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Beyond Traditional Market Thinking: What is the Structure of the Perfect Green market?

By

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Abstract

We are now living in the world of green markets, yet we seem not to be able to see that the paradigm shift from the traditional market to green markets has created a green market knowledge gap. And it is this knowledge gap that apparently is limiting the ability of governments(developed and underdeveloped) and institutions(local and global) alike to set up green markets and implement green market based sustainable development programs such as low carbon based development. For example, we know what the structure of the traditional perfect market is; and the paradigm shift raises the question what is the structure then of the perfect green market if the perfect traditional market idea was left behind? One of the goals of this paper is to provide an answer to this question.

Key concepts

Traditional market, perfect market, green markets, perfect green market, paradigm shift, green market knowledge gap, environmental externality, green margin, traditional market price, green price, invisible hand, economic man, green invisible hand, green economic man, growth, green growth.

Introduction

a) The traditional market

When only the economy(B) matters we have a traditional market(T), which can be expressed as follows:

T = aBc

The expression above says that in the traditional market(T), society(a) and environment(c) exist to meet the needs of the traditional market(T) as both social issues(a) and environmental issues(c) are considered externalities or factors exogenous to the traditional market model(T) and only the economy(B) is the dominant component here.

In other words, the traditional market(T) is a deep paradigm based model, which works under independent preference structures. Here microeconomics theory and macroeconomic theory and growth theory are the proper tools to deal with traditional market issues. And therefore, this is the world of the economic man, the invisible hand, and economic growth. Muñoz (2015) indicated that the traditional market model went unchallenged since 1776 when Adam Smith proposed it in "The Wealth of Nations" to 1987 when the Bruntland Commission published "Our Common Future" and criticized it. So the traditional market period went from 1776 to 1987.

b) Beyond traditional market thinking

In 1987 the Bruntland Commission highlighted the need to internalize social and environmental issues in our development models(WCED 1987) and in 2012 Rio +20 the need to internalize environmental issues was formally undertaken to transition to green markets, green growth, and green sustainable development approaches(UNCSD 2012a; 2012b).

Now the view that development is more than just economic growth(Soubbotina 2004) is more wide spread and moving fast towards real change: Transitions not just to low carbon development(OECD 2015), but zero carbon development(Fay et al 2015) are being now promoted and some real actions taken(GOC 2016). Muñoz(2016a) highlighted that the fixing process started by the Bruntland Commission in 1987 culminated with the shift to green markets in 2012, even though it was not the only option available then. So the transition period from the traditional market to green markets went from 1987 to 2012.

c) The green market

Today we live in a world ruled by the partnership between the economy and the environment, a view that requires transformation of the way we live to properly support the 2030 sustainable development program(UN 2015a), supported by global institutions like FAO(UNCSD 2011) formalized in the 2015 Paris Agreement(UN 2015b) signed April 22, 2016(UN 2016) And when only the economy(B) and environment(C) matters we have a green market(GM), which can be expressed as follows:

GM = aBC

The expression above says that in the green market(GM), society(a) exists to meet the needs of the green market(GM) as social issues(a) are considered externalities or factors exogenous to the green market model and only the economy(B) and the environment(C) are dominant components. In other words, green markets are partial partnership based models that work under partial codependent choice structure.

Here green microeconomics theory, green macroeconomic theory, and green growth theory are the proper tools to deal with green market issues. And therefore, this is the world of the green economic man, the green invisible hand, and green economic growth. It has been recently stressed that paradigms shift from less sustainable positions to more sustainable ones, pointing in the end towards sustainability(Muñoz 2016b) such as the case of the 2012 shift to green markets. Hence, from 2012 to now 2016 we have been living under the green market model.

d) The green market knowledge gap

Muñoz(2016c) pointed out that when we shift paradigms the knowledge base of the previous paradigm as well as its model structure and preference structure is left behind, including its price and tax structure. For example, the traditional market is deep paradigm market that operates under independent choice and clears at the traditional price P while the green market is a partial partnership based market operating under partial codependent choice and which clears at the green price GP which is higher than the traditional price P. Yet mainstream thinkers and decision makers appear to be trying to use micro-economic theory and macroeconomic theory right now to deal with issues of a different market, the green market. An action that violates the theory-practice consistency principle. For example, there is even a guidebook to the green economy(UNDESA 2012), yet there is neither green microeconomic nor green macroeconomics nor green trickledown effect expectation.

