

The Profound Implications of Continuing to Teach 'Supply and Demand' Instead of 'Demand and Cost' in Intro Economics Courses - an Unequal Exchange Application



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Abstract: This paper focuses on how two iconic memes of Neoclassical (NC) introductory economics provide the ideological basis for the Neoliberal Perfectly Competitive Free Market (PCFM) and Free Trade (FT) economic doctrines. The paper argues that the Supply and Demand (SDM) and Ricardian Comparative Advantage (RCA) memes that ostensibly support these doctrines are fundamentally in error both economically and logically, and should be replaced in introductory economics teaching by Demand and Cost (DCM) and Unequal Exchange (UE) memes, respectively. The DCM is explained in detail and used to analyze all situations to which the SDM is usually applied. The UE meme, within a DCM framework, is then used to derive principles for fair and sustainable international trade and finance. The paper shows that the DCM and UE memes provide more realistic, equitable, and sustainable views of production and international economies than the fictional SDM and RCA memes, which have become ubiquitous, even in heterodox textbooks.

Keywords: Supply and Demand; Demand and Cost; Introductory Economics Teaching; Neoclassical Economics; Unequal Exchange; Ricardian Comparative Advantage; Free Trade; Economic Memes.

Biographical Notes: Ron Baiman teaches Economics in the MBA program at Benedictine University in Lisle, IL outside of Chicago. He is the author of two recent books: *The Global Free Trade Error: The Infeasibility of Ricardo's Comparative Advantage Theory* (Routledge, 2017), and *The Morality of Radical Economics: Ghost Curve Ideology and the Value Neutral Aspect of Neoclassical Economics* (Palgrave Macmillan, 2016); and co-author of *Political Economy and Contemporary Capitalism* (M.E. Sharpe, 2000). He has published theoretical and policy papers on international, national, and local political economy in numerous heterodox and neoclassical journals; has been a member of the Editorial Board of the *Review of Radical Political Economics* for many years, and is a founding member of the Chicago Political Economy Group (CPEG) (www.cpegonline.org) where many of his policy analyses and blog postings can be found. An earlier version of this paper was presented at the International Confederation of Associations for Pluralism in Economics, (ICAPE) Conference, Jan. 5, 2017 in Chicago.

1 Introduction

This paper focuses on how two iconic memes of Neoclassical (NC) introductory economics provide the ideological basis for the Neoliberal Perfectly Competitive Free Market (PCFM) and Free Trade (FT) economic doctrines. The paper argues that the Supply and Demand (SDM) and Ricardian Comparative Advantage (RCA) memes that ostensibly support these doctrines are fundamentally in error both economically and logically, and should be replaced in introductory economics teaching by Demand and Cost (DCM) and Unequal Exchange (UE) memes, respectively.

Sections 2 through 4 of this paper address the unrealistic and illogical (in most cases) SDM story within the context of a PCFM, and counter poses the SDM to a more realistic and logical DCM. The SDM is a neoclassical ideological meme that reinforces free market thinking, whereas the DCM presents markets as products of social choice embedded in society, while highlighting the importance of social policy rather than self-correcting markets in achieving economic equity and democracy (Baiman, 2016). Sections 5 and 6 use the DCM framework to analyze international trade from a UE perspective. The analysis relies on proofs that RCA is in fact mathematically overdetermined and supports managed trade rather than free trade, a demonstration that Meade's neoclassical proof of the existence of FT equilibrium does not apply to much of world trade, and a proof that any exchange-rate-based FT model of international trade will be unstable, and thus economically infeasible (Baiman, 2017). Rather than FT, the analysis thus assumes a UE view of international trade as modeled in (Baiman, 2017) and applies this to a DCM analysis of international trade.¹ As the detailed proofs and models above are beyond the scope of this paper, sections 7-10 focus on the major UE conclusions of the analysis and their policy implications. Section 11 concludes.

¹ (Baiman, 2016) elaborates further by showing that the non-introductory NC applied microeconomics fallback position of using Ramsey pricing to supposedly replace the SDM is also mathematically erroneous and ideologically based, leading to immoral and sometimes catastrophic policy.

2 Exposing Textbook Supply and Demand Ideology: A Demand and Cost Model (DCM) Alternative to the Supply Curve Based Supply and Demand Model (SDM)

I frequently start a class discussion of the ‘Supply and Demand Model’ (SDM) with a simple question: If you were a pizza producer, how many pizzas would you produce at a price of \$15 a pie? Students generally give me a blank stare. I then elaborate. Consumers will have some idea of how many pizzas they will buy at any given price, assuming other ‘shift factors’ like income, taste, and expectations do not markedly change; but producers can estimate how much they will produce at any given price only if they know something about demand conditions. Demand, however, is not a shift factor for the supply curve. Quite the contrary, the supply curve of introductory economics textbooks is assumed to be independent of demand.

Though ubiquitous in economic texts, an independent supply curve does not realistically represent most of the economy. Professional economists and economics majors are (or should be) well aware that a supply curve exists only in a few specialized markets (i.e., agricultural or natural resource markets) where prices are set globally; individual producers are small relative to the global market and can sell as much as they can produce at the global price; and incremental costs of production rise as production increases. The few specialized (non-barter) markets where such conditions are approximated are known as Perfectly Competitive markets.² With the exception of these special cases, in the rest of the economy, firms set prices and production levels based on demand and costs. Introductory textbooks misleadingly pretend that Perfectly Competitive Free Markets (PCFMs) represent most markets in the economy.³

This supply and demand story resulting in stable equilibrium prices and output balancing incremental costs and benefits is specious. The major purpose of the story (often the only item remembered from introductory economics training) is to firmly root the Perfectly Competitive Free Market (PCFM) meme in the

² See any intermediate microeconomics textbook, e.g., (Mansfield, 1994).

³ As labor is not a produced commodity, labor markets are not production markets. Thus, to some extent – subject to migration, outsourcing and longer term economic and cultural feed-back effects on population demographics and labor force participation rates-- labor markets are barter markets where an existing labor force generates a supply curve and an existing demand for labor subject to macroeconomic conditions generates a demand curve. Neoclassical macroeconomists argue that in an ideal PCFM economy, the long run SDM determined equilibrium real wage will be set at a point of no involuntary unemployment. Needless to say, this assumption has long been critiqued by non-NC, and especially radical economists, e.g., (Weeks, 2014).

minds of introductory economics students who later become lawyers, judges, politicians, business people, academics in other fields, citizen voters, and economists, who propagate the legal and political implications of the SDM without thinking too much about the foundation of this fiction.⁴

3 The (Mostly Specious) Supply and Demand Story

Ask an average citizen what they know about economics and, if they've had any formal economics training in high school or college, they'll probably mention the SDM. This, I believe, reflects the extent of the systemic social indoctrination foisted upon the public by the (mostly unwitting) acolytes of Neoclassical economics. As virtually every standard NC (and most heterodox⁵) introductory economics textbook begins with this partial equilibrium story derived from Alfred Marshall's 'scissors diagram' (Marshall, 1890, Book V, Chap. 3), I will not review the SDM itself but focus on its conclusions.⁶

In introductory and applied economics texts, the concepts of Consumer Surplus (CS) and Producer Surplus (PS) are employed to generate a more normative justification for PCFM and SDM equilibriums. CS is defined as the area under the demand curve that reflects the dollar benefit relative to the prices that consumers would have been willing to pay, as opposed to what they actually paid at the (always by definition) lower equilibrium price level. PS is defined as the (necessarily positive or zero) profit that equals the area above the supply curve and below the equilibrium price. Standard texts then explain that a PCFM, SDM, equilibrium maximizes CS plus PS; and that any non-market interference will reduce overall social welfare.⁷

⁴ For example, Rep. Paul Ryan, the current Republican Speaker of the U.S. House of Representatives was by all accounts a devoted student of ultra PCFM libertarian economics professor Richard Hart of Miami University, Ohio, Ryan's alma mater (Tanfani, 2012).

