Sustainability thoughts 110: Linking perfect red market theory to the circular red economy

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Abstract

Perfect red market theory stipulates that when we correct the traditional market pricing mechanism of the traditional market to reflect social externalities we shift it to a red market model as we are then closing the social sustainability gap, creating in the process a model with a closed circular red economy. As the traditional market price shifts to the red market price we shift from a model with broken circular economy under binding social externalities to a model with unbroken circular economy. In other words, the price shift goes one to one with changes in circular economy structures. Hence, there is a need to understand the link between the nature of market prices and the nature of related circular economies when social externality accountings becomes binding. For example, what is the nature of the circular traditional economy under no social externality neutrality assumption? What is nature of the circular red market economy under environmental externality neutrality assumption? What is different between those two circular economies in terms of social sustainability gaps? Among the goals of this paper is to give answers to these questions.

Key words

Perfect traditional market, perfect red market, circular traditional economy, circular red economy, externalities, social externality, paradigm shift, market price shift, social margin, traditional market price, red market price, sustainability gap.

Introduction

A) An economy under social externality neutrality assumption

In a world with two components, the economy(B) and society(A), it can be said that the economic world with social externality assumptions is summarized by the traditional market(TM) as indicated in Figure 1 below since in this market only economic goals(B) matter:

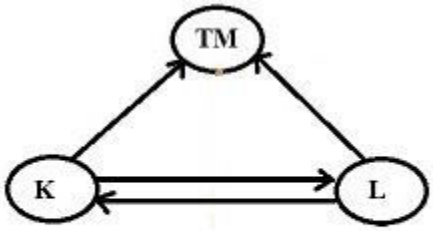

Figure 1 The structure of the traditional market under social externality neutrality assumptions

Figure 1 above tells us that in the traditional market(TM) traditional production(K) and traditional consumption(L) take place under the social externality neutrality assumption so no relevant social externalities are created during production and consumption process leading to an unbroken circular traditional market economy between traditional producers(K) and traditional consumers(L) by assumption. In other words, in the traditional market model social concerns(a) are not important.

i) The model structure

Since the economy(B) is the only relevant component in the traditional market(TM) depicted in Figure 1 above its model structure can be represented as follows:

1) TM = aB

Expression 1) above tells us that society(a) is a passive or irrelevant component in this model, and therefore, in this model the society exists only to support economic goals.

ii) The price that clears the traditional market

Since only economic goals matter, then only economics costs at a profit matter and need to be reflected in the traditional pricing mechanism(TMP = P) to clear the market in this traditional market(TM) depicted in Figure 1 above, which can be stated as follows:

2) TMP = ECM + i = P

Expression 2 above tells us that the traditional market price(TMP = P) is made up by economic costs plus profits.

iii) The traditional market price-social externality inconsistency

A glance at Figure 1 above indicates that in a world where social externalities matter and need to be incorporated in the pricing mechanism of the traditional market, the traditional market price-social externality inconsistency becomes clear; and this inconsistency results in a broken circular traditional economy under no social externality neutrality assumption, a situation that needs to be corrected by bringing in social responsibility in the traditional market. In 2012 the

United Nations Commission on Sustainable Development Rio + 20(UNCSD 2012a; UNCSD 2012b) moved to address the traditional market price-environmental externality inconsistency only by calling for a move towards a world under green economies, leaving out of consideration then the possibility of shifting to a world under socially friendly markets or the possibility of shifting to a world under socially and environmentally friendly markets(Muñoz 2016a)

B) An economy without social externality neutrality assumption

In a world with two components, the economy(B) and society(A), it can be said that the economic world with no social externality neutrality assumptions is summarized by the red market(RM) as shown in Figure 2 below since in this market both economic goals(B) and social goals(A) matter:

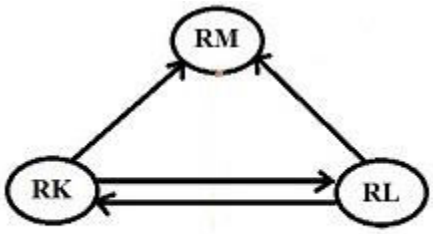

Figure 2 The structure of the red economy(RM) under environmental externality neutrality assumptions

Figure 2 above says that in the red market(RM) red production(RK) and red consumption(RL) take place under no social externality neutrality assumption so that all relevant social externalities that are created during production and consumption process are reflected in the pricing mechanism of the red market(RMP = RP) leading to a unbroken circular red market economy between red producers(RK) and red consumers(RL) by assumption correction. In other words, in the red market model social concerns(A) are important.

i) The model structure

Since the economy(B) and the society(A) are relevant components in the red market(RM) depicted in Figure 2 above its model structure can be represented as follows:

3) RM = AB

Expression 3) above says that both the economy(B) and the society(A) are active or relevant components in this model, and therefore, in this model both the economy(B) and the society(A) exist only to support red market goals through win-win coexistence and choice.

ii) The price that clears the red market

Since here both economic(B) and society(A) goals matter, then both economics costs(ECM) and social costs(SM) at a profit matter and need to be reflected in the red pricing

mechanism(RMP = RP) to clear the market in this red market(RM) depicted in Figure 2 above, which can be stated as follows:

4) RMP = ECM + SM + i = RP

Expression 4 above indicates that the red market price(RMP = RP) is made up by the sum of all costs plus profits.

c) Linking the traditional market price shift with the red market price

If we look at both, the traditional market price and at the red market price we can see that the traditional market price is a lower market price, which can be indicated as follows:

5) TMP = P = ECM + i < RMP = RP = ECM + SM + i

Notice that to correct that inequality to make it equal we only need to add the social margin(SM) to the traditional market, which leads to the following:

6) TMP = P = ECM + i + SM = GMP = GP = ECM + SM + i

Expression 6) above let us see that when social externality accounting becomes binding the only thing we need to do is to correct the traditional market price(TMP) to account for the social margin(SM); and when we do that the model structure(TM = aB) and its traditional price structure(TMP) shifts towards the model structure of green markets(RM = AB) and its green price structure(GMP). The shift from traditional market pricing to red market pricing means that the nature of the circular economies they drive also shift or change. In other words, the price shift goes one to one with changes in circular economy structures. Perfect red market theory stipulates that when we correct the traditional market pricing mechanism of the traditional market to reflect social externalities we shift it to a red market model as we are then closing the social sustainability gap, creating in the process a model with an unbroken circular red economy. How a perfect red market would look like(Muñoz 2016b) and how it should be expected to behave under perfect red market competition(Muñoz 2019) as well as what the nature of perfect red market illusion is(Muñoz 2020) have been pointed out very recently.

Hence, there is a need to understand the link between the nature of market prices and the nature of related circular economies when social externality accountings becomes binding. For example, what is the nature of the circular traditional economy under no social externality neutrality assumption? What is nature of the circular red market economy under environmental externality neutrality assumption? What is different between those two circular economies in terms of social sustainability gaps? Among the goals of this paper is to give answers to these questions.

Goals of this paper

i) To point out the structure of the circular traditional economy when under no social externality neutrality assumption; ii) To highlight the structure of circular red market economy when under environmental externality neutrality assumption; and iii) To stress difference between those two circular economies in terms of social sustainability gaps.

Methodology

i) the terminology and operation concepts used in this paper are introduced; ii) the structure of the traditional market under no social externality assumptions is shared; iii) the structure of the circular traditional market economy under no social externality neutrality assumption is shown; iv) the structure of the circular red market economy under environmental externality neutrality assumption is highlighted; v) the structure of these two circular economies are compared to highlight that one has no social sustainability gap; and vi) some food for thoughts and 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	RM = red market
K = traditional producers/supply	L = traditional consumers/demand
RK = red producers/supply	RL = red consumers/demand
SEM = social externality management	M_i = market type i
E(T) = externalization of T	I(t) = internalization of t
E(AC) = externalization of A and C	I(ac) = internalization of a and c
TMP = traditional market price	RMP = red market price
SSG = social sustainability gap	SEG = social externality gap

Operational concepts and externalization and internalization rules

i) Operational concepts

1) Traditional market, *the economy only market*

2) Red market, *the socially friendly market*

3)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).*

4) Red market price, *the price that reflects both the economic and social cost of production or the price that covers the costs of socially friendly production.*

5) Cost externalization, *the leaving out of the pricing mechanism of the market relevant costs associated with production.*

6) Social cost externalization, *the leaving out of the pricing mechanism of the market the social costs associated with production.*

7) Environmental cost externalization, *the leaving out of the pricing mechanism of the market the environmental costs associated with production.*

8) Economic cost externalization, *the leaving out of the pricing mechanism of the market the economic costs associated with production.*

9) Cost externalization assumption neutrality, *the assumption that production has minimal or no cost impact on external factors to a market model.*

10) Full costing, *the reflecting in the pricing mechanism of the market all cost associated with production; there are no market distortions.*

11) Partial costing, *not reflecting in the pricing mechanism of the market all cost associated with production; there are partial market distortions.*

12) No costing, *not reflecting in the pricing mechanism of the market any costs associated with production; there is full market distortion.*

13) Full inclusion, *all factors are endogenous to the model, there are no exclusions.*

14) Partial inclusion, *some factors are exogenous to the model, there are some exclusions.*

15) Fully independent development choices, *when we have individual development choices*

unrelated to each other or pure choices such as society only(A), economy only(B), and environment only(C). In this world only fully independent development choices exist so the set = {A, B, C}. This is the world of the Arrow Impossibility theory and theorem.

