Sustainability thoughts 105: An overview of the externality structure of all possible markets and of the specific market illusion under which each of them operates.

By

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Abstract

We can look at markets in a general way as the place where producers and consumers exchange freely products and services generating in the process important production and consumption externalities. The way we treat those important externalities determines not just the model structure, the price structure, the choice structure, and cost structure of each market, but also the associated market illusions under which they operate as there is a direct link between market structure and market illusion. For example, the way Adam Smith treated social and environmental externalities determined the structure of his traditional market model as well as the nature of the traditional market illusion; and the way Karl Marx treated economic and environmental externalities defined the structure of the red socialism model as well as the nature of the red socialism market illusion. Among the goals of this paper are to provide an overview of all possible types of markets based on their specific treatment of externalities as well as to highlight the specific market illusion under which each of them operates.

Key words

Environmental market, traditional market, red socialism market, the socio-environmental market, the red market, the green market, sustainability market, unsustainability market, market illusion, externalities.

Introduction

a) The general structure of free markets

We can look at markets in a general way as the place where producers and consumers exchange freely products and services generating in the process important production and consumption externalities, a situation shared graphically recently(Muñoz 2020) as in Figure 1 below:

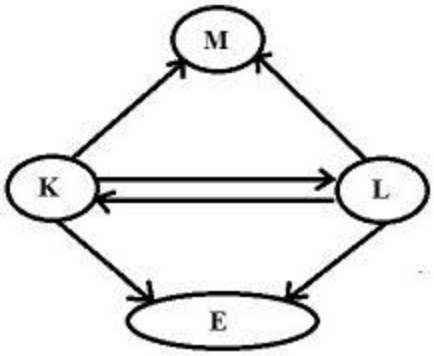

Figure 1 The general structure of free markets(M)

Figure 1 above highlights a fact, there are relevant production and consumption externalities(E) coming out the free interaction of producers(K) and consumers(L) in free markets as indicated by the continuous black arrows from K and L to E. See that the nature of the externality(E) can be social externality[E(A)] or economic externality[E(B)] or environmental externality[E(C)] or a combination of them.

b) The role of externality accountability in determining market structures

The way we treat those important externalities(?) as relevant or not relevant determines not just the model structure, the price structure, the choice structure, and cost structure of each market, but also the associated market illusions under which they operate. This situation is summarized in Figure 2 below:

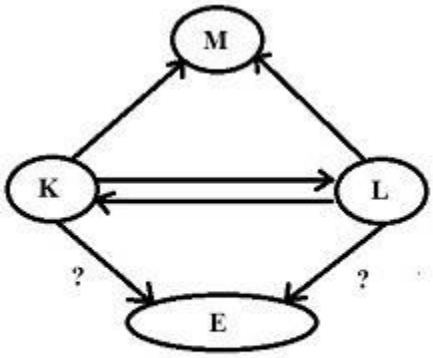

Figure 2 The type of free market responsibility depends on how those markets(M) treat the externalities they create.

Figure 2 above points out the fact that the structure of the free market M depends on the type of treatment "?" that the externalities(E) receives, as being relevant or irrelevant. Relevant externalities will be reflected in the pricing mechanism of the market M and irrelevant externalities will be externalized, and this action determines the model structure of M as well as the price structure, the choice structure, and cost structure under which M operates. For example, the way Adam Smith treated social and environmental externalities determined the structure of his traditional market model, its price structure, its choice structure, its cost structure as well as

the nature of the traditional market illusion; and the way Karl Marx treated economic and environmental externalities defined the structure of the red socialism model, its price structure, its choice structure, its cost structure as well as the nature of the red socialism market illusion.