⁵ There is a voluminous heterodox critical literature on supply and demand, and comparative advantage including numerous and insightful critiques of the methodological basis of these memes, e.g., the need for a fictional 'Walrasian Auctioneer,' the assumption of full employment; the logical inconsistency of the horizontal demand curve; 'representative agent' assumptions; and the empirical fiction that international trade depends on comparative rather than absolute advantage (Hill and Myatt, 2010; Goodwin and Nelson, 2009; Ridell et. al., 2011; Bowles et. al., 2005; Keen, 2011; Shaikh, 2016; and Weeks, 2014). However, I have not yet found an introductory heterodox text that offers introductory alternatives to the SDM and comparative advantage memes necessary for a serious pedagogical challenge to the NC dominance of the economics curriculum.

⁶ I was not able to find a survey of standard economics texts with regard to their use of SDM, but in my roughly thirty years as a professional economist I have never encountered a standard text that did not feature supply and demand in one of its early chapters. Thus I believe it is fair to assume that without an early chapter on supply and demand an introductory economics textbook could not be described as a standard NC introductory economics textbook. Most heterodox texts also feature a supply and demand chapter, and though they often critique SDM, they do not offer an alternative (Bowles et. al., 2005, Chps. 8 -9; Riddell et. al., 2011, Ch. 7; Goodwin et. al., 2009, Ch. 4).

⁷ See for example the popular (Mankiw, 2012). For a simple critique of CS methodology see Hill and Myatt (2010, Chap. 4). For in-depth critiques of CS and PS see Baiman (2016, Chap. 9-10).

More specifically, any government intervention that artificially keeps prices low (rent control) or high (agricultural price supports) will lead to shortages/surpluses and dead weight loss.⁸

The fundamentally Walrasian⁹ SDM story is presented in introductory texts to describe Adam Smith's invisible hand. The latter is an automatic feed-back dynamic story showing how in competitive markets greater demand increases prices and profits, stimulating increased investment, leading to greater supply. SDM supposedly supplies a rigorous foundation for the rhetorical message of objective market forces coordinating individual self-interest and providing a beneficial and balanced equilibrium through freely adjusting price signals.

Given exogenous technological and natural constraints, (see Baiman, 2016, Chap. 1; Marglin, 1984, Chap. 1), the SDM model demonstrates that market economies gravitate toward a social welfare maximizing, stable, market clearing equilibrium determined by natural conditions and individual choice. The SDM thus provides a scientific and objective solution to the central economic problem of 'allocating scarce means to competing ends' (Robbins, 1932) that is free and fair as it properly reflects consumer sovereignty (Hutt, 1936) and individual choice. The SDM is a modern and rigorous formalization of Adam Smith's invisible hand. The SDM thus provides objective scientific support for the cornerstone ideology of neoclassical economics: that competitive markets will transmute private self-interest into the public good.

Any formal model ignores some aspects of reality; thus, it serves little purpose to critique SDM for not precisely replicating reality. It is well known, for example, that SDM cannot determine distribution (factor markets play a role but can't set initial endowments) and disregards exogenously determined (in the SDM

⁸ A Pareto Optimal market allocation cannot be improved via individual agent free market exchanges without harming any individual agent. When welfare is measured as CS+PS, a PCFM SDM equilibrium is Pareto Optimal as it maximizes the sum of CS+PS, where there is no deadweight loss.

⁹ For a more advanced discussion of the difference between Walrasian, and Post-Keynesian or Classical Political Economy based theories of growth and value, see (Nell 1967 [1992], ch.2; and Shaikh, 2016, Chap. 3). Note that I am glossing over the Achilles heel of the PCFM Walrasian general equilibrium story, i.e., the need for an 'auctioneer' to prevent any trading until an equilibrium price has been determined and announced by the auctioneer (Shaikh (2016, pp. 341-3). In this paper I am addressing SDM strictly in the partial equilibrium Marshallian context of introductory economics texts; see text above and Marshall (1890, Book V, Chap. 3).

model) tastes, nature, and technology.¹⁰ The standard neoclassical response is that factors influencing tastes, nature, and technology are outside the sphere of economic science (Baiman, 2016). It is also common knowledge that there are externalities (effects not captured by free markets) and public goods for which the PSFM SDM does not, in a pure form, work. It is important to note that the SDM meme, erroneously, in my view, instills introductory students with a picture of the economy comprised by a level playing field of agents with equal market power making individual (rather than social) choices.

Assuming externalities have been (somehow) dealt with, and returning to income distribution, NCs claim that the proper way to address resource allocation is through a political reconfiguration of initial endowments (or wealth) that does not interfere with the efficient working of the market. The supporting construct is the ‘Second Fundamental Theorem of Welfare Economics’ that proves that a PCFM can provide any desired distributional outcome through an appropriate setting of initial endowments.¹¹ Moreover, these SDM PCFM outcomes are said to be Pareto Optimal: a tautological consequence of the workings of a PCFM; i.e., by definition, the result of individual agents utilizing all possible voluntary market exchanges to make themselves better off (Baiman, 2016, Chap. 9).

Critiques of both the measure (why is welfare derived from PS or profit equivalent to welfare derived from CS?) and its units (Why should a dollar of CS for an extremely wealthy individual have the same value as a dollar for an average income person?) have been rigorously developed (Baiman, 2001; Granqvist and Lind, 2005; Baiman, 2016). Critiques of these supposedly objective scientific ‘principles of microeconomics’ show that even a supposedly, more realistic, modified version of SDM widely used by applied NC microeconomists rests on basic assumptions reflecting particular sets of values, i.e., the primacy of efficiency and individual choice over equity and social choice; and a mistaken belief that the former can be strictly and scientifically separated

¹⁰ For an advanced discussion of the role of tastes, nature, and technology in the NC model see (Marglin, 1984, Ch. 2). For theoretical discussion of how endogenizing these factors undermines the ‘Fundamental Theorems of Welfare Economics,’ see (Hahnel and Albert, 1990).

¹¹ See any intermediate or advanced standard NC microeconomics textbook, e.g., (Mansfield, 1994).

from the later (Baiman, 2002). For now it is important to demonstrate the complete (not just approximate) lack of realism of the introductory textbook SDM.

4 Supply Curves Generally Do Not Exist

The SDM model depends on independent supply and demand curves that in practice rarely exist. In our earlier pizza example, the supply curve supposedly gives the number of pizzas produced based purely on supply conditions, i.e., the cost of producing each additional pizza relative to a given market price. This assumes that producers will be able to sell every pizza, and that no individual producer could possibly produce enough pizzas to change the market price. The supply curve then reflects an infinite demand at every price.

If this sounds problematic, it is. How many producers do you think construct (necessarily purely theoretical) supply curves to determine the maximum output that they can produce profitably at any given market-determined price, and then determine what the market price is and produce the quantity indicated by their theoretically constructed supply curve with the expectation that demand for their production at this price will be infinite? Moreover, what if, because of economies of scale for example, the cost of production per unit declines? The model obviously breaks down completely in this case, as every producer will produce an infinite supply.¹² This is a nonsensical assumption in today's advanced economies.