16) Partially codependent development choices, *when we have mixed/paired development choices such as socio-economy(AB), socio-environment(AC), and eco-economy(BC). In this universe only codependent development choices exist so the set = {AB, AC, BC}. This is outside the normal world of the Arrow Impossibility theory and theorem.*

17) Fully codependent development choices, *when all development choices are mixed together such as the socio-economy-environment(ABC) model. In this paradigm only fully codependent development choices exist so the set = {ABC}. This is outside the world of the Arrow Impossibility theory and theorem.*

18) Full cost externalization, *all costs associated with production are not reflected in the pricing mechanism of the market.*

19) Partial cost externalization, *some costs associated with production are not reflected in the pricing mechanism of the market.*

20) No cost externalization, *all costs associated with production are reflected in the pricing mechanism of the market.*

21) Full cost internalization, *all costs associated with production are reflected in the pricing mechanism of the market.*

22) Partial cost internalization, *some costs associated with production are reflected in the pricing mechanism of the market.*

23) No cost internalization, *all costs associated with production are not reflected in the pricing mechanism of the market.*

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

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

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

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

28) Economic externality, *the economic costs associated with production not reflected in the pricing mechanism of the market.*

29) Social externality, *the social cost associated with production not reflected in the pricing mechanism of the market.*

30) Environmental externality, *the environmental cost associated with production not reflected in the pricing mechanism of the market.*

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

32) Social margin, *to cover the extra cost of making the business socially friendly.*

33) Economic margin*, to cover only the economic cost of production*

34) Profit, *the incentive to encourage economic activity*

35) Full cost price, *a price that reflects all costs associated with production.*

36) Some cost price, *a price that reflects only some costs associated with production.*

37) No cost price, *a price that does not reflect any cost associated with production.*

38) Circular market illusion, *the idea that production activity can take place without producing relevant externalities.*

39) Circular traditional economy illusion, *the idea that production activity can take place without producing relevant social and/or environmental externalities.*

40) Circular dwarf red economy,

the idea that market prices can be manipulated externally to generate revenue to cover the cost of dealing with the social externality they create to close the non-free dwarf red market cycle dwarf red production-dwarf red consumption-social externality.

41) Circular red economy, *the idea that market prices reflect the cost of making business socially friendly in order to cover the cost of dealing with the social externalities they create to close the free red market cycle red production-red consumption-social externality.*

42) Circular social externality management based market illusion, *the idea that you can solve a social externality problem by dealing with the consequences of that problem, not the cause.*

43) Circular red economy illusion, *the idea that red production and red consumption can take place without having environmental impacts(E(C) = 0).*

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 environmental 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 environmental 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 traditional market under no social externality neutrality assumptions

When accounting for social externalities becomes binding then the circular traditional economy(TM) depicted in Figure 1 in the introduction above breaks as in reality relevant social externalities[E(A)] are being produced and externalized, as indicated in Figure 3 below:

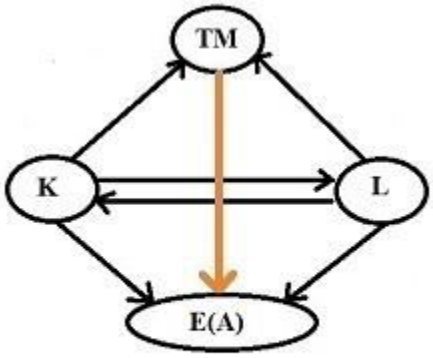

Figure 3 The structure of the traditional market(TM) under relevant social externalities[E(A)]

Figure 3 above tells as that there are relevant traditional production(K) and traditional consumption(L) social externalities being produce as economic activity takes place as indicated by the continuous black arrows from K and L to E(A), but they are being externalized as indicated by the continuous brown arrow from TM to E(A) because they were assumed to be irrelevant in the traditional market model(TM).

