THE GENESIS OF QUANTITATIVE BUDDHIST ECONOMICS

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ABSTRACT

This paper aims to summarize three fundamentals to create Quantitative Buddhist Economics, QBE, for people living with families and money to solve economic problems using graphs and mathematics that is contemporary style. Mathematics, scientific methods, and some parts of the operation-research method are methodologies. Minkowski's 4D model, price theory of economics, and Buddha's doctrines in the Thai Theravada schools are data. The investigation found that three fundamentals of QBE consist of (1) time, (2) the new price model, and (3) doctrines concerning the wealth of individuals from the Thai Theravada schools. First, about time, the inaccuracy, especially time positions of the Minkowski 4D model, was found, and the time equation was found later. The time equation and logical mathematics can reveal the inaccuracies of the price theory, the core of present economics: (1) an equilibrium condition, (2) price adjusting to an equilibrium point, and (3) an inappropriate demand definition, which needs to be corrected. Second, a new price model was created for two objectives: (1) eliminating the inaccuracies for avoiding the collapse of economic theories and (2) using the model for QBE that contributes QBE based on a scientific concept, so QBE can show the many different price concepts compared to present theoretical economics. Third, two cores of QBE consist of the first, the law of action, which shows positive and negative economic results affecting the wealth of a nation and individuals mainstream economists have never considered. The second, the "Heart of Millionaires," reveal suitable activities for solving economic problems based on Buddha's doctrines: meritorious making money by production, consumption, saving, and making terrific friends.

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Introduction

Schumaker created a new phrase, "Buddhist Economics or BE," to present new paradigms that solve economic problems which challenge mainstream economics[1]. However, BE is viewed as alternative economics that mainstream economists may ignore. Many leading professors and experts in Thailand, such as Apichai Puntasen[2], Phrayadh Payutto[3], Dhammcitto[4], and other countries, such as Nelson[5], Brown[6], and Prayukvong and her team[7] have written books and articles to explain what BE is.

However, many obstacles to developing BE remain to challenge theoretical economists. **First,** BE's explanation is still described without graphs and mathematics. **Second,** mainstream economists are using Buddha's doctrines in improper situations. Buddha taught two main groups of people: hermits and those living with their families. For example, in the Noble Eightfold Path[8], Buddha gave a sermon for hermits who left their families to search for a way to get rid of sufferings in their minds eternally. Considering the relationship between Magga and people, the most suitable persons are monks and people who want to cleanse their minds to reach the highest goal in Buddhism, which concerns little money. These people are not a good sample group for explaining BE because BE concerns people living with families and making money. Notably, when readers have just studied Buddha's doctrines, if they do not realize the places and reasons Buddha taught the topics, they may misunderstand the context causing the doctrines. Buddha almost always questioned his followers about the topic they were discussing. After Buddha knew the topic, he gave his sermon following the followers' requests.

Third, studying ways to understand Buddha's doctrines is another obstacle. New different paradigms make people be pushed at the starting point of the new paradigm. Hence, people who want to understand Buddha's doctrines need to study in three Buddha's ways, not only to read and think following an ordinary Western style. Buddha's doctrines emphasize three practicing ways

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[1] Ernst F. Schumacher, *Small is Beautiful: Economics as If People Mattered*. (New York: Perennial Library/ Harper & Row, Publishers, 1975).

[2] Apichai Puntasen, "Buddhist economics," *The Chulalongkorn Journal of Buddhist Studies* 12 (2008): 1-61.

[3] Phrarajavaramuni (Phrayudh Payutto), *Buddhist Economics*, Accessed August 2, 2021, https://www.watnyanaves.net/uploads/File/books/pdf/buddhist_economics.pdf.

[4] Phrabrahmapundit (Prayoon Dhammcitto), *Religions and Sustainable Development Goals (SDGs)*, Accessed June 22, 2022, https://www.watprayoon.com/files/book/2562-03-18-SDG.pdf.

[5] Julie Nelson, "Buddhist Economics: An Enlightened Approach to the Dismal Science," *Feminist Economics* 24 (2018): 184-190.

[6] Clair Brown, *Buddhist Economics: An Enlightened Approach to the Dismal Science*, (New York: Bloomsbury Press, 2017).

[7] Wanna Prayukvong, Isao Takagi, and James Hoopes, "Clair Brown, Buddhist economics: an enlightened approach to the dismal science," *Social Choice And Welfare* 49 (2017): 411-412.

[8] Phrarajavaramuni (Phrayudh Payutto), *Aññhaïgika-magga: the Noble Eightfold Path; factors or constituents of the Path*, Accessed August 2, 2021, https://www.watnyanaves.net/uploads/File/books/pdf/dictionary_of_buddhism_pra-muan-dhaama.pdf.

directing to mind development: (1) giving, (2) controlling themselves with five or eight or 227 precepts that practitioners cease to harm themselves and others, and (3) cleansing their minds by meditation and considering "four aspects: body, emotion, mind, and all nature, including dhamma" while staying the second state of meditation[9]. If they had never meditated before, people could not understand the different feelings between meditation's first, second, and third states. It looks like people could not understand the taste of salt from reading and thinking. **Fourth**, poverty in economics exists. Many economists and experts, such as Veblen[10], Arrow[11], Drucker[12], and Krungman[13], Heilbroner[14], including a new group of economists called real-world economists[15] indicated the existence of many economic inaccuracies. Unfortunately, their warnings were overlooked by mainstream economists for a long time.

Mainstream economics, ME, is capitalism, materialism, and consumerism that is inappropriate with BE, which is the "special" mixed economic system, not capitalism or communism or the present mixed economic system. Also, the middle way of consumption is not consumerism. As a result, if we use theoretical mainstream economics to present BE, it looks like constructing a new building on earthquake ground. **Fifth,** the crucial question is where the starting point for developing QBE with a Western-style discipline is. These obstacles make an unchangeable presentation of BE. The objective of this study is to create quantitative Buddhist economics or QBE as one of the disciplines in the academic world. Mathematics and scientific methods were used to find time inaccuracies in theoretical physics and economics that had been done before this paper was written. The new price model presented before this paper is used to explain Buddha's doctrines concerning people living with families and making money that are taught in Thai Theravada schools.