The problem is the existence of hypothetically independent upward sloping supply curves. In the short run, assuming some level of normal excess capacity, average variable costs are often constant, so that average total costs (which includes fixed overhead and set-up costs) per unit should decline as these fixed costs are defrayed over larger production runs (Lavoie, 2009; Shaikh, 2016). Thus, total (variable and fixed) short-run average costs, that by definition are supposed to be based exclusively on cost factors, are either downward sloping, or flat if there are some off-setting increases in average costs for unusually high levels of production.¹³

¹² See for example (Keen, 2011).

¹³ Piero Sraffa first formulated a variant of this critique which has been reiterated in various forms by generations of 'Sraffians', 'Post-Keynesians', and other non-NC economists with little apparent impact on NC microeconomic theory. For a comprehensive treatment

When SDM is applied to the long run there is even greater reason to believe that total average costs for most industries will decline as greater market power and economies of scale/scope reduce the input and production costs. NC economic texts (i.e., almost all economics texts) are forced to resort to dubious claims that administrative inefficiencies stemming from large size will inevitably add sufficient costs per unit to offset advantages of large scale and scope production, in order to justify a U-shaped long-run average cost curve.¹⁴ The natural tendency of capitalism in most cases is to evolve toward greater oligopoly a la Marx, rather than PCFM a la Adam Smith, in complete disregard of standard NC textbook microeconomic theory.¹⁵ Diminishing marginal productivity (DMP) is an ahistorical and ideological artifact based on fixed rather than produced means of production (Sraffa, 1960; Nell, 1996; Lee, 1998). It stems originally from Ricardo's analysis of rent on increasingly less fertile land and became a central principle after Marshall developed the now standard increasing costs SDM formulation, though Marshall himself was careful to specify that this was one possible type of industry cost configuration along with decreasing cost and constant cost possibilities (Marshall, 1890, Book IV, Chap. 13).

Both Ricardo and Marshall analyzed 19th century agricultural and manufacturing conditions with limited technology and excess capacity in manufacturing, often dependent on work teams whose output could not easily be expanded without loss of efficiency (Nell, 1998) Of course, even in contemporary economies some sectors like agriculture, natural resource extraction, capital goods production, and exchange (rather than production) markets may have binding short-term supply constraints and consequent upward sloping cost and supply curves. Fictitious commodities like labor that (like land) are not produced for the market may also, when there are shortages, exhibit upward sloping, and even backward bending supply curves.

of this dogmatic NC attachment to U-shaped average cost curves and rapidly rising marginal cost curves, and general ideological NC adherence to micro-foundations with no empirical basis, see (Nell, 1998; and Shaikh, 2016, Chap. 3).

¹⁴ See any introductory or intermediate economics or microeconomics text, for example (Mansfield, 1994).

¹⁵ For an outline of a more comprehensive and realistic theory of consumer behavior see (Lavoie, 2009). Shaikh, (2016) argues that NC convex indifference curves as a description of consumer behavior have no empirical basis and can be replaced by numerous other microfoundations that will generate similar empirical verifiable demand curve and consumption behavior.

However, most manufacturing and service sectors in advanced economies have excess capacity and slack inputs whose supply can be expanded without increasing (but possibly reducing overhead and fixed) costs per unit. And even if they gravitate toward normal capacity, and prices are set by firms using the regulating lowest-cost and reproducible technology (Shaikh, 2016), there is no empirical evidence to justify pervasive upward sloping cost curves, especially outside of agricultural, or other natural resource intensive sectors of the economy (Shaikh, 2016).

Why then is NC economics so wedded to the 19th century DMP principle? The answer is clear. Without short-run, or long-run, DMP, there can be no upward sloping supply curve, and the aforementioned SDM outcomes will not occur.

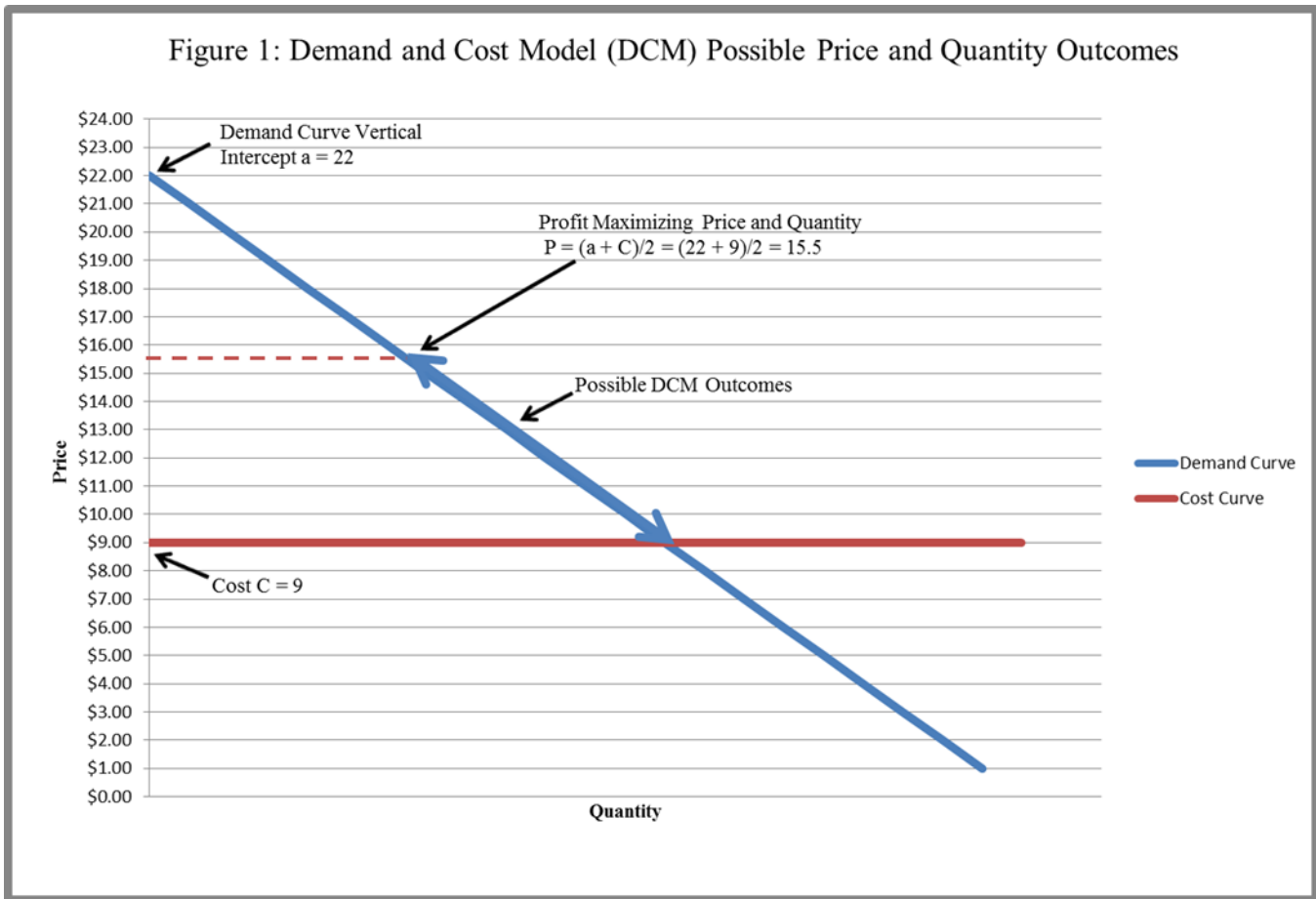
5 The (Mostly Real) Demand and Cost Story

Almost all firms have some market power in that they face a downward sloping demand curve, implying that how much they sell depends on a discretionary price. Monopolistically competitive firms (e.g., retail trade) may have only local market power with very limited price and quantity ranges based on their locational convenience to customers. Oligopolistic firms (e.g., automobile or smart phone producers) may face demand curves with steeper slopes and more flexible price and quantity ranges still limited by competition. Monopoly firms (e.g., regulated utilities or drug companies with patents) have complete (hopefully subject to some regulation) freedom to set prices and quantities (Allen, et. al., 2013).