The circular traditional market economy under no social externality neutrality assumption

The externalization of relevant social externalities[E(A)] means that there is a disconnect between the pricing mechanism of the traditional market(TM) and the relevant externalities[E(A)] when social externality accounting matters, which leads to a broken circular traditional economy, a situation that can be represented as in Figure 4 below:

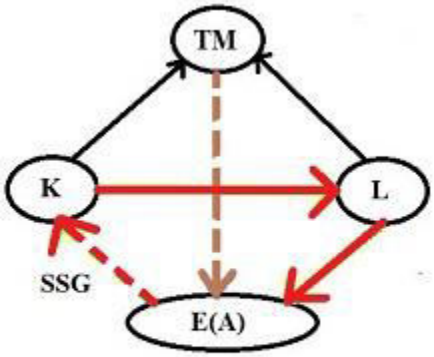

Figure 4 The social externality gap(SSG) embedded in the circular traditional market(TM) illusion

Figure 4 above points out that the disconnect between the traditional market pricing and externalities indicated by the broken brown arrow creates a social sustainability gap(SSG) breaking the production-consumption-social externality cycle as indicated by the broken red arrow, which affects the sustainability of the traditional market. In other words, externalizing relevant social externalities[(E(A)] leads to a social sustainability gap(SSG) that breaks the circular structure of the traditional market(TM).

The circular red market economy structure under environmental externality neutrality assumption

When society(A) matter; and therefore, we internalized the cost of the relevant social externalities[I(a)] in the pricing mechanism of the traditional market(TM) we shift to the world of socially friendly markets or red markets(RM), a world that can be expressed as in Figure 5 below:

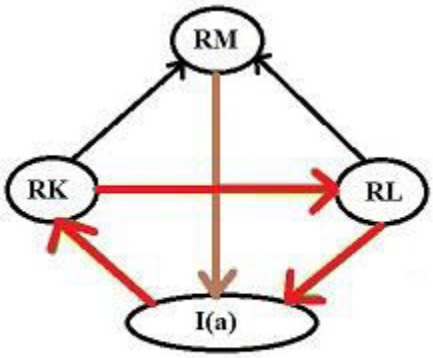

Figure 5 The structure of the circular red economy(RM).

Figure 5 above says that the internalization of the social externality[I(a)] closes the social sustainability gap(SSG) that existed in the circular traditional economy leading to an unbroken or

continuous circular red economy. In other words, the internalization of relevant social externalities[I(a)] leads to the closing of the production-consumption-social externality cycle.

Comparing the circular traditional economy with the circular red economy

Therefore, in the circular red market(RM) there is no social sustainability gap(SSG) as there is no disconnect between the red market price and the relevant social externality while the opposite is true in the circular traditional economy when relevant social externalities must be accounted for, a situation that can be easily appreciated in Figure 6 below:

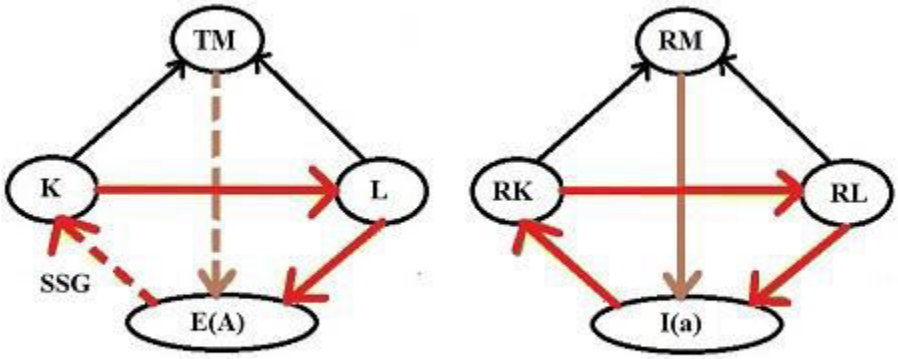

Figure 6 Comparing the structure of the circular traditional economy(TM) on the left with the circular red economy(RM) on the right

Comparing the two circular economies in Figure 6 above it is clear that only in the traditional market(TM), figure to the left, there is a disconnect between pricing and relevant externalities as relevant externalities are being externalized as indicated by the broken brown arrow from TM to E(A); and therefore, only in the traditional markets there is a social sustainability gap(SSG) as indicated by the broken red arrow from E(A) to K.

Food for thoughts

a) Can social externality management markets exist without government intervention? I think no, what do you think? and b) Can externality management markets be used as a mean to create a point of transfer of some social and/or environmental responsibility to the private sector? I think yes, what do you think?

Conclusions

It was indicated that when social externalities need to be accounted for the traditional market illusion of social externality neutrality breaks. It was stressed that the disconnection

traditional market price-social externality creates a social sustainability gap breaking the circular traditional economy cycle. It was highlighted that when internalizing the social externality the traditional market price shifts to the red market price closing the social sustainability gap that was present in the circular traditional economy. It was shown that when comparing the structure of the circular traditional economy and of the red economy only the traditional economy has a price-social externality disconnection; and therefore, only the circular traditional economy has a social sustainability gap when social externality accounting is binding.

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