The green market knowledge gap after the paradigm shift stressed recently by Muñoz(2016c) is reflected by the environmental sustainability gap(ESG) affecting the traditional market model(T) as it assumes environmental externality neutrality; and by the absence of the environmental sustainability gap in green markets as now environmental issues are endogenous issues. And this green market knowledge gap can be appreciated or highlighted by contrasting the traditional market model(T) structure with the green market model(GM) structure as indicated below:

T.GM = (aBc)((aBC) = (aB)(aB)(cC) = aB(cC)

If we make ESG = cC, then we have:

T.GM = (aBc)((aBC) = (aB)(aB)(cC) = aB(ESG)

Therefore to internalize environmental externalities in the traditional market model(T) we need to close the environmental sustainability gap(ESG = cC) by making environmental issues endogenous issues; and when doing this, we are creating green markets. Hence the internalization of environmental issues to correct the traditional market changes everything about the idea of perfect traditional markets as we know it creating the green market knowledge gap; and hence the paradigm shift raises the question, what is the structure of the perfect green market then if the perfect traditional market was left behind? Among the goals of this paper is to provide an answer to this question.

Objectives

a) To highlight analytically and graphically the structure and main aspects of the perfect traditional market; b) To stress analytically and graphically the structure of the paradigm shift from the traditional market to green markets; and c) to use the above to state analytically and graphically the structure and implications of the perfect green market

Methodology

First, the terminology used in this paper is listed. Second, some operational concepts are provided. Third, the structure of the traditional perfect market is highlighted. Fourth, the structure of the paradigm shift to green markets is shared. Fifth, the structure of the perfect green market is pointed out. And finally some food for thoughts and conclusions are given.

Terminology

A = Dominant/active society	a = Dominated/passive society
B = Dominant/active economy	b = Dominated/passive economy
C = Dominant/active environment	c = Dominated/passive environment
S = Traditional supply	D = Traditional demand
GS = Green supply	GD = Green demand
P = Traditional market price	GP = Green market price
Q = Traditional market quantity	GQ = Green market quantity

EE = Environmental externality EM = Green margin

Operational concepts

a) Traditional market, *the economy only market*

b) Green market, *the environmentally friendly market*

c) Sustainability market, *the socially and environmentally friendly market*

d) Traditional market price, *general market economic only price or the price that covers the cost of production*

e) Green market price, *the price that reflects both the economic and the environmental cost of production or the price that covers the cost of environmentally* friendly *production*

f) Sustainability market price, *the price that reflects the economic, social, and the environmental cost of production or the price that covers the cost of socially and environmentally friendly production.*

h) Green market knowledge gap, *the knowledge gap created by the paradigm shift from traditional markets to green markets.*

k) Green micro-economics, *the theory of the environmentally responsible firm and consumer.*

l) Green macroeconomics, *the theory of the environmentally responsible economy.*

m) Trickledown effect, *the expectation that traditional markets and growth will sooner or later benefit the poor*

n) Green trickledown effect, *the expectation that green markets and green growth will sooner or later benefit the poor.*

o) Deep paradigm, *a fully exclusive model(e.g. the traditional market).*

p) Partial partnership paradigm, *a partially inclusive model(e.g. the green market).*

q) Full partnership paradigms, *a fully inclusive model(e.g. the sustainability market).*

r) Externalities, *factors assumed exogenous to a model*

s) Full externality assumption, *only one factor is the endogenous factor in the model, the others are exogenous factors.*

t) Partial externality assumption, *not all factors are endogenous factors at the same time in the model.*

u) No externality assumption, *all factors are endogenous factors at the same time in the model.*

v) Green margin, *to cover the extra cost of making the business environmentally friendly*.