Data and Methodology

Before this paper was written, the new characteristics of time and inaccuracies in theoretical economics had been presented in many Scopus-indexed journals with different methodologies: derivative mathematics was used for searching time inaccuracy in Minkowski's 4 D model; as a result, we found new time characteristics, including the time equation. Second, the time equation and the scientific method were used to determine the inaccuracy in price theory in microeconomics; as a result, many causes of inaccuracies were found. Third, some parts of the

[9] Andrew Skilton, "Meditation and its Subjects: Tracing Kammatthana from the Early Canon to the Boran Kammathan Traditions of Southeast Asia," *Contemporary Buddhism* 20 (2019): 36 -72.

[10] Thorstein Veblen, "Why is Economics not an Evolutionary Science? ," *The Quarterly Journal of Economics* 12 (1894): 373.

[11] Kenneth Arrow, *Real and Nominal Magnitudes in Economics*, (New York: Basic Books, 1981), 139-150.

[12] Peter Drucker, *Toward the Next Economics, and Other Essays*, (New York: Harper & Row, 1981).

[13] Paul Krugman, *How did economists get it so wrong?,* Accessed December 16, 2021, http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html.

[14] Robert Heilbroner and William Milberg, *The Crisis of Vision in Modern Economic Thought*, (Cambridge: Cambridge University Press, 1996).

[15] Edward Fullbrook, *A Guide to What's Wrong with Economics*, (London: Anthem Press, 2004).

Operation-Research method and the finding in the second step were used to create a new price model for solving theoretical price inaccuracies and contributing to QBE. These three steps have been concluded in topics numbers 1 and 2. This paper which is the fourth step, Buddha's doctrines taught in the Thai Theravada schools are used as data to work with the new price model to explain QBE. In short, the data of those four steps consist of Minkowski's 4D model, price theory of economics, theoretical price inaccuracies, and Buddha's doctrines taught in the Thai Theravada schools concerning people living with their families and making money.

Result

1. New Characteristics of Time: The First Fundamental of QBE

The starting point of establishing QBE as a new paradigm to solve economic problems came from two events: first, a professor in a graduate school, NIDA, in Thailand indicated that BE did not exist in the academic world at that time in an interview room in 1982. Second, a professor in an economic seminar class of graduate students at Kasetsart University in Thailand in 1987 stimulated students to discuss poverty in economics written by Robert Kuttner[16] in The Atlantic Monthly journal. If something wrong in economics exists, it makes people live policymakers who control economic policies in the indirect direction of development. These policymakers have economists as their consultants to solve the economic problem. Notably, theories in economics affect people at micro and macro levels.

Regarding poverty in economics, time was found to be a starting point of QBE. In detail, real-world data of agricultural-product prices had been plotted on a piece of paper to get a demand curve with a vertical axis representing prices per unit and a horizontal axis for the demand quantities, but all points could not be drawn to get the demand curve because of a lack of time values. However, having added a new time axis with the previous data, we found a floating line could be drawn. Something wrong in economics concerning the time dimension is the first finding. The second finding concerns the stability of an equilibrium point. The stability of the point conflicts directly with three characteristics (of nature) following Buddha's doctrine. Everything has been changing all the time. It could not stay in the same situation for so long. We could not control it following our desire because it is not anyone's belongings[17]. It is born, stays for a while, and goes to the end. At the equilibrium point of price theory in microeconomics, the condition is that the quantity demanded equals the amount supplied. If other prices occur higher or lower than the equilibrium price, those prices must adjust to the equilibrium point in the final because of excess demand and supply. In other words, the point is stable. Also, in 1948, Alfred Marshall commented about time in economics "element of Time" as "the center of the chief difficulty of almost every economic problem"[18]. These two findings indicated time must be understood first and it was the starting point of QBE.

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[16] Robert Kuttner, *The Poverty of Economics*, Accessed January 16, 2023, https://cdn.theatlantic.com/media/archives/1985/02/255-2/132614438.pdf.

[17] Ibid., 76.

[18] Redvers Opie, "Marshall's Time Analysis," *The Economic Journal* 41 (2022): 199-215.

The time can be divided into two periods following time characteristics: before and after 1905. Before 1905, most people believed that time everywhere in the universe could be measured at the same rate or time as an absolute value. However, in 1905, Einstein changed their beliefs and explained time as a relative value. The time can be measured at different rates[19]. He did not explain the direction of time.

Minkowski, a leading mathematician, explained that time values in a three-dimensional body separate themselves from three principal axes, which locate between three principal axes with (x, y, z, t). Notably, no time value is in the three principal axes[20]. See Figure 1.

In 1987, Stephen Hawking accepted Minkowski's model and created a new phrase, "arrow of time," in his book[21]. However, time is still scalar, which has no directions. In 1995, Paul Davies wrote a book indicating that the time dimension concerning unfinished Einstein work might be an essential missing link that scientists did not know well[22].

Time relates to everything in the universe. Mathematicians always use numbers to represent everything, such as tangible and intangible things. Notably, time should have been involved in numbers. As a result, we can make a crucial hypothesis "There are time values matching numbers."

In 2019, Minkowski's inaccuracy about time was discovered and first published in a Scopus Indexed journal[23]. As a result, the investigation found many new time characteristics, especially time values matching numbers. See Table 1.

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[19] Michio Kaku and Jennifer Trainer, *Beyond Einstein: The Cosmic Quest for Theory of the Universe*, (New York: Bantam Books, 1987), 26-30.

[20] Encyclopedia of Mathematics, *Space-time*, Accessed January 16, 2023, https://www.encyclopediaofmath.org/index.php/Space-time.

[21] Stephen Hawking, *A Brief History of Time: From the Big Bang to Black Holes*, (New York: Bantam Books, 1998).

[22] Paul Davies, *About time: Einstein's Unfinished Revolution*, (Singapore: Simon & Schuster, 1995).

[23] Poramest Boonsri, "The Time Equation Explaining Equations in Physics and Economics," *International Journal of Engineering and Advanced Technology (IJEAT)*, 8 (2019): 165-168.

The new time characteristics for finding theoretical-economic inaccuracies will be data and crucial guidelines for creating a new price model that benefits mainstream and Buddhist economists. In other words, the model will work with Buddhist doctrines taught in Thai Theravada schools, which concerns people living with families and making money to explain QBE to solve economic problems at micro and macro levels.

2. New Price Model: The Second Fundamental of QBE

2.1 Theoretical Price Inaccuracies

We can divide economic inaccuracies into three aspects: equilibrium, demand, and supply. The first aspect is the nonexistence of the equilibrium condition of the price theory in microeconomics.