How then are prices and quantities set? Firms will generally apply a mark-up over costs which may depend on monopolistic power, as in the Post-Keynesian tradition, or on prevailing prices set by regulating producers, as in Shaikh's Classical theory of real competition; but in either case firms will set a price above average costs if they want to stay in business over the long term (Lavoie, 2009; Shaikh, 2016). If firms want to sacrifice short-term profits to increase market share they will keep prices relatively low. If they want to maximize short-term profit and don't care about market share they will set prices higher.

For a useful heuristic introductory story assume a linear downward sloping demand curve as shown in

Figure 1 below:



Assume: $P = a - bQ$

Where $a > 0$, $b > 0$; and P and Q are price and quantity demanded along the demand curve.

Assume that the:

Average Total Cost curve = Marginal Cost curve = C

Where C is constant cost per unit output and lower than P in the normal range of production. Under these

conditions short-term profit will be maximized when:¹⁶

¹⁶ Total Revenue (TR) = $aQ - bQ^2$, so that Marginal Revenue (MR) = $a - 2bQ$. As $MC = C$ is below $P = a - bQ$, MR will intersect C from above at the short-term profit maximizing point where $MR=MC$. At this point $a - 2bQ = C$, so that $Q = (a - C)/2b$, where $a - C > 0$ by assumption that the demand curve is above the cost curve in the usual production range. This implies that the profit maximizing price is $P = a - b(a - C)/2b = (a + C)/2$.

$$P = (a + C)/2$$

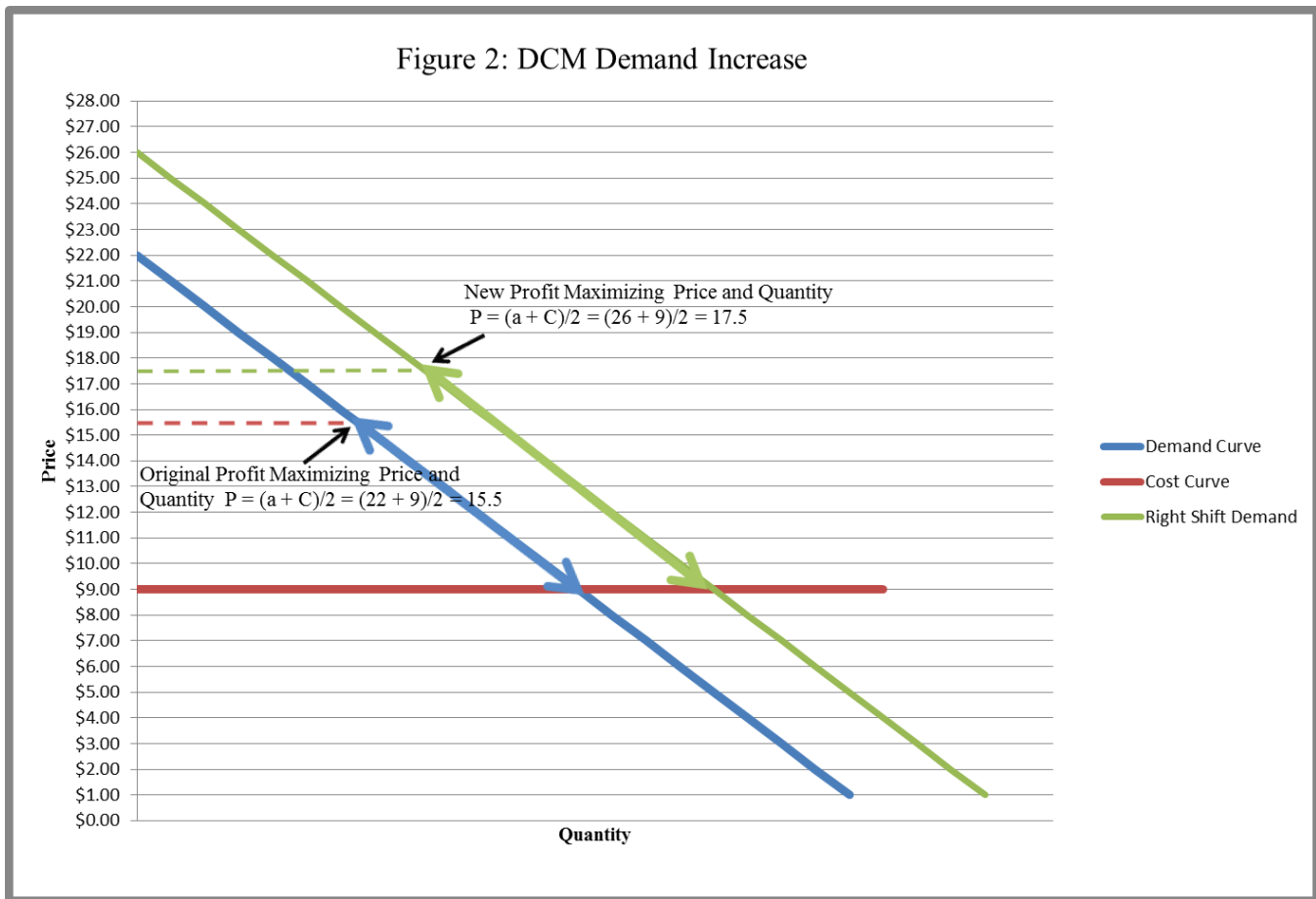
An unregulated monopoly can maximize its short-term profit by setting its price at this level. For all other firms this will be an upper bound on price as any higher price will reduce both demand and profit. Firms will therefore set a price between $(a + C)/2$ and C , with a range of production between $(a - C)/2b$ and $(a - C)/b$.¹⁷ The amount that firms produce will adjust to the level of demand at the price selected by the firm along the demand curve.

The SDM stories regarding shifting demand and supply curves can be more realistically presented using DCM analysis. For example, as shown in Figure 2 below, if the demand curve shifts to the right due to say increased incomes (as with SDM exercises assume a parallel shift) there will be surplus quantity demanded at the initial equilibrium. The rightward shift of the demand curve will cause the intercept term (a) to increase to $a' > a$. The producer's upward bound on price will thus increase as $(a' + C)/2 > (a + C)/2$; as will its lower bound on quantity produced since $(a' - C)/2b > (a - C)/2b$. The producers lower bound on price will remain constant at C , but the upper bound on quantity produced corresponding to this price will increase as $(a' - C)/b > (a - C)/b$.

Depending on external competition, or internal (to the firm) power relations and structure (vis-a-vis unions, management, shareholders, etc.), and long-term firm strategy, producers will set price/quantity supplied based on demand at that price. They may either increase output at the same or a moderately higher price to gain higher long-term market share in response to the increased demand, or raise prices more significantly to obtain higher profits and/or wages; but this will cause quantity demanded to decline toward its initial level as consumers reduce their quantity demanded. The shift in demand will thus result in a new higher equilibrium quantity and/or price.