The structure of the traditional market model

The price structure of the perfect market(T) is found at the point where traditional demand(D) clears traditional supply(S) as shown in Figure 1 below:

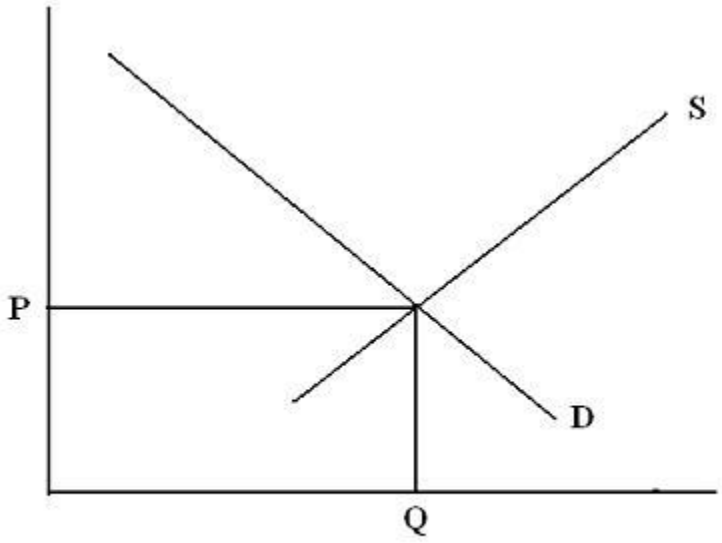

Figure 1 The traditional market and its structure

Analytically the price structure of the perfect market(T) can be stated as follows:

$T = P$

The traditional market(T) is cleared at the traditional price P, where the traditional quantity(Q) is produced and consumed. And here micro-economic theory, macro-economic theory and growth theory work as usual and the trickledown effect is expected to hold.

In summary: The traditional perfect market(T) is the market where traditional supply(S) and traditional demand(D) are cleared at the traditional price P. It is a world driven by growth and trickledown expectations.

The structure of the paradigm shift to green markets

As environmental issues are internalized in the price structure the traditional supply S shift to the left from point (i) to point (ii) creating the green supply GS and the traditional price P increases by the green margin(EM) to become the green price GP, a situation that is summarized in Figure 2 below:

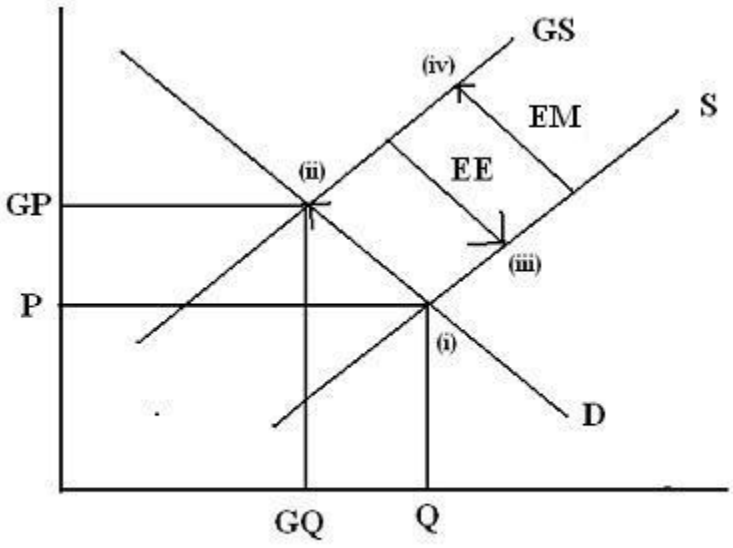

Figure 2 The structure of the paradigm shift to green markets

Analytically the price structure of the green market(GM) can be stated as follows:

GM = GP = P + EM

The green market(GM) is cleared at the green price GP, where the green quantity(GQ) is produced and consumed. And here micro-economic theory, macro-economic theory growth theory and the trickledown effect as we know them do not work as the environmental externality(EE) is internalized when we add the green margin(EM) to the traditional price P to cover the extra cost of making production environmentally friendly.