At the equilibrium point, the condition is that the quantity demanded is equal to the amount supplied[24]. In the price system, there is only one product on the supply side and money on the demand side at the moment of exchange. At that moment, the time value of buyers (or demand side), td, is equal to the time value of sellers (or supply side), ts. In this case, td3 = ts3. See Figure 3. After the exchange, a product and money are transferred to opposite sides. The time values matching the empty product in sellers' hands and the empty money in buyers' hands are ts3 =td3 = 0. The quantity supplied and demanded is a product with two names: first, in sellers' hands before and at the moment of exchange, and second, in buyers' hands after the exchange. The equilibrium condition does not exist because the quantities occur at different moments[25].

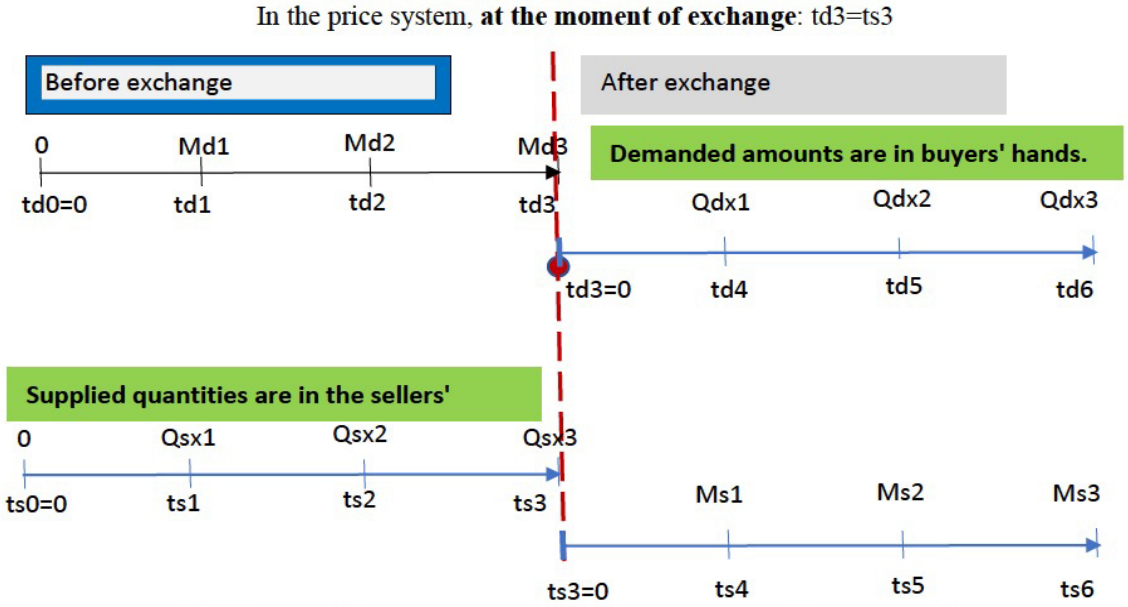


Figure 3. The equilibrium condition does not exist because the quantities supplied and demanded are a product called at different moments.

[24] The Editors of Encyclopaedia Britannica, *Demand Curve*, Accessed January 16, 2023, https://www.britannica.com/topic/demand-curve.

[25] Poramest Boonsri, "Discovery in Reasons Economics is not an Exact Science Plus New Price Model," *International Conference on Mathematical and Statistical Physics, Computational Science, Education, and Communication (ICMSCE 2022)*, 12616 (2023).

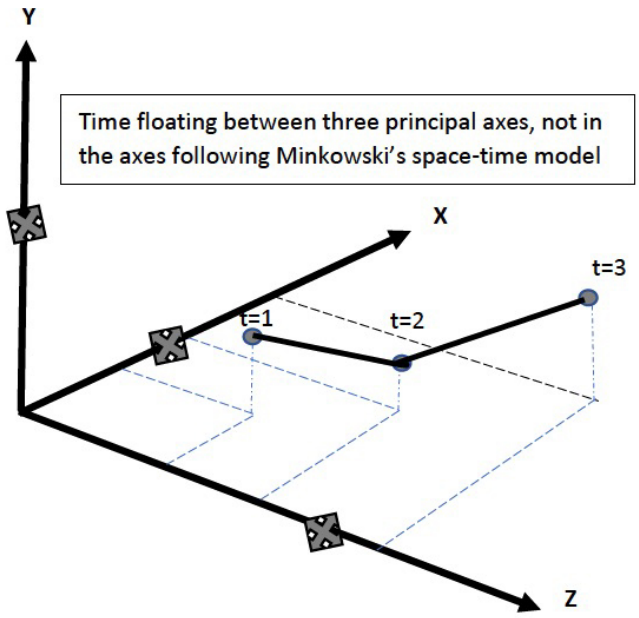


Figure 1. The time positions are not in three principal axes following Minkowski's space-time model.

Table 1. Comparison of time characteristics between Minkowski's model and new findings

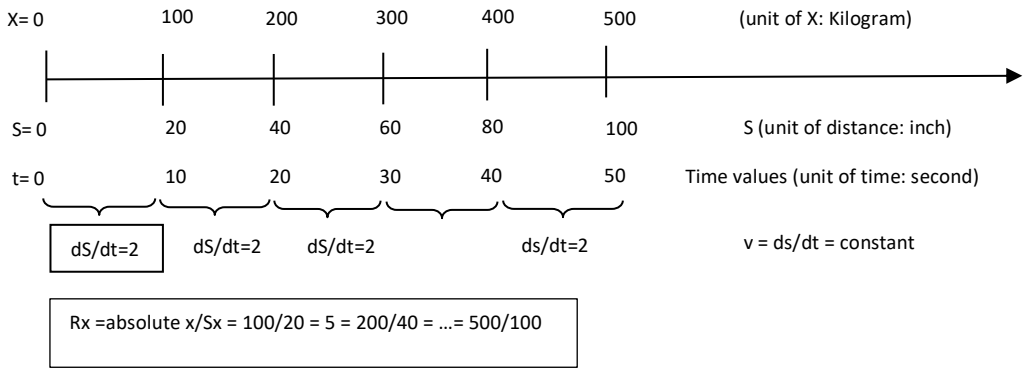
nos.	Minkowski's 4D model	New findings
1	Positions of time values floating between three principal axes with (x, y, z, t).	Moving along three principal axes with (x_t, y_t, z_t). The time value matches a number.
2	x = f (t), y = g (t), z = h (t) Moreover, negative time is possible.	$\|x\| = S_xR_x = R_xv_xt_x$, $\|y\| = S_yR_y = R_yv_yt_y$, $\|z\| = S_zR_z = R_zv_zt_z$. Distance is a function of time and is always positive, so the time value is always positive.
3	No particular equation indicates an exact position of a time value in a number line.	The time equation can indicate the exact position of a time value matching a number in a number line.
4	Time is a relative value and scalar.	Time is an absolute value when it matches the origin and a relative value when it matches the other value except for the origin. Time has its directions or time as a vector.
5	It has no law of time direction	Finding the law of time direction.
6	It does not concern the subatomic level.	Finding time in 24 magic angles at the subatomic level.
7	It does not concern the celestial level.	Finding time directions reveals a new gravity characteristic, the polarity of gravitational force or gravity has its poles.

