Citation:

Muñoz, Lucio, 2023. **Sustainability thought 176: Plotting the perfect market shifts and dwarf market shifts solutions to distorted traditional market pricing mechanisms in the same plane to point out the nature of remaining sustainability gaps under paradigm shift avoidance processes,** In: ***International Journal of Latest Engineering and Management Research (IJLEMR),*** ISSN: 2455-4847, www.ijlemr.com, Volume 08, Issue 03, March, Pp. 39-50, India.

Sustainability thought 176: Plotting the perfect market shifts and dwarf market shifts solutions to distorted traditional market pricing mechanisms in the same plane to point out the nature of remaining sustainability gaps under paradigm shift avoidance processes

By

Lucio Muñoz*

*** Independent Qualitative Comparative Researcher / Consultant, Vancouver, BC, Canada Email: munoz@interchange.ubc.ca**

Abstract

It can be said that there are three different perfect market ways to fully correct the distorted pricing mechanism of perfect traditional markets through externality cost internalization, namely perfect sustainability markets, perfect green markets and perfect red markets. Each a perfect shift away from distorted traditional market prices that takes place when closing specific sustainability gap issues embedded in the traditional market model. For example, if we close the social sustainability gap embedded in the perfect traditional market model, then this perfect market structure will shift and take the perfect market structure of the perfect red market. It can be also said that there are three different imperfect market ways of managing the consequences of the distorted pricing mechanism of perfect traditional markets through externality cost management, namely dwarf sustainability markets, dwarf green markets, and dwarf red markets. Each imperfect market comes along when we choose to account for only a portion of the sustainability gaps separating the perfect traditional market from other perfect markets. And it can be then said in general that if market patches are taken to avoid science based consensus for perfect paradigm shifts, then dwarf sustainability markets, dwarf green markets, and dwarf red markets can be seen as patches implemented to avoid having the traditional market model shift to perfect sustainability markets, perfect green markets, and perfect red markets respectively. Therefore, when patches are used instead of full fixes to address sustainability gap issues separating the traditional perfect market from other perfect markets, then sustainability black holes are created associate with each type of market patch, and with the

specific active remaining sustainability gap embedded in this market patch. In other words, when we are implementing dwarf externality correction or partial externality based imperfect shifts instead of perfect fixes to avoid a perfect market shift then we are leaving in place active remaining sustainability gaps or sustainability black holes while at the same time carrying out pollution management. For example, when avoiding in 2012 to go the way of green markets to follow the way of dwarf green markets to patch the distorted perfect traditional market instead of fully fixing it we created an active remaining environmental sustainability gap issue or environmental sustainability black hole issue which is at work at the same time as pollution management takes place, an issue which is embedded in the dwarf green market structure. And this brings the questions, how to plot the perfect market shifts and dwarf market shifts solutions to distorted traditional market pricing mechanisms in the same plane in order to point out the nature of remaining sustainability gaps under paradigm shift avoidance processes?. What are the implications of this?

Key words

Perfect traditional markets, perfect red markets, dwarf red markets, perfect green markets, dwarf green markets, perfect sustainability markets, dwarf sustainability markets, sustainability gaps, social sustainability gap, environmental sustainability gap, socio-environmental sustainability gap, externality margin, paradigm shift, cost externalization, cost internalization, pollution management, environmental externality management, pollution management cost, sustainability black holes, remaining sustainability gaps.

Introduction

a) Perfect market solutions to the distorted pricing mechanism of perfect traditional markets

It can be said that there are three different perfect market ways to fully correct the distorted pricing mechanism of perfect traditional markets through externality cost internalization, namely perfect sustainability markets, perfect green markets and perfect red markets. These different perfect ways to address the social and/or environmental distortions embedded in the pricing mechanism of the traditional market through externality cost internalization were shared recently(Muñoz 2022) as summarized in Figure 1 below:

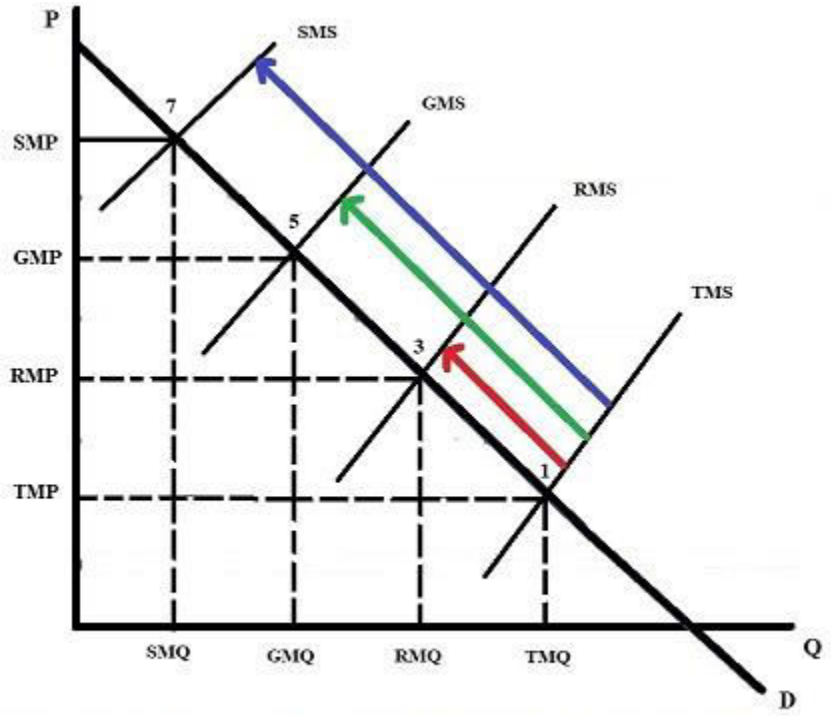

Figure 1 **The three perfect market solutions to the distorted traditional market price problem through perfect red markets RM, perfect green markets GM, and perfect sustainability markets S a la full externality cost internalization.**