¹⁷ Per footnote 15 above, when $P = (a + C)/2$ then $Q = (a - C)/2b$. When $P = C$, $C = a - bQ$ so that $Q = (a - C)/b$.

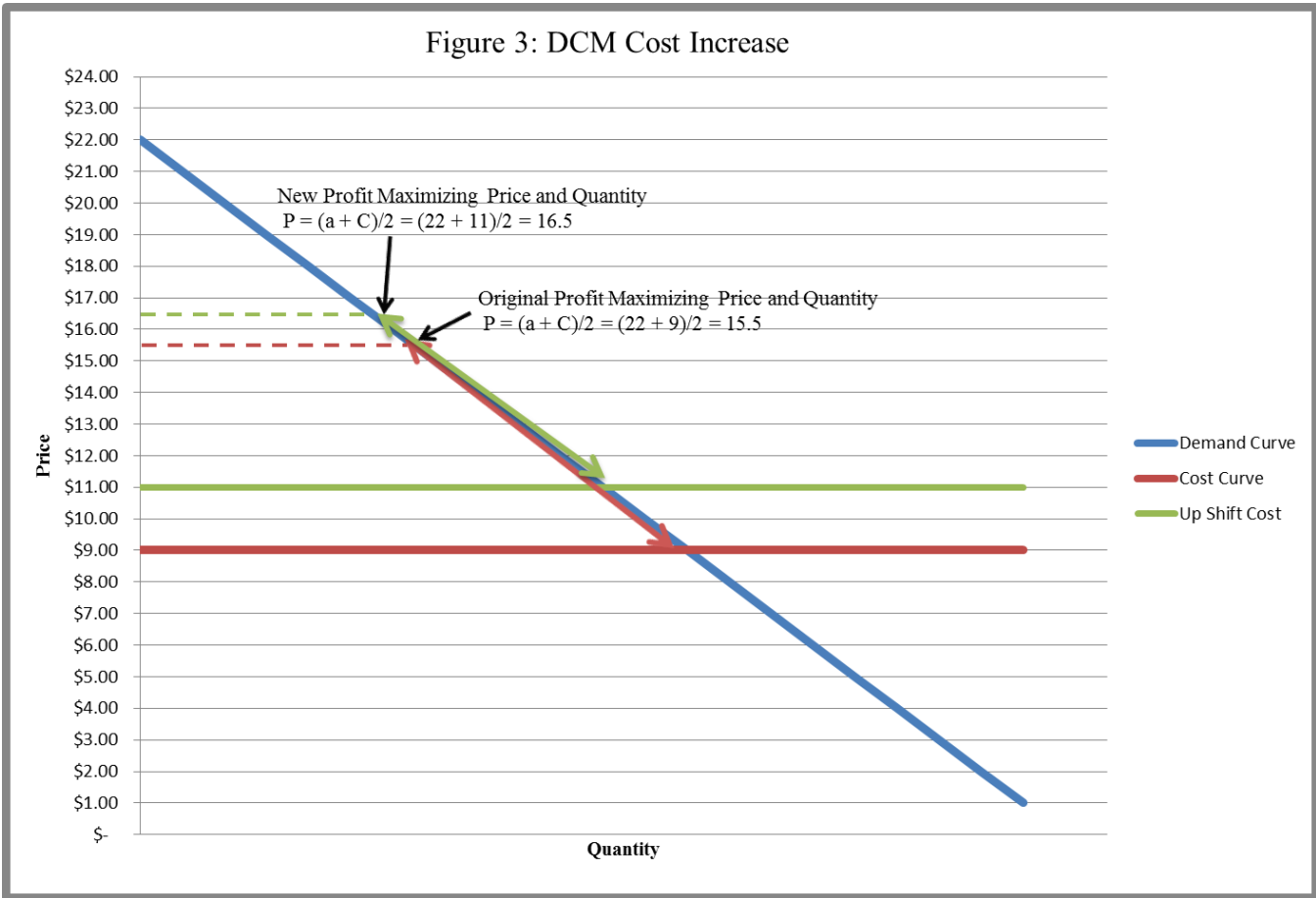
Figure 2: DCM Demand Increase



The opposite will occur if the demand curve shifts down (left).

If on the other hand the cost curve shifts down, due to, say increased productivity reducing the cost of production so that $C' < C$, this will, as shown in Figure 3 below, cause the producers' upward bound on price $(a + C')/2 < (a + C)/2$ to decline, and its corresponding lower bound on quantity produced to increase $(a - C')/2a > (a - C)/2a$. It will also cause its lower bound on price C to decline as $C' < C$ and corresponding upper bound on quantity supplied to increase as $(a - C')/b > (a - C)/b$.

As before, depending on external competition and internal power-relations and structure, as well as long-term firm strategy, producers will either *pass through* the lower costs to consumers in the form of lower prices and *higher* quantity supplied, or lower price less or not at all without increasing production as much. In general, a reduction in costs could result in a *higher* quantity and/or *lower* price but may *not*.



The opposite will occur if the cost curve shifts up instead of down.

As is evident from these examples, the qualitative prices and quantities demanded/supplied outcomes of the DCM are equivalent to the SDM. But the DCM does not precisely specify how much, if any, price change will accompany quantity demanded changes, if any, when the demand curve shifts; and similarly, whether, and how much price or quantity supplied will change when the cost curve shifts. Most importantly, as will be discussed below, the DCM suggests, and empirical data confirm, that in the short term, market clearing quantity supplied/demanded is generally determined by demand conditions, most often by firms increasing/reducing output to match demand with no, or fairly infrequent, price change.¹⁸ Alternatively, in the longer term Shaikh (2016,

¹⁸ For example a comprehensive study of 200 representative non-agricultural firms in the U.S. by (Blinder, et. al., 1998) which finds that: ‘... we took it for granted that almost all the firms in our economy are price-makers rather than price-takers – an assumption

Chap. 7) offers evidence suggesting that price changes, even among oligopolistic producers, are more common than assumed in the Post-Keynesian literature. However, this does not change the basic message of the DCM, that firms set prices.¹⁹

For introductory textbook purposes both the DCM and SDM explain the effects of demand and cost, or supply, on price. Admittedly, the DCM model does not offer as clean and unambiguous an answer, but qualitatively both point to the same possible outcomes in terms of price and quantity changes. Given that the DCM story offers a realistic approximation of reality, whereas the SDM is an utter fantasy that posits a curve that in most cases cannot even be defined, why do introductory economics textbooks almost universally stick with the SDM?

Yes, the SDM story is pedagogically simpler to explain, but it is also patently false, and the DCM model, though a bit more complex, is well within the reach of introductory students. If economics is to maintain its claim to be a social science, shouldn't it teach about reality and stop purveying fairy tales? It is hard not to conclude that the major reason for the ubiquitous presence of the SDM in economics textbooks is that it legitimates the PCFM ideology of NC economics.

The common sense DCM model is banned from economics texts because, instead of showing that economic outcomes in capitalist market economies gravitate toward a market clearing equilibrium determined by natural conditions and individual choice, that is also stable and social welfare maximizing; the DCM model shows that price and quantity outcomes are objectively constrained, but subjectively determined and socially embedded

amply justified by the survey responses' (p. 12) And that: 'First, the evidence gathered in this study emphatically supports the mainstream [*but not the SDM*] view that sticky prices are the rule, not the exception, in American industry. According to our respondents, the median number of price changes for a typical product in a typical year is just 1.4, and almost half the prices change no more often than annually. Among firms reporting regular price reviews, annual reviews are by far the most common. At the other end of the spectrum only about 10 percent of all prices change as often as once a week, and only about 7 percent of all firms schedule regular price reviews at least weakly' (p. 298, *brackets and italics mine*). See also empirical data surveyed in (Lee, 1998).