8	It does not concern Unified Field Theory.	Time shows two physics levels in one coherent picture, a part of Unified Field Theory that is crucial for physics.
9	It does not involve economics.	The time equation can explain equations in physics and economics.
10	It does not involve an equilibrium point in economics.	Finding the time equation indicating the nonexistence of the equilibrium condition is the end of price theory. See the next section.

The time equation is $\mathbf{t_x} = \frac{|x|}{R_x.v_x} = \frac{S_x}{v_x} = S_x\left(\frac{\Delta t_x}{\Delta S_x}\right)$, where t_x represents the time value that matches a number x. The x represents a number on the x-axis; v_x represents the drawing rate (or velocity) the drawer uses to draw the axis; R_x represents the ratio of the absolute x per distance S. Also, S is the distance of the number x far from its origin. Notably, when we determine a number, such as x, in an x-axis, the number we see can be called the "seen number." Also, every number matches four unseen values: t, S, R, and v. Although we do not see these unseen numbers, the time equation can calculate their exact positions. See Figure 2.

In Figure 2, the numbers 0, 100, 200, 300, 400, and 500 kilograms at the positions (or distance) as 0, 20, 40, 60, 80, and 100 inches long from the origin. See Figure 2. The constant drawing rate v or ds/dt is two inches per second, and the ratio R is five kilograms per inch; as a result, the time values matching the numbers are 0, 10, 20, 30, 40, and 50 seconds, respectively.

The time equation can indicate: (1) time always is in the three principal axes (x_t, y_t, z_t). Second, each time value is always positive, following a positive distance. Third, the positive time values match both positive and negative numbers. Fourth, the time equation can calculate an exact time position matching each number on three axes.



$$t_{200} = 20 \text{ seconds (or unit of time)} = \frac{200 \text{ (kilograms) (or absolute x)}}{5\left(\frac{\text{kilograms}}{\text{inch}}\right)2\left(\frac{\text{inches}}{\text{second}}\right) \text{(or } R_x v_x)}$$

Figure 2. The time equation reveals the time value as 20 seconds matching the number x as 200 tons.

Also, the other evidence supporting the nonexistence of an equilibrium condition is the improper demand definition. The demand definition is inappropriate because the definition is ambiguous. People cannot judge when it is true or false because it simultaneously shows true and false situations. The cause of the inaccuracy comes from the two-dimensional statement "able to buy." The statement consists of two sides of people. We can mathematically prove this statement's inaccuracy by adding the new statement, "Buyers meet sellers who sell the product. The proof shows that although buyers are willing to buy the product because they have money at some moment, they can buy the product in the only case their find sellers who sell the goods or services. However, they cannot buy if they cannot find any sellers[26]. See Table 2.

Table 2. The demand definition reveals two different results after adding the new statement, "Buyers find sellers who sell the product."

The demand definition	Buyers are willing to buy the product	Buyers have money	Buyers buy at some moment	Buyers are able to buy the product	*Buyers find sellers*	Logical mathematics reveals the results of the relationship of all statements.
In the first case, the demand definition reveals true and false simultaneously.						
/	/	/	/	/	/	/
/	/	/	/	/	×	×
In the second case, the demand definition simultaneously reveals true and false.						
×	/	/	/	/	/	×
×	/	/	/	/	×	/

The third inaccuracy is the nonexistence of stability of the equilibrium point if considering the time directions on the demand and supply curves while adjusting prices to the equilibrium point in the case of excess supply and demand. The proof shows the prices that are higher and lower than the equilibrium price could not adjust themselves to the equilibrium point because the time values always are positive following distances that are always positive. See Figure 4 and Table 3. The time directions on a demand curve move downward from left to right sides but move upward from left to right sides on the supply curve. In the case of excess supply, a price is higher than the equilibrium point; on the demand curve, the price matching the time value as two will change to three downward. However, on the supply curve, the price matching the time value as four will change to five upward. Economists explain that the price matching the time value as four changes to three, which shows a negative time value. The time value running backward is one of the Minkowski-model inaccuracies.

[26] Ibid.

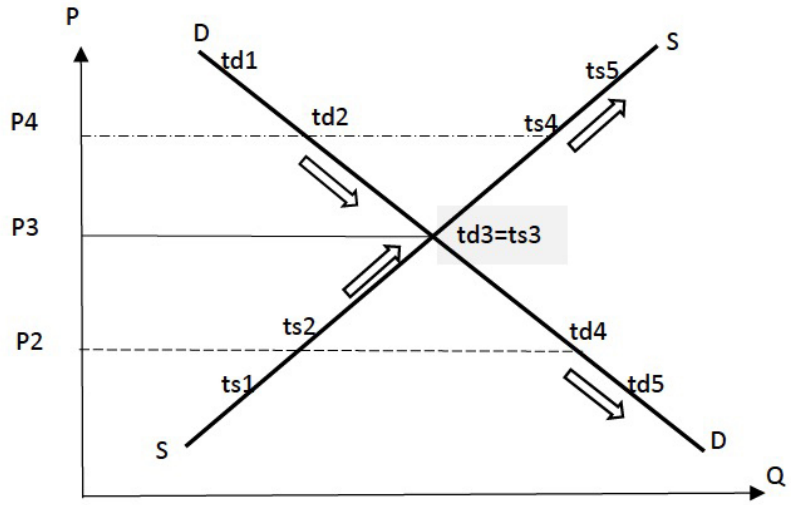


Figure 4. Negative time values changing from td4 to td3 and ts4 to ts3 are the third economic inaccuracy because time values must be positive following positive distance.