We can appreciate the following based on Figure 1 above: i) There is a perfect traditional market TM at point 1, which has a distorted market price mechanism(TMP) in terms of social(SM) and/or environmental(EM) cost accountability. This market price accounts for only the economic cost(ECM) of production at a profit(TMP = ECM + i = P), and once in place this market will tend to produce at the lowest price possible; ii) there is a perfect red market RM at point 3, which accounts for both the social(SM) and economic(ECM) cost of production at a profit(RMP = SM + ECM + i = SM + P), and once in place this market will tend to produce at the lowest red market price possible; iii) there is a perfect green market GM at point 5, which accounts for both the environmental(EM) and economic(ECM) cost of production at a profit(GMP = EM + ECM + i = EM + P), and once in place this market will tend to produce at the lowest green market price possible; and iv) there is a perfect sustainability market S at point 7, which accounts for all social(SM), environmental(EM) and economic(ECM) cost of production at a profit(SMP = SM + EM + ECM + i = SM + EM + P), and once in place this market will tend to produce at the lowest sustainability market price possible. In other words, we can indicate the following aspects based on Figure 1 above i) The traditional market shifts from point 1 to point 3 when its social sustainability gap(SSG) is corrected by social cost internalization(TMP = P------→ RMP = P + SM); ii) The traditional market shifts from point 1 to point 5 when its environmental sustainability gap(ESG) is corrected by environmental cost internalization(TMP = P------→ GMP = P + EM); and iii) The traditional market shifts from point 1 to point 7 when its socio-environmental sustainability gap(SESG) is corrected by social cost internalization and environmental cost internalization(TMP = P------→ SMP = P + SM +

EM). Hence, the perfect sustainability market, the perfect green market, and the perfect red market are the three perfect ways to correct distorted traditional market pricing mechanism inducing in each case a perfect shift.

We can also appreciate in Figure 1 above that i) the market that produces and consumes the most is the perfect traditional market TM, with production at TMQ; and the market that produces and consumes the less is the perfect sustainability market S, with production at SMQ so that TMQ > SMQ; ii) the market that has the highest market price is the perfect sustainability market S, with price SMP; and the market that has the lowest market price is the perfect traditional market TM, with price TMP so that SMP > TMP; and iii) the market ranking in terms of production and price is TMQ > RMQ > GMQ > SMQ as TMP < RMP < GMP < SMP.

Implication 1:

When the social and/or environmental cost distortions embedded in the pricing mechanism of the traditional markets are corrected through externality cost internalization the traditional market shifts upwards perfectly to markets of higher cost responsibility as indicated in Figure 1 above, which once in place will tend to produce at the lowest externality cost possible making them pollution reduction markets as good with less pollution are consumed at lower market prices, be it the perfect sustainability market or the perfect green market or the perfect red market.

b) Imperfect market solutions to the distorted pricing mechanism of perfect traditional market prices

It can be also said that there are three different imperfect market ways of managing the consequences of the distorted pricing mechanism of perfect traditional markets through externality cost management, namely dwarf sustainability markets, dwarf green markets, and dwarf red markets. These different imperfect ways to address the social and/or environmental distortions embedded in the pricing mechanism of the traditional market though pollution management thinking were described in detail recently(Muñoz 2023) as summarized in Figure 2 below:

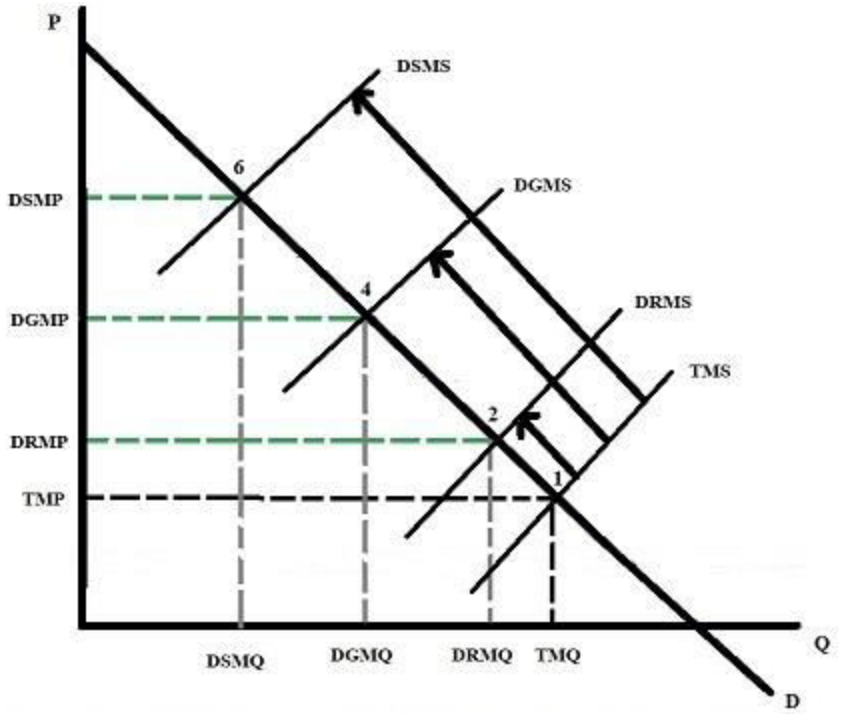

Figure 2 The three imperfect solutions to the distorted traditional market price problem through dwarf red markets DRM, dwarf green markets DGM, and dwarf sustainability markets DSM a la pollution cost management.