We can see from Figure 2 above the following: a) that when environmental externalities(EE) are assumed to be exogenous issues, we operate at point (i) where the perfect market(T) clears at the lower traditional price P; b) that when environmental externalities(EE) are internalized and made endogenous issues we operate at point (ii) where the green markets(GM) clears at the higher green price(GP); c) that when we are in green markets(GM) prices are higher(GP > P) and therefore, production and consumption is expected to be lower(GQ

< Q); and d) that the shift from the traditional market(T) to the green market(GM), which involves adding green margins(EM) to the traditional price P to close the environmental externality(EE) has created a green market knowledge gap that needs to be closed fast to properly support green markets.

In summary: The paradigm shift from the traditional market(T) to the green market(GM) summarized in Figure 2 above indicates that green markets(GM) are different than traditional markets(T) in price structure, consumption and production structure, model structure, preference structure, supply and demand structure, the type of growth expectations and the type of trickledown expectations.

The structure of the perfect green market

The price structure of the perfect green market(GM) is found at the point where green demand(GD) clears green supply(GS) as shown in Figure 3 below:

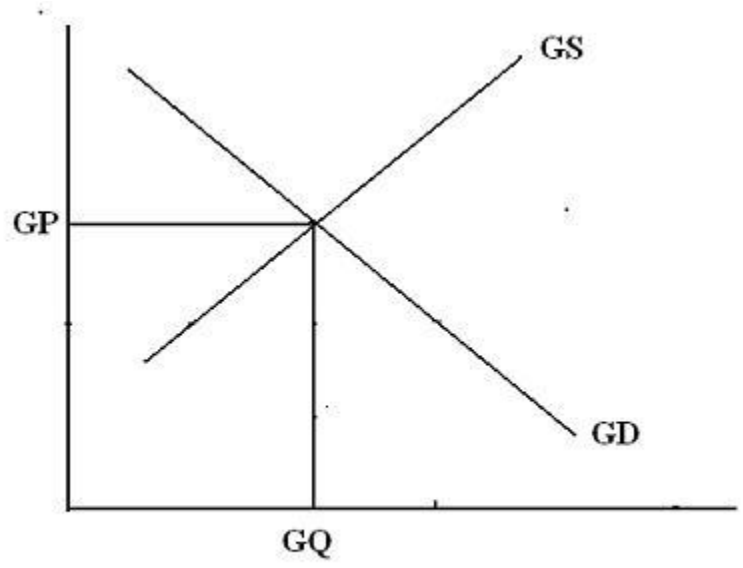

Figure 3 The structure of the perfect green market

Analytically the price structure of the perfect green market(GM) can be stated as follows:

GP = P + EM

The perfect green market(GM) is cleared at the green price GP, where the green quantity(GQ) is produced and consumed. Here green micro-economics, green macro-economics, and green growth are the appropriate tools; and a green trickled down effect is expected to hold.

In summary: The perfect green market(GM) is the market where green supply(GS) and green demand(GD) are cleared at green price GP. It is a world driven by green growth and green trickledown expectations.

Food for thoughts

a) Is the green market a green sustainable development model?. I say yes, it is the dominant sustainable development model of today, what do you think?

b) Can a low carbon based development strategy be implemented outside green markets? I say no, it would violate the theory-practice consistency principle, what do you think?

c) Can social externalities be dealt directly through green markets?. I say no, social issues are exogenous issues, what do you think?

d) What makes a market a dwarf market? I say it looks like it is, but it is not, what do you think?

Conclusions

The structure of the traditional market was highlighted in detail both graphically and analytically. The structure of the paradigm shift from the traditional market to green markets and its implications were outlined too both graphically and analytically. And the ideas above were combined to point out graphically and analytically the structure of the perfect green market, which rules current development thoughts today as we are now beyond traditional market thinking. The paradigm shift means we are living today in a world ruled by green markets.

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