cuts, can all be considered through richer discussion in ECON 101, whereas uncertainty and trickle-down economics are better addressed with a proper theoretical background at the intermediate level.

In essence, while Komlos makes a strong case for studying the subject right the first time than unlearning and learning it right, care must also be taken to not overwhelm students with a mish mash of topics or a deluge of information, and instead strike a right balance between clarity and nuance. With this caveat on methodology, the case for pairing the Mankiw and the Komlos texts as complements on several key topics underscored by Komlos is justified.

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