¹⁹ In the DCM model average aggregate prices and aggregate quantities demanded will qualitatively reflect averages of individual firm choices. In this sense DCM outcomes are not easily added as in SDM where all firms are assumed to be price takers of the same market price so that quantities demanded and supplied at the same price can be simply added to construct aggregate market demand and supply curves. However, subject to turbulent price equalization (Shaikh, 2016, Chap. 7), the DCM aggregate outcome will also be indeterminate but qualitatively similar to standard SDM outcomes, as it will be dependent on the broad directions and sizes of individual firm price and quantity changes.

choices, reflecting institutional and class power, resulting in unstable and generally non-optimal equilibrium

price and quantity outcomes, as:

- a) Equilibrium prices are not precisely determined by objective (or exogenous) forces of nature, technology, and individual agent choice; but rather are a combination of external social and market, and internal to the firm, institutional power and strategy, resulting in a selection of prices and quantities from a range determined by demand and cost conditions. Firms in particular are active price makers.²⁰ As Polanyi (1944) pointed out, markets are embedded in and are products of society rather than a natural, or objective, apolitical technocratic mechanism to which society must adopt. Market equilibrium prices and quantities are thus not perfectly determined, but rather are selected from a range given by demand and cost conditions resulting in active firm adjustments of quantity supplied to quantity demanded and occasional price changes. These equilibrium points are thus, subject to objective constraints, subjective products of social governance, class power, and active firm strategy, including strategy affecting cost (Shaikh, Chap. 8), as well as individual consumer choices themselves constrained and molded by class, culture, and marketing (Hahnel and Albert, 1990).
- b) The equilibrium so obtained is not necessarily self-correcting and stable, as it is a product of shifting demand and cost curves, rather than movements along fixed demand and supply curves. For example, if multiple firms adjust output in the same direction, firm output will impact income streams causing shifts in demand curves leading to a multiplied reduction or increase in output. The new equilibrium will clear product markets at the new lower or higher levels of effective (backed up by spending) quantity demanded (that, depending especially on income distribution, may have little relationship to actual or optimal levels of social output or needs) but this new equilibrium, like the old, will not be stable or clear labor or capital markets. A free market equilibrium is thus fully compatible with high levels of unemployment, unutilized capacity, and unmet social and individual needs that could be satisfied if social resources were fully employed.²¹ Alternatively, in Shaikh's Classical framework, the system will gravitate toward normal capacity utilization and savings that depend on business investment; that may not generate a full Keynesian multiplied outcome, but will still reflect the results of demand pumping or enterprise profits and investment rates over many years, rather than a stable full employment equilibrium (Shaikh, 2016, Chap. 14).
- c) For the reasons discussed above, and because the DCM equilibrium does not occur, as in the SDM, at the point of intersection of the supply and demand curves, the DCM equilibrium is not generally welfare optimal in either the static NC Pareto Optimal sense, or the more general Keynesian sense of fully employing underutilized resources.²² Thus the DCM supports a Post-Keynesian, Kaleckian, or Shaikhian, understanding of the modern capitalist market economy, and fundamentally undermines Smith's invisible hand along with objective scientific support for the Walrasian cornerstone ideology of NC economics (Lavoie, 2009; Shaikh, 2016).²³ For a heuristic demonstration of the above point: note that though CS and PS can be defined in a DCM model as in the SDM, in the DCM the optimal equilibrium point maximizing CS plus PS is a zero profit price where $PS = 0$ and CS is maximized, as shown in Figure 4 below. Thus, the DCM shows that the social welfare of static allocation depends on

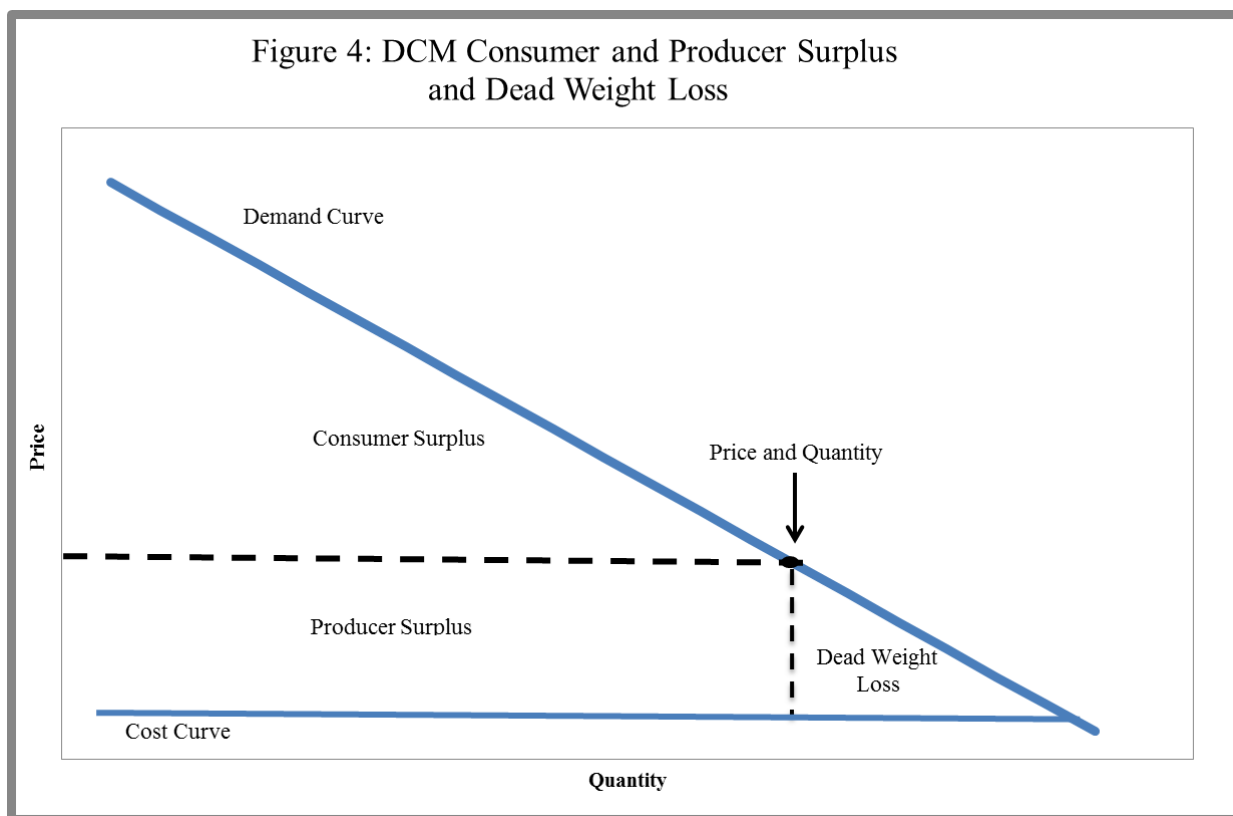
²⁰ Shaikh (2016, Chap. 7) argues that prices turbulently equalize to those set by the regulating capitals. However, even in this process of turbulence firms determine, depending on their specific strategies, how close they want to set prices relative to the regulating prices. Moreover, I find it undeniable that market power in addition to "regulating cost" plays a role in competition and firm strategy, see for example (Galloway, 2018).

²¹ This was one of Keynes' central points (Baiman, 2016, Chap. 6).