Adam Smith assumed that social and environmental externalities were irrelevant, only economic externalities were relevant so the traditional market price reflects only economic costs[I(b) = B] and externalizes social and environmental costs[E(AC) = ac], taking the form TM = aBc. When Adam Smith published the Wealth of Nations(Smith 1776) he made the economy the dominant component of the system. Karl Marx on the other hand, took economic and environmental externalities were irrelevant, only social externalities were relevant so the red socialism market price reflects only social costs[I(a) = A] and externalizes economic and environmental costs[E(BC) = bc], taking the form KM = Abc. When Karl Marx published the communist manifesto(Marx and Engels 1848) he made society the dominant component of the system. If you compare the traditional market structure TM with that of the red socialism market structure KM you can see that they have an inverse opposite structure. It has been pointed out recently(Muñoz 2016a) that leaving relevant environmental externality out of Adam Smith's traditional model and leaving relevant economic externalities out of Karl Marx's red socialism model led to the fall of these two great simplifications of reality, the first in 2012 shift from traditional market to green market thinking(Muñoz 2016b) and the second in 1991 with the fall of the soviet bloc(Muñoz 2016c).

c) Linking market structure to market illusions

Knowing the market structure determines the related market illusion. For example, since the model structure of Adam Smith's model is TM = aBc, then the traditional market illusion is that economic development(B) can take place without having social(a) and environmental(b) production and consumption impacts. Since the model structure of Karl Marx's model is KM = Abc, then the red socialism market illusion is that social development(A) can take place without having economic(b) and environmental(c) consumption and production impacts. A market illusion can be extracted from each possible development model from its market structure. Among the goals of this paper are to provide an overview of all possible types of markets based on their specific treatment of externalities as well as to highlight the specific market illusion under which each of them operates.

Objectives

i) To transform the general free market model into specific model structures based on how each model treat relevant externalities; and ii) To use each market structure to highlight the market illusion under which that specific model operates.

Methodology

First, the terminology and operational concepts and externalization and internalization rules are listed. Second, based on its externality assumptions with respect to the economy and the environment the structure and market illusion of the red socialism market of Karl Marx are shared. Third, based on its externality assumptions with respect to society and the environment the structure and market illusion of the traditional market of Adam Smith are stressed. Fourth, based on its externality assumptions with respect to society and economy the structure and market illusion of the environmental market or deep ecology market are pointed out.

Fifth, based on its externality assumption with respect to the economy the structure and market illusion of the socio-environmental market or socio-ecology market are highlighted. Sixth, based on its externality assumption with respect to the environment the structure and market illusion of the red market or socially friendly market are given. Seventh, based on its externality assumption with respect to society the market structure and market illusion of the green market or eco-economy market are listed. Eight, based on its no externality assumption with respect to society, economy and the environment the market structure and market reality of the sustainability market is indicated. Ninth, based on its full externality assumption with respect to society, economy and the environment the market structure and market illusion of the unsustainability market is suggested. Finally, some food for thoughts and relevant conclusions are provided.

Terminology

A = active social system a = passive social system

B = active economic system b = passive economic system

C = active environmental system c = passive environmental system

TM = traditional market GM = green market

TK = traditional producers/supply TL = traditional consumers/demand

GK = green producers/supply GL = green consumers/demand

RM = red market ENM = environmental market

RK = red producers/supply RL = red consumers/demand

ENK = environmental producers/supply ENL = environmental consumers/demand

SENM = socio-environmental market SM = sustainability market

SENK = socio-environ producers/supply SENL = socio-environ consumers/demand

SK = sustainability producers/supply SL = sustainability consumers/demand

UM = unsustainability market KM = red socialism market

KK = red socialism producers/supply KL = red socialism consumers/demand

UK = unsustainability producers/supply UL = unsustainability consumers/demand

E(T) = externalization of T I(t) = internalization of t

E(AC) = externalization of A and C I(ac) = internalization of a and c

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Operational concepts and externalization and internalization rules

i) Operational concepts

1) Red socialism market, *the society only market.*

2) Red socialism market price, *the price that reflects only the social cost of production.*

3) The traditional market, *the economy only market.*

4) The traditional market price, the *general market economic only price or the price that covers the cost of production at profit(TMP = ECM + i = P) or zero profit(TMP = ECM = P).*

5) The environmental market, *the environment only market.*

6) The environmental market price, *the price that reflects only the environmental cost of production.*