Table 3. Inconsistency of time directions on two axes is found.

When economists explain changing prices, they overlook the importance of time directions on the two axes.			
time directions concern decreasing price		increasing price	
on a supply curve	on a demand curve	on a supply curve	on a demand curve
Both time directions in the two axes are ignored.	The time direction on the vertical axis is ignored, but only the horizontal axis is used.	The time directions on both vertical and horizontal axes are used.	The time direction on the horizontal axis is ignored, but only a vertical axis is used.

Following previous proofs, when the nonexistence of stability of the equilibrium point is found[27], the price theory of mainstream economists needs to be corrected. Besides, the explanation concerning the price theory, especially the price mechanism or invisible hands, is the unproven capitalists' reason. In real-world markets, human thinking is the real cause that makes price change. For example, the price of some ingredients to cook foods for two merchandizers increases by 5 percent, and the first and the second ones increase their new prices on food by 10 and 25 percent, respectively. At this point, human behavior is one concept that should be studied.

[27] Ibid.

When considering Buddha's doctrines concerning economic activities, we will see different paradigms to solve economic problems compared to mainstream economics, which does not pay attention to people's morality. The difference between ordinary morality and Buddha's doctrines comes from the details of Buddha's sermon for 1,250 followers on the full-moon night called now "Magha Puja": (1) ceasing all evil, (2) doing what is good, and (3) developing minds to purity state (or cleansing one's mind). Because of the nonexistence of the equilibrium condition and the point, including others, a new price model was created to solve theoretical problems. The new price model will be used with Buddha's doctrines taught in the Thai Theravada schools to be one of the fundamentals of QBE.

2.2 New Price Model to Solve Theoretical-price Inaccuracies and Use for QBE

The previous inaccuracies, numbers, and time values matching the numbers are data. Some parts of the operation-research methods are used to create a new price model to solve the inaccuracies and use for QBE. The general form of the new price model with time in microeconomics and macroeconomics can be concluded and written as follows[28]:

The mathematical price model with time

$$P_t = f(M_{Tt}, Q_{Tt}) = \frac{M_{Tt}}{Q_{Tt}}$$

Represents a product's price per unit; M_T represents the buyer's money transferred from the buyers to the sellers. The M_T will be a form of "accumulated value,"; Q_T represents the quantities of the product which are transferred from the sellers to the buyers with "accumulated values,"; and the subscript "t" represents a value of time matching a value.

In the case of statics or a time value, suppose we buy a shirt for 80$, and the model shows the new paradigm of the price. See Figure5.

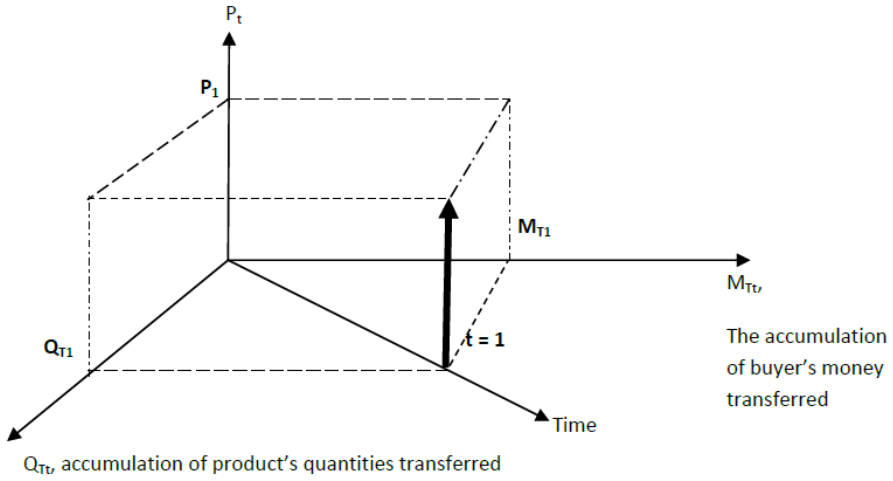


Figure 5. The model explains statics (or a time value)

[28] Ibid.

The price of 80$ consists of many increasing-price steps. Table 4 shows 35 steps that make the final price 80$. For example, P_N = 55$ = 30+1+ 2+3+10+0.5 $. See Table 4 in the fourth row. The price model with a static case can explain four economic activities: consumption, production, exchange, and distribution. Besides, we found these characteristics in the model: nobody knows and receives the details of markets entirely. The product is not homogeneous, and transportation makes the product's price higher. Sellers are almost price-makers; buyers are almost price-takers. The number of buyers is higher than sellers.

Table 4. With the price model, a price consists of many dimensions

Natural resources or costs (dollar per each)	Wages (dollar per each)	Rent (dollar per each)	Interest (dollar per each)	Profit (dollar per each)	Tax (dollar per each)	Sellers making prices for telling buyers
3.5$ each for a natural resources	1$ each for worker B	2$ each for landlord C	3$ each for banker D	10$ each for farmer A	0.5$ each	20 $ each to producer E
20 $ each is the producer E	1$ each for worker F	2$ each for landlord G	3$ each for banker H	10$ each for producer E	0.5 $ each	30 $ each to the wholesaler I
30$ each is the cost of the wholesaler I	1$ each for worker J	2$ each for landlord K	3$ each for banker L	10$ each for wholesalers I	0.5 $ each	55 $ each to retailer N
55$ each is the cost of retailer N	1$ each for worker O	1$ each for landlord P	2.5$ each for banker Q	20$ each for retailer N	0.5 $ each	80$ each to buyers

In the case of dynamics (or many values of time) can be demonstrated. For example, at t =1, a petroleum station's average diesel price per unit is Pa = 1 dollar per liter. Petroleum companies as sellers sell total product Q1 = 10 million liters, and buyers pay total M1 = 10 million dollars. After the conflict between Russia and Ukraine, including NATO, at t = 2, Pa increases to Pb as 1.1 dollars per unit. In this case, the sellers have sold diesel to their markets 25 million liters since t1. All buyers have paid total money 27.5 million dollars since t1.