We can point out the following based on Figure 2 above: i) There is a perfect traditional market TM at point 1, which has a distorted market price mechanism(TMP) in terms of social(SM) and/or environmental(EM) cost accountability. This market accounts for only the economic(ECM) cost of production at a profit(TMP = ECM + i = P), and once in place this market will tend to produce at the lowest price possible; ii) there is a dwarf red market DRM at point 2, which accounts for some social cost of production(DSM) and all economic(ECM) cost of production at a profit(DRMP = DSM + ECM + i = DSM + P), where the dwarf social margin DSM is set by the social pollution manager; iii) there is a dwarf green market DGM at point 4, which accounts for some environmental cost of production(DEM) and all economic(ECM) cost of production at a profit(DGMP = DEM + ECM + i = DEM + P), where the dwarf environmental margin DEM is set by the environmental pollution manager; and iv) there is a dwarf sustainability market DSM at point 6, which accounts for some social cost of production(DSM) and some environmental cost of production(DEM) and all economic(ECM) cost of production at a profit(DSMP = DSM + DEM + ECM + i = DSM + DEM + P), where the dwarf socio-environmental margin DSEM is set by the socio-environmental pollution manager. In other words, we can highlight the following based on Figure 2 above i) The traditional market shifts from point 1 to point 2 when its social sustainability gap(SSG) is partially corrected by a dwarf social margin(DSM) or partial social cost(TMP = P------→ DRMP = P + DSM); ii) The traditional market shifts from point 1 to point 4 when its environmental sustainability gap(ESG) is partially corrected by a dwarf environmental margin(DEM) or partial environmental cost (TMP = P------→ DGMP = P + DEM); and iii) The traditional market shifts from point 1 to point

6 when its socio-environmental sustainability gap(SESG) are partially corrected by a dwarf social margin(DSM) and dwarf environmental margin(DEM) using social and environmental pollution cost management(TMP = P------→ DSMP = P + DSM + DEM). Hence, the dwarf sustainability market, the dwarf green market, and the dwarf red market are the three imperfect ways to address distorted traditional market pricing mechanism inducing in each case an imperfect shift.

We can also highlight based on Figure 2 above the following: i) the market that produces and consumes the most is the perfect traditional market TM, with production at TMQ; and the market that produces and consumes the less is the dwarf sustainability market DSM, with production at DSMQ so that TMQ > DSMQ; ii) the market that has the highest market price is the dwarf sustainability market DSM, with price DSMP; and the market that has the lowest market price is the perfect traditional market TM, with price TMP so that DSMP > TMP; and iii) the market ranking in terms of production and price is TMQ > DRMQ > DGMQ > DSMQ as TMP < DRMP < DGMP < DSMP.

Implication 2:

When the some social and/or some environmental cost distortions embedded in the pricing mechanism of the traditional markets are addressed through externality cost management the traditional market shifts upwards imperfectly to markets of some externality cost responsibility as indicated in Figure 2 above, which once in place will tend to produce at the dwarf price determined by the dwarf margin assigned by the pollution manager or produce less if the dwarf margin is increased making them pollution contraction markets, be it the dwarf sustainability market or the dwarf green market or the dwarf red market.

c) Imperfect market solutions implemented to avoid perfect market solutions as a paradigm shift avoidance strategy lead to sustainability black holes

It can be then said in general that if market patches are taken to avoid science based consensus for perfect paradigm shifts, then dwarf sustainability markets, dwarf green markets, and dwarf red markets can be seen as patches implemented to avoid having the traditional market model shift to perfect sustainability markets, perfect green markets, and perfect red markets respectively. Therefore, when patches are used instead of full fixes to address sustainability gap issues separating the traditional perfect market from other perfect markets, then sustainability black holes are created associate with each type of market patch, and with the specific active remaining sustainability gap embedded in this market patch. In other words, when we are implementing dwarf externality correction or partial externality based imperfect shifts instead of perfect fixes to avoid a perfect market shift then we are leaving in place active remaining sustainability gaps or sustainability black holes while at the same time carrying out pollution management. For example, when avoiding since 2012(UNCSD 2012a; UNCSD 2012b) to go the way of green markets to follow the way of dwarf green markets to patch the distorted perfect

traditional market of Adam Smith(Smith 1776) instead of fully fixing it we created an active remaining environmental sustainability gap issue or environmental sustainability black hole issue which is at work at the same time as pollution management takes place, an issue which is embedded in the dwarf green market structure. This means that going dwarf green markets is a way to avoid dealing head on with the environmental issues associated to the traditional economic development model pointed out by the World Commission on Environment and Development(WCED 1987) in "Our Common Future" that needed to be corrected. And this brings the questions, how to plot the perfect market shifts and dwarf market shifts solutions to distorted traditional market pricing mechanisms in the same plane in order to point out the nature of remaining sustainability gaps under paradigm shift avoidance processes?. What are the implications of this?

Goals of this paper

a) To plot the imperfect dwarf markets shifts on top of the perfect markets shifts to point out the remaining sustainability gap or sustainability black hole issues associated with perfect paradigm shift avoidance; b) To highlight the environmental sustainability black hole that is created when setting up dwarf green markets to avoid a perfect green paradigm shift; and c) to stress that when perfect market solutions to the social and/or environmental cost distortions embedded in the traditional market price mechanism are used there are no dwarf market forces at play like sustainability black holes.

Methodology

First, the terminology and operational concepts, merging rules, externalization and internalization, and sustainability gap rules and closing rules are shared. Second, perfect markets and dwarf markets are plotted in the same plane to show the remaining sustainability gap issues that come into play when avoiding perfect paradigm shifts. Third, the environmental sustainability black hole created when setting up dwarf green markets is highlighted. Fourth, the idea that perfect market fixes to distorted traditional market prices lead to perfect shifts and therefore, they leave no remaining sustainability gap issues is pointed out. And finally, some food for thoughts and relevant conclusions are listed.