7) The socio-environmental market, *the society and environment only market.*

8) The socio-environmental market price, *the price that reflects the social and environmental costs of production.*

9) The red market, *the society and economy only market.*

10) The red market price, *the price that reflects the social and economic costs of production.*

11) The green market, *the economy and environment only market.*

12) The 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.*

13) The sustainability market, *the society, economy and environment market.*

14) The sustainability market price, *the price that reflects the social, economic, and environmental costs of production.*

15) The economic margin, *to cover the economic cost of production.*

16) The environmental margin, *to cover the extra cost of making business environmentally friendly.*

17) The social margin, *to cover the extra cost of making business socially friendly.*

18) Full costing, *all costs are reflected in the pricing mechanism of the market.*

19) Partial costing, *not all costs are reflected in the pricing mechanism of the market.*

20) No costing, *all costs are not reflected in the pricing mechanism of the market.*

21) Full responsibility, *when a market uses full costing.*

22) Partial responsibility, *when a market uses partial costing.*

23) Full irresponsibility, *when a market uses no costing.*

ii) Externalization rules

Let's assume we have a market with two relevant components, society(A) and environment(C), where A = active component, a = passive component, C = active component, and c = passive component, then the externalization rules(E) work as follows:

1) E(A) = a **---→** *relevant social costs(A) are assumed irrelevant*

2) E(C) = c **---→** *relevant environmental costs(C) are assumed irrelevant*

3) E(AC) = ac **---→** *relevant social costs and economic costs(AC) are assumed irrelevant*

iii) Internalization rules

Let's assume we have a market with two relevant components, society(A) and environment(C), where A = active component, a = passive component, C = active component, and c = passive component, then the internalization rules(I) work as follows:

4) I(a) = A **----→** *irrelevant social costs(a) are now relevant*

5) I(c) = C **----→** *irrelevant environmental costs(c) are now relevant*

6) I(ac) = AC **----→** *irrelevant social costs and economic costs(ac) are now relevant*

iv) Model structure and externalization rules

Let's assume we have the following three market structures M1 = ac, M2 = Ac and M3 = AC, then the following holds true:

7) M1 = ac = E(AC) = *a fully irresponsible market as all costs are externalized*

8) M2 = Ac = [I(a)][E(C)] = *a partially responsible market as social cost is internalized*

9) M3 = AC = [I(a)][I(c)] = *a fully responsible market as all costs are internalized.*

v) Reversing externalization rules

Let's assume we have a market with two relevant components, society(A) and environment(C), where A = active component, a = passive component, C = active component,

and c = passive component, then the process of reversing externalization-internalization rules works as follows:

The case of internalizing the externality: if E(AC) = ac, the following holds true:

10) I[E(AC)] = I(ac) = AC, internalization-externalization forces cancel each other out

The case of externalizing the internality: if I(ac) = AC, the following holds true:

11) E[I(ac)] = E(AC) = ac, externalization-internalization forces cancel each other out

The case of when only the social externality matters

If we assume that only society(A) matters as Karl Marx did in 1848, that means that relevant economic and environmental externalities[E(BC) = bc] are externalized, and the red socialism market(KM) becomes a society(A) first model with structure KM = Abc, which can be indicated graphically as shown in Figure 3 below:

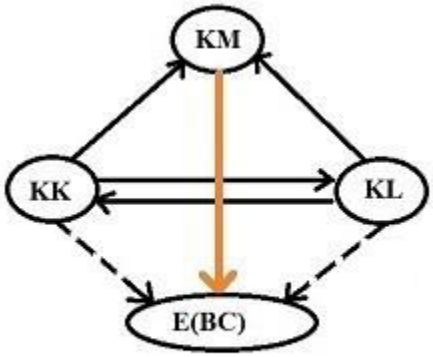

Figure 3 The structure of the red socialist market(KM)

Figure 3 above simply says that economic and environmental externalities[E(BC)] are irrelevant, only the social cost of production matter and it is reflected in the pricing mechanism of the red socialism market(KM). Hence, Figure 3 above summarizes the red socialism market illusion that social development(A) can take place without having relevant economic and environmental impacts in production and consumption as indicated by the broken black arrows from KK and KL to E(BC). In other words, the economy and the environment are there to be used as needed to achieve society only goals. The red socialism market is a society only market.