Notably, the amount of the product since t1 has been used increasingly from 10 to 15 million liters, so the total product is 25 million liters at t = 2. Similarly, buyers have paid $ 10 to $ 17.5 million, so their total money is 27.5 million at t = 2. At t = 3 to 11, the price of this business has increased gradually because of higher costs, and total money and total product have followed the changing prices.

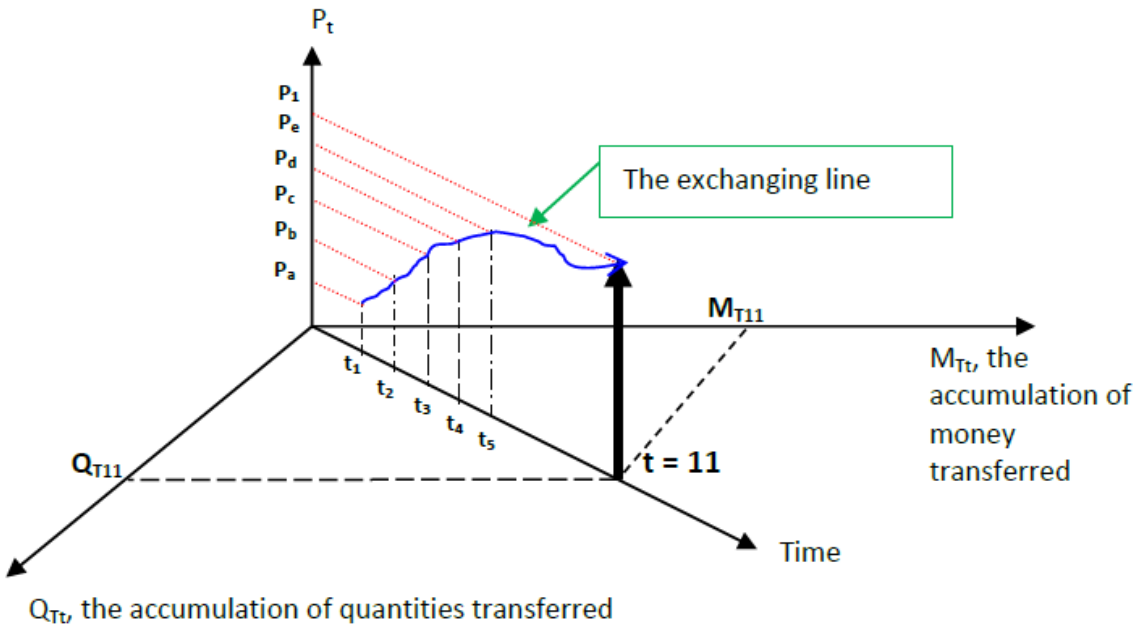


Figure 6. The model explains dynamics (or many time values)

Considering the new price model with time as a vector and the law of time direction[29], we found that a real-world market has unique characteristics. For instance, the market of a shirt brand A is different from other brands, and the market for a shirt is different from the markets of different products, such as houses or books, or many kinds of energy.

2.3 Unification between Micro-and Macroeconomics

The model unites micro-and macroeconomics in one coherent picture[30]. For example, in an individual case, the model shows a movie ticket price for a watcher to watch a movie. Suppose the price of a ticket is 10 $ at t = 1. The watcher got a movie ticket after paying 10 dollars. At the macro level, at t = 100, in a global case, 20 million people worldwide watch the movie and pay 200 million dollars for their 20 million tickets.

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[29] Poramest Boonsri, "Discovery in Time as a Vector Plus Polarity of Gravitational Force," *Palarch'S Journal of Archaeology of Egypt/Egyptology* 17 (2020): 957-966.

[30] Poramest Boonsri, "Discovery in Demand as Cross-Section Data Plus Unified Economic Model," *International Conference on Mathematical and Statistical Physics, Computational Science, Education, and Communication (ICMSCE 2022)* 12616 (2010): 20.

3. Buddha's Doctrines Taught in Thai Theravada Schools concerning Money: The Third Fundamental of QBE

3.1 Law of Action (or Kamma): The First Center of QBE

Buddha taught two kinds of people: those living with their families and those without families (or hermits). The monks in Buddhism can be divided into two groups[31]. The first group, called in Pali "Vipassanà-dura: burden of insight development; the task of meditation practice," is monks who emphasize practicing themselves for the highest pure state of mind. The second one, which is called in Pali "Ggantha-dura burden of study; the task of learning," is monks who focus on other directions, such as focusing on studying or building temples or others. Besides considering money, Buddha's doctrines can be divided into two cases: money concern and no money concern. Buddha's doctrines in QBE will concern people living with their families and making money. People living with their families will be happy when they get these conditions as follows: (1) bliss of ownership of money and property, (2) bliss of living without debts, (3) bliss of blamelessness, and (4) bliss of enjoyment of using money[32].

Holistic thinking of Buddha's doctrines from the sermon on the full-moon night called Magha Puja shows three directions. QBE involves Buddha's doctrines concerning ceasing all economic evil, doing what is good concerning money, and cleansing one's mind concerning money.

Also, considering these three directions of practicing, we find that Buddha's doctrines are based on the law of action[33] or in Pali's Law of Kamma because people should avoid evil actions. After all, unethical activities produce bad results. In contrast, meritorious actions have good results in the final. Also, the result of mental development is happiness. As a result, imitating the three directions, the core of QBE is the law of action.

3.2 The Heart of Millionaires: The Second Center of QBE

Buddha's doctrines concerning money are called informally in Thai the "Heart of Millionaires"[34]. If people want to get wealthy, they are supposed to do these four "directions": (1) properly making money (production or investment compared to mainstream theoretical economics), (2) suitably keeping money (or saving), (3) appropriate spending money (or consumption), and (4) making friends with good guys, which this aspect has never studied in theoretical mainstream economics.

First, to make money to solve economic problems, people, including Buddhists, are supposed to do their excellent work industrially and develop their work more efficiently; this is called in Pali "autthannasampada." Second, people, including Buddhists, are supposed to protect valuable properties for suitable keeping. This is called in Pali "arakkhasampada." Third, for appropriate spending, people, including Buddhists, should carefully spend money for themselves and six groups of people and keep their budget lower than their revenue, called in Pali "samajivita." Fourth, to have good friends and get the bliss of blamelessness, people, including Buddhists, must know what characteristics of excellent friends and do suitable ways. For

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Ibid., 26.

[32] Ibid., 192.