²² More advanced, and widely applied microeconomic generalizations of the SDM can be similarly shown to be social *welfare reducing* rather than optimizing (Baiman, 2016, Chap. 9-10).

²³ See schools of economic thought discussion in (Baiman, 2016, Chap. 3).

the relative power of the producers. The less power to set prices above costs, the greater the immediate social welfare benefits from allocating current production. Of course, immediate benefits from consumption are not the only goal of economic output; but CS and PS analysis using the DCM accurately indicates that the proportion of current resources devoted to widespread current benefit (CS), and the proportion devoted to producer profit and depreciation, investment and growth (PS), is fundamentally a social and political decision.



6. Deriving Long Term International Trade Goals from Unequal Exchange (UE) Within a DCM Framework

The DCM model, and more advanced applied microeconomics versions (Baiman, 2002, 2016, Chap. 9-10), demonstrates that there is no inherent normative value in market outcomes. Rather, as Polanyi (1944) argued, markets are embedded in society, and the degree to which they are socially beneficial or exploitative and destructive, depends how they are constructed, guided, and regulated, through social choices

made by firms and governments; and in the case of international trade and finance, international trading regimes.

This key insight is demonstrated again, in the international trade context, by Unequal Exchange (UE) international trade models. Baiman (2017, Chap. 2-4) demonstrates that Free Trade (FT) ideology, as expressed in the Ricardian Comparative Advantage Parable, Meade's NC FT solution, and the textbook FT doctrine are, respectively, mathematically inconsistent, inapplicable, and infeasible. The UE models in (Baiman, 2017, Chap. 5-6) demonstrate that FT, (or trade and finance) based on individual profit-maximizing agents, regulated through freely floating exchange rates and international market forces, is likely to be socially exploitative and harmful to long run international political and economic progress.

The point is that free market prices are not an ideal goal for the global economy. To the contrary, FT prices are like to be highly exploitative and of benefit to corporations, individuals, and countries that can leverage market power and unequal exchange. Though these simple models are constructed in terms of hypothetical southern, northern, and rentier countries, their unequal exchange outcomes are equally applicable to the contemporary global economy (Dicken, 2015, Chap. 1).

The exchanges described in the model can, without loss of generality, be applied to any trading agents with unequal power (described in the models as unequal ownership of capital stock) that can negotiate an unequal exchange with an agent with less market power. The agents can be corporations, individuals, or countries. The source of market power can reside in superior technology and public or private capital stock or infrastructure (though the models focus on private capital stock) or other sources of market power such as the privileged monopolistic or oligopolistic network, marketing, and supplier, relationships employed by TNCs or localized production agglomerations (Dicken, 2015, Chap. 2-8).

The UE models highlight the most important aspect of global (and domestic) exchange: its dependence on market power. Free markets allow TNCs, individuals, and countries with power to force unequal exchange. And the UE model shows that market power is regenerative and cumulative. Over time, in the absence of exogenous changes, the gap between economic agents that have power and those that do not increases in direct

contradiction to NC convergence ideology. Note how the UE models (Baiman, 2017 Chap. 5) show that, given ideal assumptions, all benefits of trade accrue to the north, while technological progress increases the north-south gap over time. Furthermore, the rentier UE model (Baiman, 2017 Chap. 6) shows how rentierism, or the ability to extract value (measured in the simple UE models as labor value) without producing useful real goods or services, further exacerbates global inequality and undermines sustainable long-term economic growth and development in the rentier economy and its trading partners.²⁴

Free markets do not produce natural or socially efficient equilibrium, but simply transfer and reflect unequal market power relationships. Market outcomes can be exploitative (unequal or producing greater inequality and exploitation) or socially beneficial (relatively equal or moving toward greater equality and fairness) depending on how markets are structured within or between nations. Similarly, markets can produce beneficial and sustainable short and long-run innovation or suppress technological and organizational progress, depending how they are structured.

For example, Europe and Asia enjoy much higher quality and more affordable broadband access than the USA despite that most technological innovation has occurred in the USA. This is because relatively unregulated USA telecom markets are dominated by oligopolies and monopolies that can extract rentier profits with less investment in broad-based infrastructure and public service (Miller, 2014). The USA health care system even more exemplifies how relative unregulated for-profit markets can produce inefficient and wasteful outcomes especially when compared with the highly successful single-payer Canadian health care system that is regulated to induce competition over quality and not rentier profit extraction (Davis et. al., 2014).

²⁴ Shaikh (2016, Chap. 11) presents a Classical theory of exchange rates and trade based on costs, mirroring real domestic competition. Though I believe that Shaikh has brilliantly isolated and highlighted many of the core principles of a mature and relatively functional capitalist economy based primarily on equal exchange and profit on production rather than profit on alienation (Shakh, 2016, Chap. 6), I believe that, especially in the last few decades in the technology and financial sectors and through outsourcing, unequal exchange or profit on alienation is increasingly important (Baiman, 2017, Galloway, 2018).

7 Long-terms Goals to Support a More Just and Sustainable Global Trade Regime

Anyone who recognizes that reliance on PCFM cannot substitute for social policy, should, in principle, realize that the FT as the backbone and guiding principle for international trade and finance is a non-sequitur. There is no principled argument for FT unless one believes that there is some inherent normative value to free market outcomes, as NC core theory stridently but unsuccessfully attempts to prove, and introductory economics texts disseminate (Baiman, 2016). If one does not accept this, there is no argument for FT.

However, it is useful to construct the case against free markets (FT) in the international context. As noted above, Baiman (2017, Chap. 2-4) shows that the FT doctrine is, from multiple vantage points, inconsistent, inapplicable, and infeasible; while the basic UE model employed in Baiman (2017, Chap. 5-6) and the DCM summarized above and in Baiman (2016, Chap. 5) offer simple frameworks for making an admittedly abstract but fundamental case for managed international trade and finance. This argument can be made: a) as part of a general need to construct markets that work, or produce broad-based and sustainable global benefits; b) by demonstrating that prices, and particularly wages, often include large social costs, not necessarily reflecting inherent or objective efficiency costs; and c) that international trade and finance, like their domestic counterparts, are fundamentally based on governance, or social choices, made by agents with the power to direct and establish the rules, often made by private TNCs and their agents for self-benefit. Thus, the issue is not FT or Managed Trade (MT) but Corporate Managed Trade (CMT), or international trade and finance managed via generally undemocratic and unaccountable corporate for-profit agents, or Democratic Managed Trade (DMT), that recognizes that the rules of global trade and finance regime should be set democratically, not by capitalist elites.

8 Constructing International Markets that Work

This importance of this aspect of global social policy should be uncontroversial as it follows the basic Radical, and NC, economics view that in order to produce public benefits markets must be sufficiently competitive to

keep prices low for consumers in the short-run, but not so competitive that they do not support dynamic investment and robust product and process competition in the long-run. This is, or should be, a widely accepted role of public policy. Ensuring the former is arguably the only role for public policy in NC theory (see Baiman 2016, Chaps. 9 -10).

In the context of this paper the issue is creating markets that constrain the gap between costs and markups to ensure adequate but not excessively large or small, producer profits. In the DCM model of Figure 1 the key policy objective is to enforce a socially beneficial gap between the cost line and the price and quantities demanded by firms. As noted earlier, very low mark-ups produce lower prices and more CS in the short-term, but may reduce potential future dynamic efficiency gains from reinvesting firm profits. Conversely, high mark-ups and profits may signal a lack of competition and wasteful and socially destructive rentier exploitation. Just as with national policy, but even more so internationally where the stakes and inequities of power are likely to be larger, policy should be directed toward monitoring, taxing and regulating markets, to optimize markup/price minus cost differences.