The case when only the economic externality matters

If we assume that only the economy(B) matters as Adam Smith did in 1776 did, that means that relevant social and environmental externalities are externalized[E(AC) = ac)], and the

traditional market(TM) becomes an economy(B) first model with structure TM = aBc, which can be stated graphically as shown in Figure 4 below:

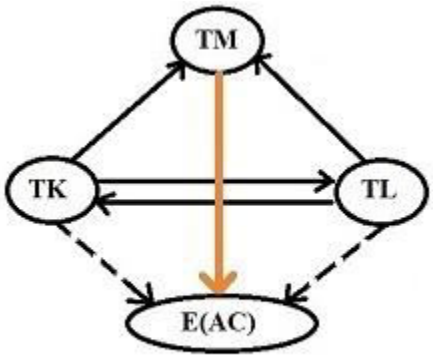

Figure 4 The structure of the traditional market(TM)

Figure 4 above simply is telling us that social and environmental externalities[E(AC)] are irrelevant, only the economic cost of production matter and it is reflected in the pricing mechanism of the traditional market(TM). Hence, Figure 4 above reflects the traditional market illusion that economic development(B) can take place without having relevant social and environmental impacts in production and consumption as indicated by the broken black arrows from TK and TL to E(AC). In other words, society and the environment are there to be used as needed to achieve economy only goals. The traditional market is an economy only market.

The case of when only the environmental externality matters

If we assume that only the environment(C) matters, that means that relevant social and economic externalities[E(AB) = ab] are externalized, and the environmental market (ENM) becomes an environment(C) first model with structure ENM = abC, which can be stressed graphically as shown in Figure 5 below:

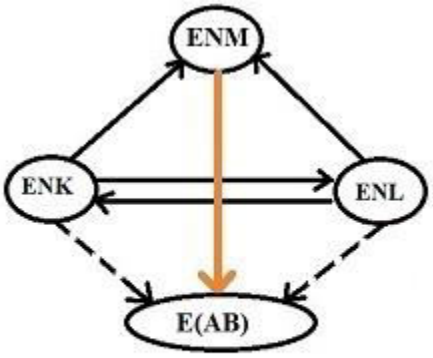

Figure 5 The structure of the environment only market(ENM) or deep ecology market(DEM)

Figure 5 above simply is shows us that social and economic externalities[E(AB)] are irrelevant, only the environmental cost of production matters and it is reflected in the pricing mechanism of the environmental market(ENM). Hence, Figure 5 above displays the environmental market illusion that environmental development(C) can take place without having relevant social and economic impacts in production and consumption as indicated by the broken black arrows from ENK and ENL to E(AB). In other words, society and the economy are there to be used as needed to achieve environment only goals. The environmental market is an environment only market.

The case of when both social and environmental externalities matter

If we assume that only society and environment(AC) matter, that means that relevant economic externalities[E(B) = b] are externalized, and the socio-environment market(SENM) becomes a society and environment(AC) first model with structure SENM = AbC, which can be described graphically as shown in Figure 6 below:

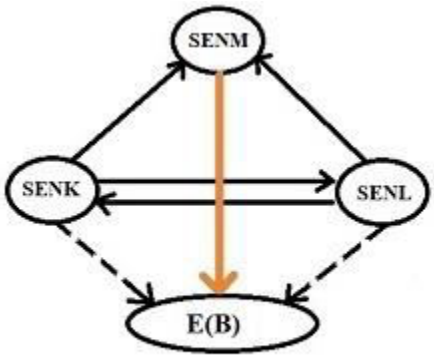

Figure 6 The socio-environmental market(SENM)

Figure 6 above indicates economic externalities[E(B)] are irrelevant, only the social and environmental costs of production matter and only they are reflected in the pricing mechanism of the socio-environmental market(SENM). Hence, Figure 6 above shows the socio-environmental market illusion that socio-environmental development(AC) can take place without having relevant economic impacts in production and consumption as indicated by the broken black arrows from SENK and SENL to E(B). In other words, the economy is there to be used as needed to achieve society and environment only goals. The socio-environmental market is a society and environment only market.