[33] Mahidol University, *The Law of Cause and Effect (The Law of Karma)*, Accessed October 25, 2022, https://www.mahidol.ac.th/budsir/Part4_5.htm.

[34] Ibid., 144

parents, people, including Buddhists, should take care of them when they are old, called in Pali "kallayanamittata."

Making money consists of two directions: making money with carefulness and carelessness. For example, proper making money consists of (1) avoiding evil-economic investments involving many businesses, such as producing poison or weapons, and (2) making money with proper actions.

Keeping money and property has two directions: keeping with carefulness and carelessness. One of the people's most valuable properties is their bodies, including their lives. Many people think that the five precepts are a doctrine for people to do what is good. However, considering the economic aspect, five percepts will prevent people from losing massive money in the short and long run. We can save money by controlling self-behavior or living with carefulness. For example, people who kill others are sentenced to prison; they lose opportunities to make money for their lives. One who has sex with persons who are not their couple increases the opportunities of divorce and losing money because of sue. One who drinks liquors and drives a car will increase the opportunity of losing colossal money, including a part of the body if the person gets into a car accident. Notably, the five percepts do not only practice oneself, but economic reasons also match the actions. When people cease cheating, at the moment, they stop the opportunity to lose money from their cheating. Money in the present still is in the pocket. One who loves to lie habitually will decrease credit if running a business and an opportunity to make new money or borrow money from bankers or friends. Also, keeping money by fixing damaged things is one of the activities to protect people's belongings and money.

Spending money consists of two directions: spending with carefulness and carelessness. Spending money with carelessness will concern six vices that are the cause of ruined wealth[35] as follows: (1) addiction to intoxicants; or drug addiction, (2) hanging habitually out at night (or roaming the streets at unseemly hours), (3) watching games or dramas as a habit (or frequenting shows), (4) playing gambling (or indulgence in gambling), (5) having false friends (or association with bad companions), and (6) always being lazy to work (or habit of idleness). Before doing good deeds, people are supposed to avoid evil deeds first. Suppose the practitioners are doing good deeds but still doing some evil deeds. As a result, the good results will also be decreased by the bad ones. It looks like cooking with stolen ingredients. After getting full, we must face cops.

Spending money with carefulness concerns these six groups of people: (1) their families, (2) parents, (3) friends, (4) servants or employees, (5) monks, and (6) teachers. Besides, the consumption should be a moderate amount for each person. Doing unsuitable deeds can cause illnesses and many symptoms, and people need to see doctors and pay money to heal. However, moderate consumption will decrease the mass production of capitalists but will increase natural resources for the next generations. The next generations have the right to live in their societies as their ancestors do. If natural resources run out, people will suffer and struggle to solve economic problems. The stronger will invade the weaker to get natural resources, increasing global economic problems.

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[35] Ibid.

Making friends consist of two directions: making friends with carefulness and carelessness. False friends and perfect friends have their characteristics and produce opposite directions of financial results. For example, false friends produce negative results that make people lose money.

Once questioned concerning how to get wealth in society, Buddha answered that kings at that time should have seeds of rice for people to produce their products. This doctrine indicated that the cooperation between the "good" private sector and "good" civil officers under "good" policymakers' control would increase the economic growth rate of the societies. The economic system involving this point is the "special" mixed economic system compared to the neoclassical mixed economic system, capitalism, and communism.

Buddha said people are happy using their money, and debt is people's suffering. These doctrines concern money directly. Buddha's doctrines for policymakers to get a wealth of nations were taught, which will be explained in QBE at the macro-level. Also, if applying the Heart of Millionaires to policymakers at the macro level, we will see a new paradigm for solving economic problems. For example, making good friends create good relationships between two countries that should be political policies for international trade. Besides, the relationship between the two centers of the third fundamental of QBE can be revealed in Figure 7. See Figure 7.

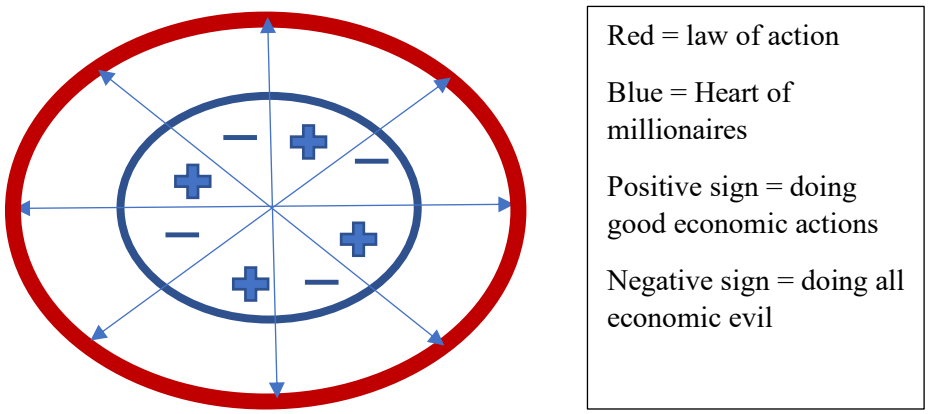

Figure 7. The third fundamental of QBE is that what people get concerned about financial results depends on what people do that concerned economic actions.

Conclusion

This paper aims to summarize the three fundamentals of QBE: time, the new price model, and Buddha's doctrines taught in Thai Theravada schools. The Buddha's doctrines were taught to people living with their families and making money to get the wealth of individuals and nations in a contemporary style, especially with graphs and mathematics.

The differences between the two concepts of economics can be revealed in the following table.

Table 5. Different aspects between mainstream and Buddhist economics.

	Mainstream economics	Buddhist economics
1	Capitalism	Not capitalism
2	Theories are created to support capitalists	Dhamma benefits individuals and societies including global village
3	Production is viewed in only one direction or production always create benefit for capitalists and societies.	Production is viewed in two directions of results: proper production benefits people and societies, but improper one can make problems.
4	Consumption is viewed in only one direction or consumption always benefits households and society.	Consumption is viewed in two directions of results: appropriate consumption always benefits households and society, but inappropriate one makes trouble.
5	High national income reveals the wealth of a nation.	High national income does not reveal the wealth of a nation, such as high income may indicate high-income differences between people including high debt.
6	Wealth involves a small group of people, capitalists.	Wealth involves many groups of people.
7	The theory reveals the paradox of thrift concerning saving	Saving has two directions of results: benefits and not benefits.
8	The theory does not concern good relationships between individuals and countries.	Two directions of good relationships between people and people, including countries and countries: benefits and not benefits.
9	The theory does not involve human development.	Dhamma involves human development: practitioners try to improve themselves in three aspects: Silla, meditation, and vipassana.
10	The theory does not involve donation.	Donation increases consumption and production in society.
11	The theory does not concern human-mind development.	Human-mind development decreases greed and increases the consumption and production of individuals and society.
12	The capitalists reveal animal spirits. The stronger survives the looser die.	Society reveals human spirits: the stronger helps the weaker.
13	Happiness occurs in a small group of capitalists.	Happiness occurs in many large groups of people.
14	Many theories have scientific inaccuracies.	All aspects are based on scientific concepts which we can prove.