Terminology

A = Dominant society system a = Passive society system

B = Dominant economy system b = Passive economic system

C = Dominant environmental system c = Passive environmental system

S = Perfect sustainability market SMP = Sustainability market price

RM = Perfect red market RMP = Red market price

GM = Perfect green market GMP = Green market price

TM = Perfect traditional market TMP = Traditional market price

E[ ] = Externalization venue I[ ] = Internalization venue

SG = Sustainability gap SSG = Social sustainability gap

ESG = Environmental sustainability gap SESG = Socio-environmental sustainability gap

DRM = Dwarf red market DGM = Dwarf green market

DS = Dwarf sustainability market DSSG = Dwarf social sustainability gap

DESG = Dwarf environmental sustainability gap E(Y) = Externality Y

DSESG = Dwarf socio-environmental sustainability gap F(E[Y]) = Patched externality Y

SM = Social margin DSM = Dwarf social margin

GM = Green margin DGM = Dwarf green margin

SEM = Socio-environmental margin DSEM = Dwarf socio-environmental margin

DGMP = Dwarf green market price DSEMP = Dwarf socio-environmental market price

DRMP = Dwarf red market price DSMP = Dwarf sustainability market price

---

Operational concepts, model structures; and internalization, externalization and sustainability gap opening and closing rules.

A) Operational concepts

1) Science, the *world based on the scientific truth, this world falls if invalidated.*

2) Ideology, *the world based on the non-scientific truth, this world will tend to persist even if invalidated.*

3) The theory-practice general consistency principle, *the world where the theory of the model must match the practice.*

4) The different model general inconsistency principle, *the world where the theory and practice of different models are inconsistent with each other.*

5) Academic facts, the *science based truth.*

6) Alternative academic facts, *the non-science based truth.*

7) Academic blindness, *the inability to see academic facts due to the existence of knowledge gaps, paradigm shift based or otherwise.*

8) Willful academic blindness, *the willingness to ignore academic facts and consensus.*

9) Sustainability, the world where the interplay of sustainability theory and sustainability practice is aimed at fixing or correcting embedded externality problems.

10) Sustainable development, the world where the interplay of sustainable development theory and sustainable development practice is aimed at patching or managing embedded externality problems.

11) Academic integrity, the duty to respect and defend academic facts and consensus.

12) Golden paradigm, one that does not creates abnormalities.

13) Flawed paradigm, one that creates abnormalities.

14) Kuhn's loop, the science based mechanism that leads to paradigm shift through abnormality correction.

15) The perfect traditional market, the market cleared by the traditional market price(TMP = P), an economy only market at the heart of raw capitalism.

16) The perfect red market, the market cleared by the red market price(RMP = P + SM), a society and economy market at the heart of red capitalism.

17) The perfect green market, the market cleared by the green market price(GMP = P + EM), an environment and economy market at the heart of green capitalism.

18) The perfect sustainability market, the market cleared by the sustainability market price(SMP = P + SM + EM), a society and environment and economy market at the heart of yellow capitalism.

19) The dwarf red market, the market cleared by the dwarf red market price(DRMP = P + DSM), a patched red market at the heart of dwarf socially friendly capitalism.

20) The dwarf green market, the market cleared by the dwarf green market price(DGMP = P + DEM), a patched green market at the heart of dwarf green market based capitalism.

21) The dwarf sustainability market, the market cleared by the dwarf sustainability market price(DSP = P + DSM + DEM), a patched sustainability market at the heart of dwarf yellow capitalism.

22) The dwarf social margin, the cost that reflects the assigned social cost of production(DSM) in the social externality management based market.

23) The dwarf environmental margin, the cost that reflects the assigned social cost of production(DEM) in the environmental externality management based market.

24) The dwarf sustainability margin, the cost that reflects the assigned social(DSM) and environmental(DEM) cost of production in the socio-environmental externality management based market.

B) Paradigm structures

1) A golden paradigm

If we have a dominant paradigm R and it is a golden paradigm GOM, then it produces no externalities or no abnormalities A

i) GOM = R

As it can be seen in expression i) above the golden model GOM does not produce abnormalities.

2) A flawed paradigm

If we have a dominant paradigm R and it is a flawed paradigm FLM, then it produces "n" externalities or abnormalities A so as A1,A2,….

ii) FLM = R(A1, A2,….An)

As it can be appreciated in expression ii) above the flawed model FLM produces "n" abnormalities.

C) The Thomas Kuhn's transformation loop(TKTL) under academic integrity

1) Impact on the golden paradigm

If we subject a golden paradigm GOM = R to the Thomas Kuhn's transformation loop(TKTL), the process will have no impact on it as it has no abnormalities A to correct, golden paradigm GOM remains a golden paradigm GOM

iii) TKTL(GOM) = TKTL(R) = R = GOM

The expression iii) above tells us that the golden model displays TKTL loop neutrality as it has no abnormalities to remove.

2) Impact on the flawed paradigm

If we subject a flawed paradigm FLM = **R(A1,A2,….An)** to the Thomas Kuhn's transformation loop(TKTL), the loop process will be active until all abnormalities are corrected and a golden paradigm GOM arises

iv) TKTL(FLM) = TKTL[R(A1,A2,….An) -------→R = GOM

The expression iv) above tells us that the TKTL loop process transforms flawed dominant paradigms FLM in the end into golden paradigms GOM by correcting the abnormalities A1…..An affecting them and shifting them in the process.

D) Relevant market structures

If we have the following: a = social abnormality, c = environmental abnormality, A = dominant society, C = dominant environment, and B = the dominant economy, then the structure of relevant markets can be stated as indicated below:

1) The traditional market as a golden model

i) TM = B

Under externality neutrality assumptions the traditional market TM in section i) above is a golden paradigm, it produces no abnormalities.

2) The traditional market under social abnormalities(a)

ii) TM = aB

Under no social externality neutrality assumptions, the traditional market TM in section ii) above produces social abnormalities "a". It is a flawed paradigm as it has social abnormalities to correct.

3) The traditional market under environmental abnormalities(c)

iii) TM = Bc

Under no environmental externality neutrality assumptions, the traditional market TM in section iii) above produces environmental abnormalities "c". It is a flawed paradigm as it has environmental externalities to correct.