The case of when both social and economic externalities matter

If we assume that only society and economy(AB) matter, that means that relevant environmental externalities[E(C) = c] are externalized, and the red market or socially friendly

market(RM) becomes a society and economy(AB) first model with structure RM = ABc, which can be expressed graphically as shown in Figure 7 below:

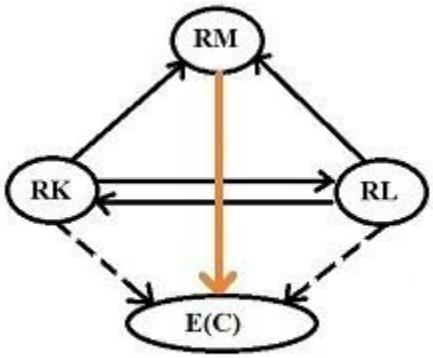

Figure 7 The structure of the red market(RM) or socio-economic market(SEM)

Figure 7 above says that environmental externalities[E(C)] are irrelevant, only the social and economic costs of production matter and only they are reflected in the pricing mechanism of the red market(RM). Hence, Figure 7 above points out the red market or socio-economic market illusion that socio-economic development(AB) can take place without having relevant environmental impacts in production and consumption as indicated by the broken black arrows from RK and RL to E(C). In other words, the environment is there to be used as needed to achieve society and economy only goals. The red market is a society and economy only market.

The case of when both economic and environmental externalities matter

If we assume that only economy and environment(BC) matter as 2012 the United Nations Conference on Sustainable Development Rio + 20 did(UNCSD 2012a; UNCSD2012b), that means that relevant social externalities[E(A) = a] are externalized, and the green market or environmentally friendly market(GM) becomes an economy and environment(BC) first model with structure GM = aBC, which can be stated graphically as shown in Figure 8 below:

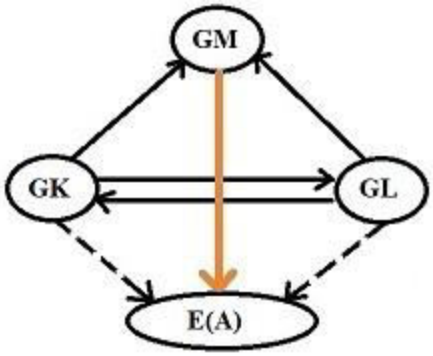

Figure 8 The structure of the green market(GM) or eco-economic market(EECM)

Figure 8 above states that social externalities[E(A)] are irrelevant, only the economic and environmental costs of production matter and only they are reflected in the pricing mechanism of the green market(GM). Hence, Figure 8 above highlights the green market or eco-economic market illusion that eco-economic development(BC) can take place without having relevant social impacts in production and consumption as indicated by the broken black arrows from GK and GL to E(A). In other words, the society is there to be used as needed to achieve environment and economy only goals. The green market is an economy and environment only market.

The case of when all social, economic, and environmental externalities matter

If we assume that society and economy and environment(ABC) all matter, that means that no relevant externalities[E(ABC) = 0] are externalized, and the sustainability market or society, economy and environment friendly market(SM) becomes a society, economy and environment(ABC) first model with structure SM = ABC, which can be pointed out graphically as shown in Figure 9 below:

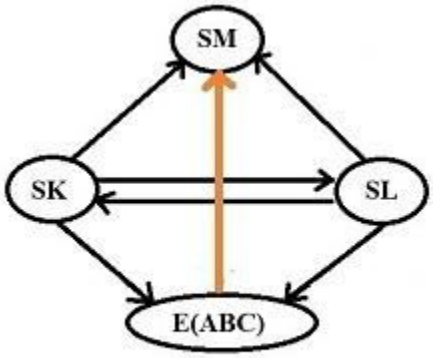

Figure 9 The structure of the sustainability market(SM)