In Table 5, for people living with families and making money to reach an individual's wealth and happiness, the people must balance wealth from materialism and happiness from idealism, which may be called "the middle way." Happiness from wealth concerns objects, which are outside of people's minds, but happiness with peace of mind does not concern any objects. Cleansing one's mind supports people to give others things, which stimulates consumption and production of society at higher levels compared to no donation.

After studying QBE and practicing themselves in three Buddhist directions, readers will understand a new way to get wealthy with peaceful life. For example, happiness from "giving" things to people, animals, society, environment, country, and global village produces a peaceful life far from a selfish state. Besides, avoiding all economic evil helps people protect their money. Also, doing suitable economic activities contribute to people getting money. In contrast, capitalists producing weapons to sell will make themselves rich but create many problems, which the government must lose people's taxes to solve. Notably, countries with high national income could not reveal the wealth of people and nations if we do not consider the quality of investment, consumption, saving, and the relationship to neighborhood countries, which can describe in the Heart of Millionaires of QBE at the macro-level with graphs and mathematics.

Finally, readers will realize different paradigms of two branches of economics to solve economic problems for individuals, countries, and a global village.

Bibliography

Arrow, Kenneth. *Real and Nominal Magnitudes in Economics.* New York: Basic Books, 1981.

Boonsri, Poramest. "Discovery in Demand as Cross-Section Data Plus Unified Economic Model." I*nternational Conference on Mathematical and Statistical Physics, Computational Science, Education, and Communication (ICMSCE 2022)* 12616 (2010): 20.

_____. "Discovery in Reasons Economics is not an Exact Science Plus New Price Model." *International Conference on Mathematical and Statistical Physics, Computational Science, Education, and Communication (ICMSCE 2022)* 12616 (2023).

_____. "Discovery in Time as a Vector Plus Polarity of Gravitational Force." Palarch'S J*ournal of Archaeology of Egypt/Egyptology* 17 (2020): 957-966.

_____. "The Time Equation Explaining Equations in Physics and Economics." I*nternational Journal of Engineering and Advanced Technology (IJEAT)* 8 (2019): 165-168.

Brown, Clair. B*uddhist Economics: An Enlightened Approach to the Dismal Science*. New York: Bloomsbury Press, 2017.

Davies, Paul. *About time: Einstein's Unfinished Revolution*. Singapore: Simon & Schuster, 1995.

Drucker, Peter. *Toward the Next Economics, and Other Essays.* New York: Harper & Row, 1981.

Encyclopedia of Mathematics. *Space-time*. Accessed January 16, 2023. https://www.encyclopediaofmath.org/index.php/Space-time.

Fullbrook, Edward. *A Guide to What's Wrong with Economics*. London: Anthem Press, 2004.

Hawking, Stephen. *A Brief History of Time: From the Big Bang to Black Holes.* New York: Bantam Books, 1998.

Heilbroner, Robert and William Milberg. T*he Crisis of Vision in Modern Economic Thought*. Cambridge: Cambridge University Press, 1996.

Kaku, Michio and Jennifer Trainer. Beyond Einstein: *The Cosmic Quest for Theory of the Universe*. New York: Bantam Books, 1987.

Krugman, Paul. *How did economists get it so wrong?.* Accessed December 16, 2021. http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html.

Kuttner, Robert. *The Poverty of Economics.* Accessed January 16, 2023. https://cdn.theatlantic.com/media/archives/1985/02/255-2/132614438.pdf.

Mahidol University. T*he Law of Cause and Effect The Law of Karma*. Accessed October 25, 2022. https://www.mahidol.ac.th/budsir/Part4_5.htm.

Nelson, Julie. "Buddhist Economics: An Enlightened Approach to the Dismal Science". *Feminist Economics* 24 (2018): 184-190.

Opie, Redvers. "Marshall's Time Analysis." *The Economic Journal* 41 (2022): 199-215.

Phrabrahmapundit (Prayoon Dhammcitto. *Religions and Sustainable Development Goals (SDGs)*. Accessed June 22, 2022, https://www.watprayoon.com/files/book/2562-03-18-SDG.pdf.

Phrarajavaramuni (Phrayudh Payutto). *Aññhaïgika-magga: the Noble Eightfold Path; factors or constituents of the Path,* Accessed August 2, 2021, https://www.watnyanaves.net/uploads/File/books/pdf/dictionary_of_buddhism_pra-muan-dhaama.pdf.

Phrarajavaramuni (Phrayudh Payutto). *Buddhist Economics*. Accessed August 2, 2021. https://www.watnyanaves.net/uploads/File/books/pdf/buddhist_economics.pdf.

Prayukvong, Wanna, Isao Takagi, and James Hoopes. "Clair Brown, Buddhist Economics: *An Enlightened Approach to the Dismal Science. Social Choice And Welfare* 49 (2017): 411-412.

Puntasen, Apichai. "Buddhist economics." T*he Chulalongkorn Journal of Buddhist Studies*. 12 (2008): 1-61.

Schumacher, Ernst F. *Small is Beautiful: Economics as If People Mattered*. New York: Perennial Library/Harper & Row, Publishers, 1975.

Skilton, Andrew. "Meditation and its Subjects: Tracing Kammatthana from the Early Canon to the Boran Kammathan Traditions of Southeast Asia." *Contemporary Buddhism* 20 (2019): 36 -72.

The Editors of Encyclopaedia Britannica. *Demand Curve*. Accessed January 16, 2023. https://www.britannica.com/topic/demand-curve.

Veblen, Thorstein. "Why is Economics not an Evolutionary Science? ." *The Quarterly Journal of Economics* 12 (1894): 373.