4) The traditional market under socio-environmental abnormalities(ac)

iv) TM = aBc

Under no socio-environmental externality neutrality assumptions, the traditional market TM in section iv) above produces socio-environmental abnormalities "ac". It is a flawed paradigm as it has social and environmental externalities to correct.

5) The red market under environmental abnormalities(c)

v) RM = ABc

Under no environmental externality assumptions, the red market RM in section v) above produces environmental abnormalities. It is a flawed paradigm as it has environmental externalities to correct. Notice that in the red market RM, both society(A) and economy(B) are in dominant form.

6) The green market under social abnormalities(a)

vi) GM = aBC

Under no social externality assumptions, the green market GM in section vi) above produces social abnormalities. It is a flawed paradigm as it has social externalities to correct. Notice that in the green market GM, both the economy(B) and the environment(C) are in dominant form.

7) The sustainability market has no abnormalities

vii) SM = ABC

The sustainability market SM in section vii) above produces no abnormalities as all components are in dominant form since all components are now endogenous to the model. It is a golden paradigm as it has no abnormalities to correct.

E) Abnormality externalization and internalization rules

If y, x, z are three abnormalities and Y, X, Z are the corrected variables and if E[ ] = externalization and I[ ] = internalization, then the following holds true:

a) E[Y] = y **b) E[X] = x** **c) E[Z] = z**

d) I[y] = Y **e) I[x] = X** **f) I[z] = Z**

g) I[E[Y]] = Y **h) E[I[y]] = y** **i) E[YX] = yx**

F) Sustainability gap creation and closing rules

If y, x, z are three abnormalities that create sustainability gaps(SG) and Y, X, Z are the corrected variables and if E[ ] = externalization and I[ ] = internalization, then the following holds true:

a) $E[Y] = SG_Y$ **b) $E[X] = SG_X$** **c) $E[Z] = SG_Z$**

d) $I[SG_Y] = Y$ **e) $I[SG_X] = X$** **f) $I[SG_Z] = Z$**

g) $I[E[Y]] = Y$ **h) $I[E[X]] = X$** **i) $I[E[Z]] = Z$**

j) $E[YX] = SG_{YX}$ **k) $I[SG_{YX}] = YX$** **l) $I[E[YX]] = YX$**

G) Remaining sustainability gaps

If we have two dominant components Y and X and we have a cost margin $CM_Y = E[Y] = SG_Y$ and $CM_X = E[X] = SG_X$ plus we have a dwarf cost margin $DCM_Y = T_Y$ and $DCM_X = T_X$, where $CM_Y > DCM_Y$, $CM_X > DCM_X$ and hence, $E[Y] > T_Y$ and $E[X] > T_X$, then the remaining sustainability gap RSG for each variable comes as follows:

a) $RSG_Y = CM_Y - DCM_Y = E[Y] - T_Y = SG_Y - T_Y$

b) $RSG_X = CM_X - DCM_X = E[X] - TY = SG_X - T_X$

H) Patching of sustainability gaps

If we have two dominant components Y and X and we have a cost margin $CM_Y = E[Y] = SG_Y$, $CM_X = E[X] = SG_X$, and $CM_{YX} = E[YX] = SG_{YX}$; and we have dwarf market patches T_Y, T_X, and T_{YX}, then the patching(F) of sustainability gaps SG leading to dwarf sustainability gaps DSG works as follows:

a) $F(CM_Y) = F(E[Y]) = F(SG_Y) = DSG_Y = T_Y$

b) $F(CM_X) = F(E[X]) = F(SG_X) = DSG_X = T_X$

c) $F(CM_{YX}) = F(E[YX]) = F(SG_{YX}) = DSG_{YX} = T_{YX}$

d) $F(E[YX]) = F(E[Y] + E[X]) = DSG_{YX} = T_{YX}$

E) Internalizing patched sustainability gap to close them

If we have a two dominant components Y and X and we have patched cost margins such that $F(CM_Y) = F(E[Y]) = F(SG_Y) = DSG_Y = T_Y$ or $F(CM_{YX}) = F(E[YX]) = F(SG_{YX}) = DSG_{YX} = T_{YX}$, then the dwarf cost internalization process to shift markets to dwarf markets works as follows:

a) $I[F(CM_Y)] = I[F(E[Y])] = I[F(SG_Y)] = I[DSG_Y] = I[T_Y] = T_Y$

b) $I[F(CM_{YX})] = I[F(E[YX])] = I[F(SG_{YX})] = I[DSG_{YX}] = I[T_{YX}] = T_{YX}$

Placing dwarf market solutions on top of perfect market solutions to highlight remaining sustainability gap pressures under paradigm shift avoidance

If we plot the dwarf market structures in Figure 2 on top of the corresponding perfect market structures in Figure 1 in the introduction we can stress the remaining sustainability gap issues affecting dwarf markets when used as perfect paradigm shift avoidance instruments as shown in Figure 3 below:

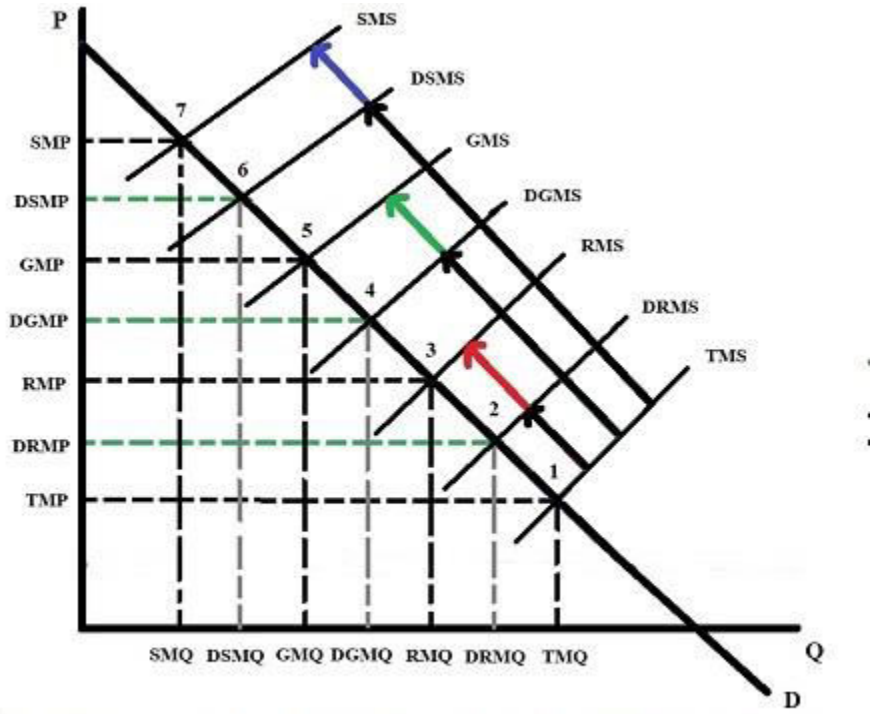

Figure 3 Placing the dwarf market solutions to traditional market pricing distortions on top of the perfect market solutions to highlight remaining sustainability gap issues that come to exist when we set up dwarf markets to avoid a full fix through perfect paradigm shifts.

We can highlight based on Figure 3 above the following: i) Placing the dwarf red market shift on top of the perfect red market shift leaves a remaining social sustainability gap issue(RSSG) still active as indicated by the portion of the red arrow from point 2 to point 3, which means dwarf red markets are social sustainability patches; ii) Placing the dwarf green market shift on top of the perfect green market shift leaves a remaining environmental sustainability gap issue(RESG) still active as indicated by the portion of the green arrow from point 4 to point 5, which means that dwarf green markets are environmental sustainability patches; and iii) Placing the dwarf sustainability market shift on top of the perfect sustainability market shift leaves a remaining socio-environmental sustainability gap issue(RSESG) still active

as indicated by the portion of the blue arrow from point 6 to point 7, which means that dwarf sustainability markets are socio-environmental sustainability patches. Hence, perfect market paradigm shift avoidance creates remaining sustainability gap issues(RSG) affecting the sustainability of dwarf market structures(DM), as indicated in detail step by step below:

i) Understanding the nature of the remaining social sustainability gap in terms of social margins created when setting up dwarf red markets

1) The social sustainability gap(SSG)

If we subtract the traditional market price structure(TMP = P) in Figure 3 above at point 1 from the price structure of the perfect red market structure(RMP) at point 3, we can find the social sustainability gap(SSG) in terms of social margins(SM) as follows:

SSG = RMP - TMP = (SM + P) – (P) = SM

The social sustainability gap equals the social margin so that SSG = SM.

2) The dwarf social sustainability gap(DSSG)

If we subtract the traditional market price structure(TMP = P) in Figure 3 at point 1 above from the price structure of the dwarf red market structure(DRMP) at point 2, we can find the dwarf social sustainability gap(DSSG) in terms of dwarf social margins(DSM) as follows:

DSSG = DRMP - TMP = (DSM + P) – (P) = DSM

The dwarf social sustainability gap equals the dwarf social margin so that DSSG = DSM.

3) The remaining social sustainability gap(RSSG)

If we subtract the dwarf social sustainability gap(DSSG) in the dwarf social market that is assigned by the social pollution manager from the social sustainability gap(SSG) in the perfect red market that needs to be closed we arrive at the remaining social sustainability gap(RSSG) embedded in the dwarf red market as indicated below:

RSSG = SSG - DSSG = SM – DSM > 0 since the SM > DSM

Hence, the portion of the arrow that is red in Figure 3 above is the remaining social sustainability gap(RSSG) still active when social pollution management is taking place.

ii) Understanding the nature of the remaining environmental sustainability gap in terms of environmental margins created when setting up dwarf green markets

1) The environmental sustainability gap(ESG)

If we subtract the traditional market price structure(TMP = P) in Figure 3 at point 1 above from the price structure of the perfect green market structure(GMP) at point 5, we can find the environmental sustainability gap(ESG) in terms of environmental margins(EM) as follows:

ESG = GMP - TMP = (EM + P) – (P) = EM

The environmental sustainability gap equals the environmental margin so that ESG = EM.

2) The dwarf environmental sustainability gap(DESG)

If we subtract the traditional market price structure(TMP = P) in Figure 3 at point 1 above from the price structure of the dwarf green market structure(DGMP) at point 4, we can find the dwarf environmental sustainability gap(DESG) in terms of dwarf environmental margins(DEM) as follows:

DESG = DGMP - TMP = (DEM + P) – (P) = DEM

The dwarf environmental sustainability gap equals the dwarf environmental margin so that DESG = DEM.

3) The remaining environmental sustainability gap(RESG)

If we subtract the dwarf environmental sustainability gap(DESG) in the dwarf green market that is assigned by the environmental pollution manager from the environmental gap(ESG) in the perfect green market that needs to be closed we arrive at the remaining environmental sustainability gap(RESG) embedded in the dwarf green market as indicated below:

RESG = ESG - DESG = EM – DEM > 0 since the EM > DEM

Hence, the portion of the arrow that is green in Figure 3 above is the remaining environmental sustainability gap(RESG) still active when environmental pollution management is taking place.

iii) Understanding the nature of the remaining socio-environmental sustainability gap in terms of socio-environmental margins created when setting up dwarf sustainability markets

1) The socio-environmental sustainability gap(SESG)

If we subtract the traditional market price structure(TMP = P) in Figure 3 at point 1 from the price structure of the perfect sustainability market structure(SMP) at point 7, we can find the socio-environmental sustainability gap(SESG) in terms of socio-environmental margins(SEM) as follows:

SESG = SMP - TMP = (SM + EM + P) – (P) = SM + EM = SEM

The socio-environmental sustainability gap equals the socio-environmental margin so that SESG = SEM.