Figure 9 above indicates that all externalities[E(ABC) = 0] are relevant, all the social, economic and environmental costs of production matter and they are all reflected in the pricing mechanism of the sustainability market(SM). Hence, Figure 9 above expresses the sustainability market reality that there are relevant social, economic, and environmental[E(ABC)] impacts in production and consumption as indicated by the continuous black arrows from SK and SL to E(ABC), but they are internalized in the pricing mechanism of the sustainability market as indicated by the continuous brown arrow going from E(ABC) to SM leading to the world of society, economy and environment friendly development(ABC). In other words, all components of the system, society, economy, and environment are important at the same time; and therefore their externalities are all relevant. The sustainability market is a one for all market.

The case of when no social, economic, and environmental externalities matter

If we assume that society and economy and environment(abc) all do not matter, that means that all relevant externalities[E(ABC) = abc] are externalized, and the unsustainability market or society, economy, and environment unfriendly market(UM) becomes a society, economy and environment(abc) last model with structure UM = abc, which can be pointed out graphically as shown in Figure 10 below:

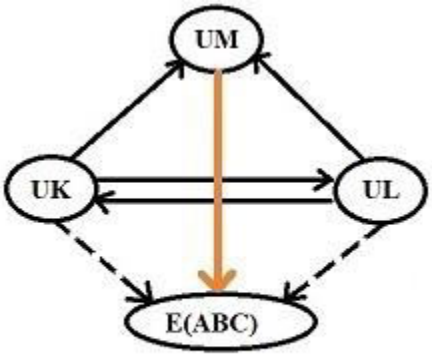

Figure 10 The structure of the fully unsustainable market(UM)

Figure 10 above indicates that all externalities[E(ABC) = abc] are irrelevant, all the social, economic and environmental costs of production do not matter and they are all not reflected in the pricing mechanism of the unsustainability market(UM). Hence, Figure 10 above indicates the unsustainability market illusion that there are no relevant social, economic, and environmental[E(ABC) = abc] impacts in production and consumption as indicated by the broken black arrows from UK and UL to E(ABC), and therefore they are externalized and not accounted for in pricing mechanism of the unsustainability market as indicated by the continuous brown arrow going from UM to E(ABC) leading to the world of society, economy and environment unfriendly development(abc). In other words, all components of the system, society, economy, and environment are not important at the same time; and therefore their externalities are all irrelevant. The unsustainability market is a free for all market.

Summary: *Each market structure comes out from the way externalities are treated in that market. Relevant externalities are reflected in the pricing mechanism of that market. Irrelevant externalities are externalized and hence, they are not reflected in the pricing mechanism of that market.*

Implications: *The level of responsibility of each market depends on the number of relevant externalities that are taken as relevant. Markets where only one externality is relevant have unimodal partial responsibility such as the red socialism market, the traditional market and the environmental market. Markets where two externalities are relevant have bimodal partial responsibility such as the socio-environmental market, the red market and the green market. Markets where all externalities are relevant are fully responsible models such as sustainability markets. Markets where all externalities are irrelevant are fully irresponsible models such as the fully irresponsible markets.*

Food for thoughts

a) Can bimodal market responsibility come out of a clash between different markets with unimodal partial responsibility? I think yes, what do you think? b) Can full market responsibility come out of a clash between different markets with bimodal partial responsibility? I think yes, what do you think? and c) Is the fully irresponsible market consistent with traditional perfect market competition theory? I think yes, what do you think?

Conclusions

1) It was pointed out analytically and graphically that any market structure comes out of taking relevant externalities as relevant or irrelevant; 2) It was highlighted that any non-sustainability market has a specific market illusion associated with it and under which it operates and which can be extracted from its market structure; and 3) It was stressed that only the sustainability market has a reality based on full costing and therefore, full responsibility.

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