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## **Beyond Green Market Thinking: What would be the Structure of the Perfect Sustainability Market?**

**By**

**Lucio Muñoz\***

\* Independent Qualitative Comparative Researcher / Consultant, Vancouver, BC, Canada Email: [munoz@interchange.ubc.ca](mailto:munoz@interchange.ubc.ca)

## **Abstract**

If the green market agenda fails in the long-term because of its social externality neutrality assumption there will be, whether we like it or not, a shift towards sustainability markets; and towards the creation of sustainability market knowledge gap. No much is written about perfect green markets or about perfect sustainability markets. One of the goals of this paper is to highlight what the structure of the perfect sustainability market is once we correct the perfect green market to reflect social concerns.

## **Key concepts**

Green markets, perfect green market, paradigm shift, sustainability market knowledge gap, social externality, social margin, green market price, sustainability market price, sustainability market, perfect sustainability market, green invisible hand, green growth, green economic man, optimal growth, sustainability man, sustainability based invisible hand.

## **Introduction**

### **a) The green market**

When only the economy(B) and the environment(C) matters we have a green market(GM), which can be expressed as follows:

$$\mathbf{GM = aBC}$$

The expression above indicates 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(GM) as only the economy(B) and the environment(C) are the dominant component here.

In other words, the green market(GM) is a partnership paradigm based model, which works under codependent preference structures. In this market 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, green invisible hand and green economic growth. The green market period started in 2012 Rio + 20(UNCSD 2012a; 2012b) when the shift from the traditional market thinking to the green market / green growth thinking formally took place(Muñoz 2016a) addressing partially the critique of the business as usual development model made by the Brundtland Commission(WCED 1987) and we have been living under green markets since then. Green markets and the green economy are now formally the center of attention of UN decision makers(UNDESA 2012) and OECD decision makers(OECD 2015a; 2015b) and it has a global outlook in terms of green jobs and investment(UNIDO and GGGI 2015).

### **b) The sustainability gaps affecting the green market**

As indicated above the stability of green markets(GM) is affected by social sustainability issues as social issues are exogenous components in the model and there are social limits to economic or green growth(Muñoz 2003). And as the green market agenda is implemented and expands the social sustainability gap affecting it should be expected to become worse and worse. Muñoz(2016b) pointed out that a) as paradigms expand or are maximized, their associated sustainability gaps are also maximized and when those sustainability gaps tend to zero the paradigm collapses and shifts towards a more sustainable position; and b) that this paradigm and sustainability gap expansion expectation fits the shift from the traditional market to green market when the environmental sustainability gap was tending to zero the environmental corrections needed to be made were made; and c) that a paradigm and sustainability gap expansion of similar nature than the one that led to green markets will lead to the shift from green markets to sustainability markets when the social sustainability gap tends to zero stressing the need to correct the green market to reflect social issues.

In other words since the structure of green markets(GM) includes only two components, economy(B) and environment(C) we cannot deal with social issues and social inclusion directly, it must be done indirectly perhaps through a green trickledown effect as they are externalities.

The desirability of making green markets and green growth socially inclusive is widespread(WB 2012; OECD 2012; UNDESA 2016; UNIDO 2016).

### **c) The expected paradigm shift from green markets to sustainability markets**

It seems that the evolution of development paradigms is leading towards sustainability(Muñoz 2013) albeit step by step(Muñoz 2015), but backwards in terms of economic thinking(Muñoz 2012). And when the society(A), the economy(B) and environment(C) matters we have a sustainability market(S), which can be expressed as follows:

$$\mathbf{S = ABC}$$

The expression above says that in the sustainability market world(S) there are no externalities or exogenous factors, the society(A), the economy(B) and the environment(C) all are dominant components at the same time. In other words, sustainability markets(S) are full partnership based models that work under full codependent choice structure and therefore, they are fully inclusive models.. In the sustainability market sustainability based microeconomic theory, sustainability based macroeconomic theory, and optimal growth theory are the proper tools to deal with sustainability market issues. This is the world of the sustainability man, optimal growth and sustainability based invisible hand. Whether based on sustainability market ideas as above or not the relevance of having a sustainability outlook or vision for the future is now very important(IUCN 2006; Netzer 2011; WEF 2011; Giovannucci et al 2012; FE 2014; GRI 2015).

### **d) The sustainability market knowledge gap**

When there is a paradigm shift a paradigm knowledge gap is created as the knowledge base of the original paradigm is left behind(Muñoz 2016c.) so when the shift from green markets to sustainability markets takes place a sustainability market knowledge gap will be created. This is because there is social externality neutrality assumption within green market and there is no externality neutrality assumption within sustainability markets. And this sustainability market knowledge gap can be appreciated or highlighted by contrasting the green market model(GM = aBC) structure with the sustainability market model(S = ABC) structure as indicated below:

$$\mathbf{GM.S = (aBC)((ABC) = (aA)(BB)(CC) = (Aa)(BC)}$$

If we make SSG = aA, then we have:

$$\mathbf{GM.S = (aBC)((ABC) = (aA)(BB)(CC) = (SSG)(BC)}$$

Therefore to internalize social externalities in the green market model(GM) we need to close the social sustainability gap(SSG = aA) by making social issues endogenous issues; and when doing this, we are creating sustainability markets(S). When paradigms shift the old

paradigm if it wants to evolve needs to catch up; and this catching up leads to the growth of knowledge associated with paradigm shifts(Kuhn 1970). Hence the internalization of social issues to correct the green market(GM) changes everything about the idea of green markets/perfect green markets creating the sustainability market knowledge gap; and hence a paradigm shift of this nature raises the question, what would be the structure of the sustainability market then if the green market is 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 green market; b) To stress analytically and graphically the structure of the paradigm shift from the green market to sustainability markets; and c) to use the above to state analytically and graphically the structure and implications of the perfect sustainability market.

## Methodology

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

## Terminology

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A = Dominant/active society

a = Dominated/passive society

B = Dominant/active economy

b = Dominated/passive economy

C = Dominant/active environment

c = Dominated/passive environment

SS = Sustainability supply

SD = Sustainability demand

GS = Green supply

GD = Green demand

SP = Sustainability market price

GP = Green market price

SQ = Sustainability market quantity

GQ = Green market quantity

SE = Social externality

SM = Social margin

SMM = Sustainability market

SSG = Social sustainability gap

EE = Environmental externality

EM = Green margin

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## **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) Trickle-down effect**, *the expectation that traditional markets and growth will sooner or later benefit the poor*

**n) Green trickle-down 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.
- x) **Social margin**, cover the extra cost of making the green business socially friendly.

### **Merging rules**

If “A” and “B” are dominant characteristics; and “a” and “b” are their dominated or passive counter parts, the following is expected:

#### **a) Merging under dominant-dominant interactions**

Under these conditions, dominant or active state prevails as indicated:

$$(AA) \rightarrow A \quad (BB) \rightarrow B \quad (AA) (BB) = (AB)(AB) \rightarrow AB$$

#### **b) Merging under dominated-dominated interactions**

Under these conditions, the dominated or passive form prevails as shown:

$$(aa) \rightarrow a \quad (bb) \rightarrow b \quad (aa) (bb) = (ab)(ab) \rightarrow ab$$

#### **c) Merging under dominant-dominated interactions and opened sustainability gaps**

Under these conditions, if the sustainability gaps are not closed the interacting components remain the same and merging cannot take place until the gaps are closed as shown below:

$$(aA) \rightarrow aA \quad (BB) \rightarrow B \quad (aA) (BB) = (aA)B$$

### **The structure of the perfect green market model**

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 1 below:

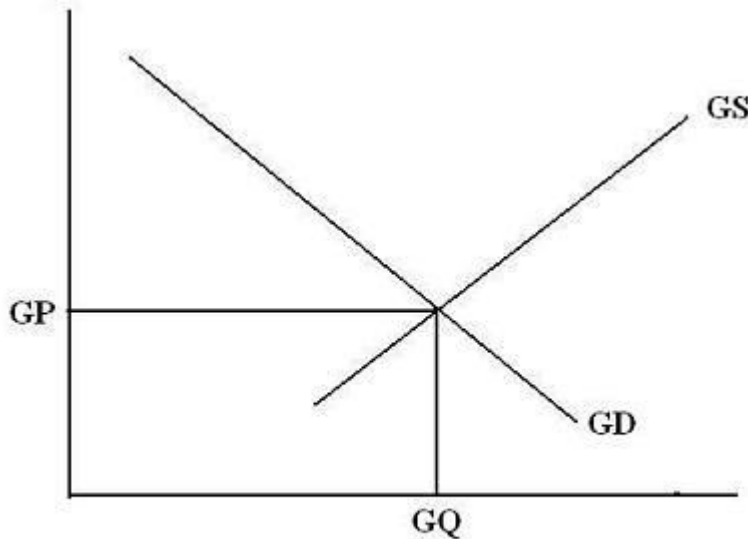


Figure 1 The structure of the perfect green market

Analytically the price structure of the perfect 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. In the perfect green market green micro-economic theory, green macro-economic theory and green growth theory are the proper tools and the green trickledown 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 the green price GP. It is a world driven by green growth and green trickledown expectations.

### The structure of the paradigm shift to sustainability markets

As social issues are internalized in the price structure the green supply GS shift to the left from point (i) to point (ii) creating the sustainability supply SS and the green price GP increases by the social margin(SM) to become the sustainability price SP, a situation that is summarized in Figure 2 below:

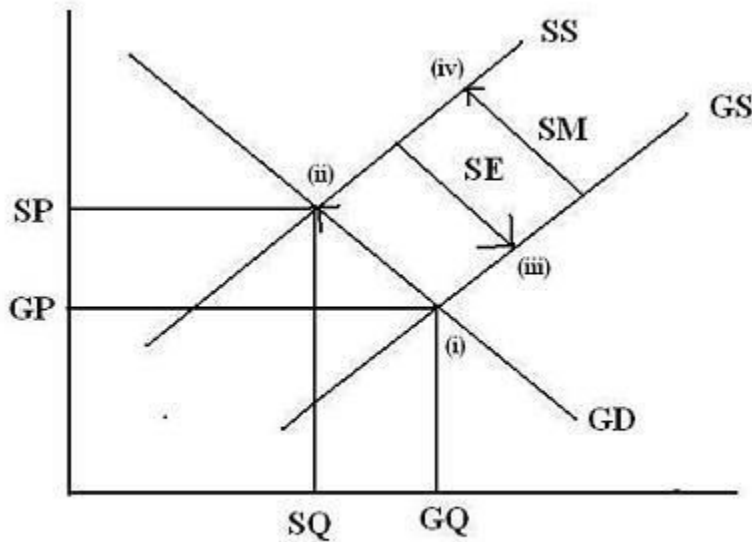


Figure 2 The structure of the paradigm shift to sustainability markets

Analytically the price structure of the sustainability market(SMM) can be stated as follows:

$$\text{SMM} = \text{SP} = \text{GP} + \text{SM}$$

The sustainability market(SMM) is cleared at the sustainability price SP, where the sustainability quantity(SQ) is produced and consumed. In the sustainability market green micro-economic theory, green macro-economic theory, green growth theory and the green trickledown do not work as the social externality(SE) is internalized when we add the social margin(SM) to the green price GP to cover the extra cost of making green production socially friendly.

We can see from Figure 2 above the following: a) that when social externalities(SE) are assumed to be exogenous issues, we operate at point (i) where the green market(GM) clears at a lower green price GP; b) that when social externalities(SE) are internalized and made endogenous issues we operate at point (ii) where the sustainability markets(SMM) clears at the higher sustainability price(SP); c) that when we are in sustainability markets(SMM) prices are higher( $\text{SP} > \text{GP}$ ) and therefore, production and consumption is expected to be lower( $\text{SQ} < \text{GQ}$ ); and d) that the shift from the green market(GM) to the sustainability market(SMM), which involves adding social margin(SM) to the green price GP to close the social externality(SE) would create a sustainability market knowledge gap that will need to be closed to properly support sustainability markets.

**In summary:** The paradigm shift from the green market(GM) to the sustainability market(SMM) summarized in Figure 2 above indicates that sustainability markets(SMM) are different than green markets(GM) 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 sustainability market

The price structure of the perfect sustainability market(SMM) is found at the point where sustainability demand(SD) clears sustainability supply(SS) as shown in Figure 3 below:

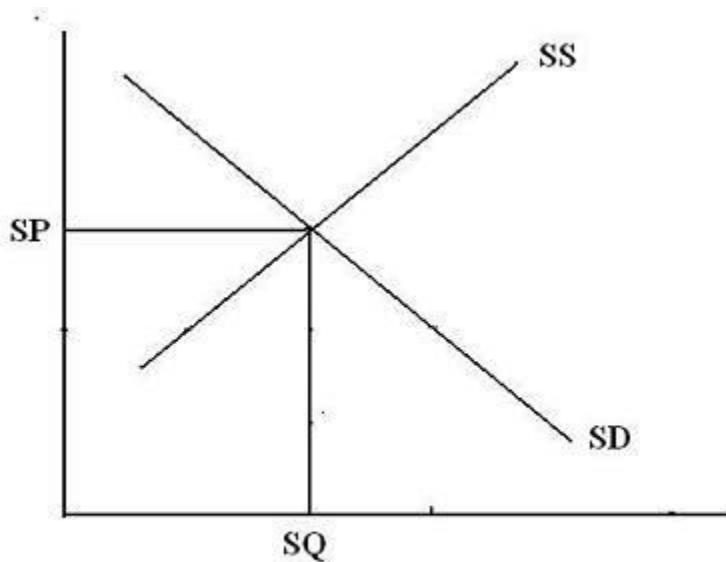


Figure 3 The structure of the perfect sustainability market

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

$$SP = GP + SM$$

The perfect sustainability market(SMM) is cleared at the sustainability price SP, where the sustainability quantity(SQ) is produced and consumed. In the sustainability market(SMM) sustainability based micro-economics, sustainability based macro-economics, and optimal growth are the appropriate tools; and a direct trickled down effect is expected to hold.

**In summary:** The perfect sustainability market(SMM) is the market where sustainability supply(SS) and sustainability demand(SD) are cleared at sustainability price SP. It is a world driven by optimal growth and direct trickledown expectations.

## Food for thoughts

a) Can a low carbon based development strategy be implemented through sustainability markets? I say yes, but it would have to be then a socially friendly low carbon strategy, what do you think?

b) Can social externalities be dealt directly through sustainability markets?. I say yes, social issues are then endogenous issues, what do you think?

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

## Conclusions

The structure of the perfect green market was highlighted in detail both graphically and analytically. The structure of the paradigm shift from green markets to sustainability 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 sustainability market, which seems to be the next paradigm shift when we are beyond green market thinking. When this paradigm shift takes place we will be living in the world of sustainability markets.

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