2) The dwarf socio-environmental sustainability gap(DSESG)

If we subtract the traditional market price structure(TMP = P) in Figure 3 at point 1 from the price structure of the dwarf sustainability market structure(DSMP) at point 6, we can find the dwarf socio-environmental sustainability gap(DSESG) in terms of dwarf socio-environmental margins(DSEM) as follows:

DSESG = DSMP - TMP = (DSM + DEM + P) – (P) = DSM + DEM = DSEM

The dwarf socio-environmental sustainability gap equals the dwarf socio-environmental margin so that DSESG = DSEM.

3) The remaining socio-environmental sustainability gap(RSESG)

If we subtract the dwarf socio-environmental sustainability gap(DSESG) in the dwarf sustainability market that is assigned by the socio-environmental pollution manager from the socio-environmental sustainability gap(SESG) in the perfect sustainability market that needs to be closed we arrive at the remaining socio-environmental sustainability gap(RSESG) embedded in the dwarf sustainability market as indicated below:

RSESG = SESG - DSESG = (SM + EM) – (DSM + DEM) = SEM – DSEM > 0 since the SM + EM = SEM > DSM + DEM = DSEM

Hence, the portion of the arrow that is blue in Figure 3 above is the remaining socio-environmental sustainability gap(RSESG) still active when socio-environmental pollution management is taking place.

Pointing out the environmental sustainability black hole created when there is perfect green market paradigm shift avoidance

It can be said that everywhere there is a remaining sustainability gap due to perfect paradigm shift avoidance there is a sustainability black hole as the market price of dwarf markets is delinked from the market price of its corresponding perfect market as prices in dwarf markets are set externally, not by the free interactions of supply and demand, including perfect green market paradigm shift avoidance as stressed in Figure 6 below:

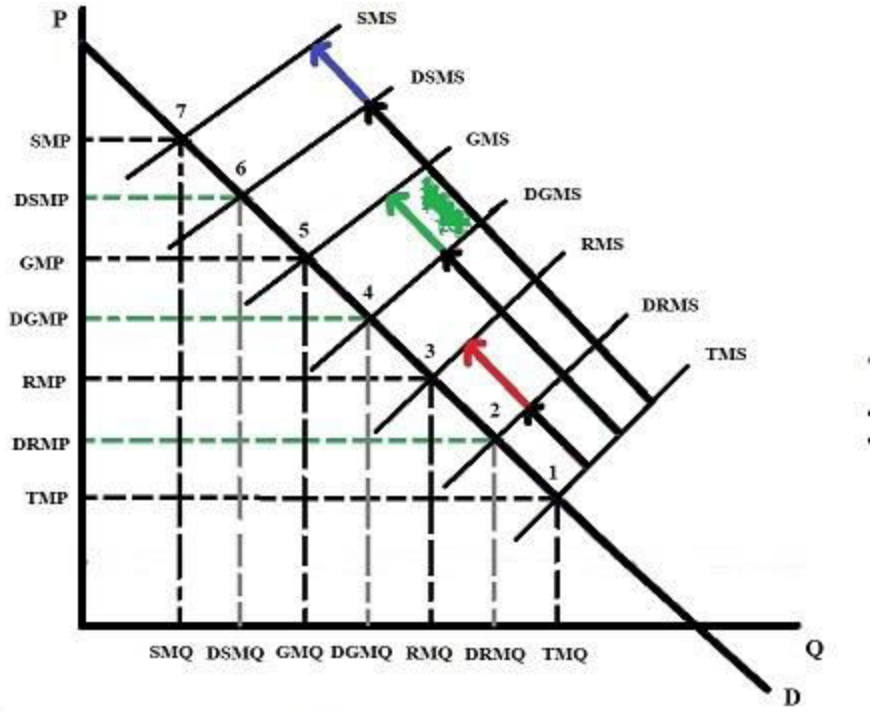

Figure 4 The environmental sustainability black hole created when setting up dwarf green markets as the environmental sustainability gap is not fully closed, and the remaining portion is still active while environmental pollution management takes place.

Figure 4 above shows the structure of the environmental sustainability black hold created when setting up dwarf green markets at point 4 instead of the science based consensus perfect shift to green markets at point 5 expected during 2012 Rio + 20 Conference(UNCSD 2012a; UNCSD 2012b). The environmental black hold is created when externally setting up a dwarf green market cost that dwarf green producers can pass to dwarf green consumers to contract production and consumption and therefore, to contract environmental pollution; and this dwarf green markets will continue to produce at that point such as point 4 in Figure 4 above, with no incentive to reduce environmental pollution more, until the dwarf green market cost is increased by the environmental pollution manager. Hence, production and consumption in dwarf green markets is not geared at producing goods at the lowest environmental cost possible since as long as they can pass the dwarf green cost to dwarf green consumers they will be producing and consuming goods and services still of high pollution content. In other words, as the environmental cost in dwarf green markets is determined externally, there is no incentive in dwarf green markets to make money by producing at the lowest environmental cost possible, something that is normal behavior in perfect green markets. This is because there is not a direct link between green profits and environmental pollution reduction by expanding production and consumption of less and less environmental pollution content based goods and services when you are in the dwarf green market world.