A radical political economic DCM view, in contrast to the false SDM picture, highlights that there is no inherent value to free market equilibrium. More generally, no private person or company inherently deserves a particular income or profit from the market. Rather, markets are social constructs whose outcomes need to be constantly evaluated and adjusted through taxes, subsidies, social planning, and other regulation, to produce social benefits. Income and wealth flows should be constantly reviewed in order to tax, subsidize, and adjust market rules as necessary in order to improve broad-social benefits.

9 Reducing International Unequal Exchange

At a deeper level the UE models show that unregulated FT produces unequal exchange, or a transfer of labor from those countries (or individuals or corporations) with a weaker market position to those with more market power (Baiman, 2017, Chap. 5-6). The models further show that in the absence of non-market effects,

technological progress is likely to increase unequal exchange and thus economic and social inequality between and within nations. Nonmarket effects would apply for example to the industrial and managed trade policies that were/are employed by East Asian countries and accepted and supported by the U.S. (through open trade policies) as part of cold war political strategy.

Since gaps in wages, environmental, social regulation and taxes, are typically much larger internationally than domestically, the importance of a trade and finance regime that reduces unequal exchange, economic and social inequality between nations, is even more important globally than domestically. This is particularly so, given the stylized facts (Baiman, 2017, Chap 8) showing that modern international trade and finance is dominated by foreign direct investment and portfolio capital flows, and inter- and intra- transnational corporate trade, trends that are generally motivated by successful efforts to capture profit by exploiting UE between nations. This shows that international trade is driven by UE and absolute advantage, not equal exchange and comparative advantage.²⁴

The issue is: where is the cost curve set in Figure 1? According to the UE models, cost curves are social and national outcomes since they reflect direct and indirect labor costs dependent on class distribution, taxes, and regulations (as well as specific and overall productivity levels). Advocates of an absolute or relative purchasing power parity (PPP) as one of the fundamentals that should underlie global pricing ignore that global prices are functions of national costs and especially labor costs, largely determined by social, economic, and political conditions (Eiteman et. al., 2016, Chap. 6). Given that, as shown in the UE models, FT will reduce prices and production costs to their lowest possible level does not mean that this is socially optimal, naturally efficient, or just, since this price is not produced by an objective SDM. Rather, per the DCM and UE models, costs of production and prices, reflect the social, political, and economic conditions of the location(s) of production.

For example, given that (in January 2015) a Big Mac cost 12.2% more in Denmark than in the U.S. does not imply, as suggested by PPP FT doctrine, that the Danish Krone is overvalued.²⁵ It is rather, at least in part, due to Danish fast food workers (in Sept. 2014) making an average of \$20.70 an hour, with pension, paid

²⁵ Eiteman et. al., 2016, Exhibit 6.1, p. 149.

holidays, sick days, and regular pre-assigned working hours, compared with about \$9 an hour without these benefits, in the U.S. (Greenberg, 2014).

Ideally, an international trade regime would raise international standards allowing countries like Denmark to impose tariffs on imported goods and services with lower local production costs due to lower social and environmental standards, and rebate this revenue to others to support a gradual rising of social and environmental standards (Baiman 2017, Chap.5 and 7).

In this sense, standard measures of cost of production, especially in the global context, do not reflect the real costs, or truly greater efficiency or quality in production, but simply different social and environmental standards. In some nations, like the U.S., highly profitable companies in a low-wage service sector, not only pay wages and benefits below a minimal living wage for most workers; but they offset, or externalize, the costs of basic needs like health care, day care, shelter and food, for their workers onto the public sector, and to which they often also pay low or negative taxes due to corporate subsidies (Jacobs, 2015).

Low cost companies that do not pay the real cost of living for their workers, including retirement and health care, are not efficient in any true sense. Prices in any given market should reflect, or at least over time move toward, the social costs of living in that market. Making profit by arbitraging living standards does not improve global production efficiency but sets up a race to the bottom with most benefits accrued by TNCs who do not generally pass through the full cost benefits of low-wage production. A meaningful global trading regime should reduce such arbitrage.

Finally it is important to note that UE will not characterize all international trade, but includes intra-TNC and “north-south” trade that is becoming increasingly important in the global economy.²⁶ Shaikh (2016, Chap. 11) provides evidence supporting the notion that in the long run, real exchange rates reflect real production costs, so that the broad pattern of international trade gravitates toward the same ‘real competition’ model, whereby ‘regulating’ (lowest real cost) producers are able to set prices and dominate markets, as in the

²⁶ Dicken (2015, p. 20) estimates that two-thirds of world trade is carried out by TNCs and about 1/3 of this is intra-TNC.

domestic economy. As noted above²⁷, unequal exchange theory compliments Shaikh's classical approach by highlighting sectors and agents, able to exploit unequal market power to gain rentier profit through alienation and/or extract unequal returns through higher prices (for example by setting prices far higher than the labor costs of low-wage production platforms). In Shaikh's real competition model, this is a situation where a 'regulating capital' set prices far higher than costs thereby capturing very large rentier profits. Because cost structures are more divergent, this is more common in the international economy than the domestic economy. Hence, Unequal Exchange is more typical in international trade, and labor value based equal exchange more common in domestic economies (both within a DCM context) (Dicken, 2015, Ch. 1; Shaikh, 2016, Chps. 7-9).

10 Corporate Managed Trade (CMT) or Democratic Managed Trade (DMT)?

All markets, including international markets, are social constructs. The real question is who, and for what ends, are they being constructed? As should be obvious, modern trade agreements are mostly not about trade, but about global political economic governance. For example, reportedly only 5 of the 29 sections of the proposed (but kept largely secret from the public) Trans-Pacific Partnership (TPP) that would have established international trade and finance rules for about 40% of the world's economy, address trade. The remaining sections deal with rules regulating (or preventing regulation of) the internet; local investment content requirements; hospital, banking, and transportation; and patent rights for pharmaceuticals and media production. These supposed trade agreements were highly unpopular Global Governance Agreements designed to override national democratic governance and lock into place a form of private TNC corporate governance. This is a form of private *dictatorship* over global economic policy orchestrated through brute class power by TNCs and allied or complicit public officials ideologically captured by Neoliberal or Neoclassical FT ideology. These agreements are a direct anti-democratic usurpation of global economic and political power by capital through TNCs, that should themselves also be democratized.

²⁷ See footnote 24.

The major reason the fiction can be maintained that these agreements are not corporate takeovers of democratic rights, is the FT and free market doctrines, based on the mythical notion that the economic sphere is private and that private economic agents have no real social power since they are responding to objective and efficient market forces (Baiman, 2016, Chap. 3). FT is not only bad economics, but it has become an ideology undermining basic democracy.

11 Conclusions

In so far as introductory Neoclassical (NC) economics is based on the foundational supply and demand and comparative advantage memes, it is based on ideological fiction that is empirically and/or mathematically erroneous. The fact that these memes remain at the core of standard economics instruction invalidates the scientific claims of NC economics and exposes their overtly political and apologetic function. In the interests of constructing more just, humane, and sustainable national and international economic systems, these core doctrines need to be removed from the introductory economics curriculum and replaced with demand and cost and unequal exchange memes that better reflect economic reality (Baiman, 2016, 2017). More advanced economics courses should build on these non-apologetic and more realistic and logically consistent SDM and UE memes to offer a truly scientific understanding of the economy based on classical political economics (e.g., Shaikh 2016).

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