Linking perfect market fixes to the distorted traditional market price problem with the existence of no remaining sustainability gap or sustainability black holes issues

When the socially and environmentally distorted perfect traditional market price is fixed using perfect red market thinking or perfect green market thinking or perfect sustainability market thinking, through externality cost internalization we have in all cases a perfect shift, and hence, leaving no remaining sustainability gap or black hold issues as indicated in Figure 5 below:

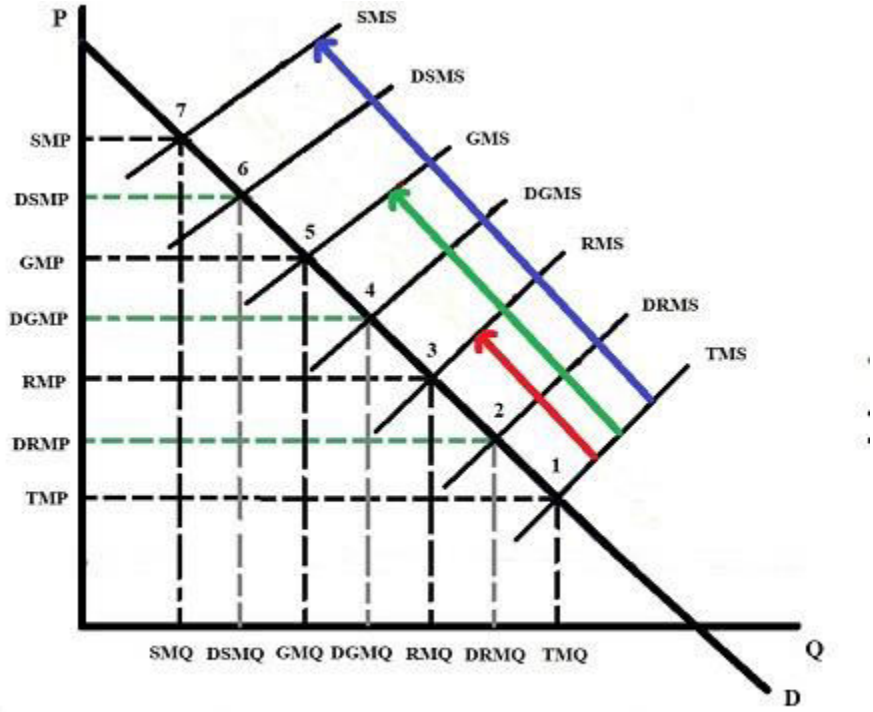

Figure 5 There are no remaining sustainability gaps or sustainability black holes issues when the distorted traditional market price mechanism is fully corrected by full externality cost internalization using perfect market thinking.

We can see in Figure 5 above the following: i) When the traditional market price mechanism at point 1 is fixed in social sustainability terms; and the social sustainability gap(SSG) is closed through social cost internalization, then the traditional market TM at point 1 shifts to the perfect red market at point 3, leaving no remaining social sustainability gap or social externality black hole; ii) When the traditional market price mechanism at point 1 is fixed in environmental sustainability terms; and the environmental sustainability gap(ESG) is closed through environmental cost internalization, then the traditional market TM at point 1 shifts to the perfect green market at point 5, leaving no remaining environmental sustainability gap or environmental externality black hole; iii) When the traditional market price mechanism at point 1 is fixed in socio-environmental sustainability terms; and the socio-environmental sustainability gap(SESG) is closed through socio-environmental cost internalization, then the traditional

market TM at point 1 shifts to the perfect sustainability market at point 7, leaving no remaining socio-environmental sustainability gap or socio-environmental externality black hole.

Food for thoughts

1) Are all perfect markets based on free market type thinking? I think Yes, what do you think?; 2) Are dwarf markets non-free markets? I think Yes, what do you think?; 3) Are dwarf green markets environmental pollution management markets? I think Yes, what do you think?; and 4) Can dwarf sustainability markets be seen as imperfect sustainability markets? I think Yes, what do you think?

Conclusions

First, it was stressed that when we set up dwarf markets as instruments of perfect market paradigm shift avoidance we create sustainability black holes driven by the respective remaining sustainability black holes left in place actively polluting while pollution management takes place. Second, it was highlighted that when we went the way of dwarf green markets in 2012 to avoid going the way of perfect green market thinking we activated an environmental sustainability black hole currently affecting the working of environmental pollution management markets. And third, it was pointed out that when the social and environmental distortions embedded in the pricing mechanism of the perfect traditional market are fully corrected through externality cost internalization it shifts perfectly towards perfect red markets or perfect green markets or perfect sustainability markets depending on the distortion corrected, without leaving remaining sustainability gap or sustainability black hole issues.

References

Muñoz, Lucio, 2022. **Sustainability thought 173: Using the sustainability market price to derive the three perfect market ways to correct distorted traditional market pricing mechanisms under externality cost internalization,** In: ***CEBEM-REDESMA Boletin*****,** Año 16, Nº 11, November, La Paz, Bolivia.

Muñoz, Lucio, 2023. **Sustainability thought 174: Using the sustainability market price to derive the three imperfect market ways to manage the consequences of distorted traditional market pricing mechanisms under externality cost management,** In: ***International Journal of Latest Engineering and Management Research (IJLEMR),*** Vol. 8, Issue 1, January, Pp. 01-13, ISSN: 2455-4847, India.

Smith, Adam, 1776. ***The Wealth of Nations***, W. Strahan and T. Cadell, London, UK.

United Nations Conference on Sustainable Development(UNCSD), 2012a. ***Rio+20 Concludes with Big Package of Commitments for Action and Agreement by World Leaders on Path for a Sustainable Future*****,** Press Release, June 20-22, New York, NY, USA.

United Nations Conference on Sustainable Development(UNCSD), 2012b. ***The Future We Want,*** June 20-22, New York, NY, USA.

World Commission on Environment and Development(WCED), 1987. ***Our Common Future,*** Oxford University Press, London, UK.

Citation:

Muñoz, Lucio, 2023. **Sustainability thought 176: Plotting the perfect market shifts and dwarf market shifts solutions to distorted traditional market pricing mechanisms in the same plane to point out the nature of remaining sustainability gaps under paradigm shift avoidance processes,** In: ***International Journal of Latest Engineering and Management Research (IJLEMR),*** ISSN: 2455-4847, www.ijlemr.com, Volume 08, Issue 03, March, Pp. 39-50, India.