Short Elucidating Note 114: How can the green market paradigm-traditional market paradigm based sustainability framework be stated and used to provide an overview of the expected government monitoring and support role in world driven by fully responsible and irresponsible environmental market behavior under environmental pollution production neutrality and no neutrality assumptions?

By

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Abstract

There is an environmental pollution production problem separating traditional markets from true green markets. Each market has its anchored point, a contraction point and an expansion point, and at each point the government has a specific role to play as a market promoter, as a market monitor, as a market regulator, and as market policy enforcer under no conflict of interest as the responsibility of proper market functioning and of market failures falls on green market producers and green market consumers, and on traditional market producers and traditional market consumers, respectively. Beside linking market behavior with specific expected government roles the framework above can also be used to highlight that government actions can have positive and negative impacts directly or indirectly on the fully responsible and irresponsible environmental behavior of markets they are encouraging or discouraging whether governments are acting under green market paradigm shift knowledge gaps or not plus the framework can be also used to differentiate between two possible types of market failures, internal and external market failures, and hint to the specific role expected government responsibility plays in each of those cases. The issues discussed above, some of them are usually seen from the traditional market thinking/theory point of view while others are missing in mainstream economic thinking as they are assumed away under environmental pollution production neutrality assumptions or they are ignored knowingly as the focus suddenly becomes to address resource use efficiency problems instead environmental pollution production problems. However, all of these issues mentioned above are captured in simple terms using true green market-Traditional market paradigm based sustainability framework and thinking to come out with general ways to see the expected government role and the impacts of such a role on market dynamics and environmental pollution production dynamics in different scenarios, true green markets or traditional markets, under environmental pollution neutrality assumptions or not. And this makes the following questions relevant: How can the true green market-traditional market based sustainability framework be stated and used to provide an overview of expected

government monitoring and support role in world driven by fully responsible and irresponsible environmental market behavior under environmental pollution production neutrality and no neutrality assumptions? What are the implications of framing the issue as done here for traditional market thinking and vertical traditional market paradigm evolution thinking?

Key concepts

The green market, the traditional market, environmental pollution production problem, market expansion, market contraction, government intervention/action, traditional market sustainability problem, internal market failure, external market failure, environmental pollution production externality neutrality assumption, no environmental pollution production externality neutrality assumption

Introduction

a) The environmental pollution production problem separating green markets and traditional markets

It has been pointed out that there is a pollution problem (POP) separating polluting markets or dirty markets from no polluting ones or clean ones (Muñoz 2022), and if we make the environmentally polluting market the traditional market (TM) and the no environmentally polluting market be the green market (GM), then the green market (GM)-traditional market (TM) based sustainability framework can be stated as shown in Figure 1 below:

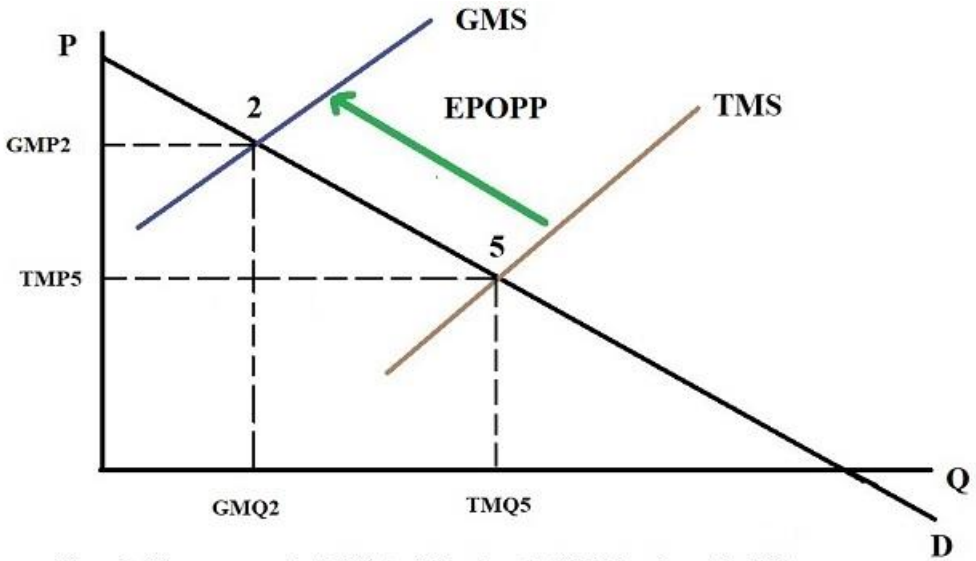

Figure 1 The green market(GM)-traditional market(TM) based sustainability framework

Figure 1 above indicates the following: i) at point 1 there is a green market(GM), where optimal green production and green consumption is GMQ2 at the optimal price GMP2, and no environmental pollution production problem exists here as there is no external market failure nor internal market failure; ii) at point 5 we have a traditional market (TM), where optimal traditional market production and consumption is TMQ5 at the optimal traditional market price TMP5, and there is an environmental pollution problem at point 5 as there is an external market failure, but there is no internal market failure; and hence, iii) there is an external environmental pollution production problem(EPOPP) separating traditional markets (TM) from green markets (GM). We can also see in Figure 1 above that production and consumption in traditional markets (TM) is higher than in green markets (GM) as traditional market prices (TMP) are lower than in green markets (GMP) so that TMQ5 > GMQ2 since TMP5 < GMP2.

Implication 1:

There is an environmental pollution production problem separating traditional markets (TM) from green markets (GM) as the traditional markets under economic optimality works under environmentally based external market failures.

b) The expansions and contractions of green market and traditional market paradigms

If we assume that green markets (GM) and traditional markets (TM) are experiencing internal and external market failures, then their expansion and contractions and related environmental pollution production problems they may be associated with can be indicated as done in Figure 2 below:

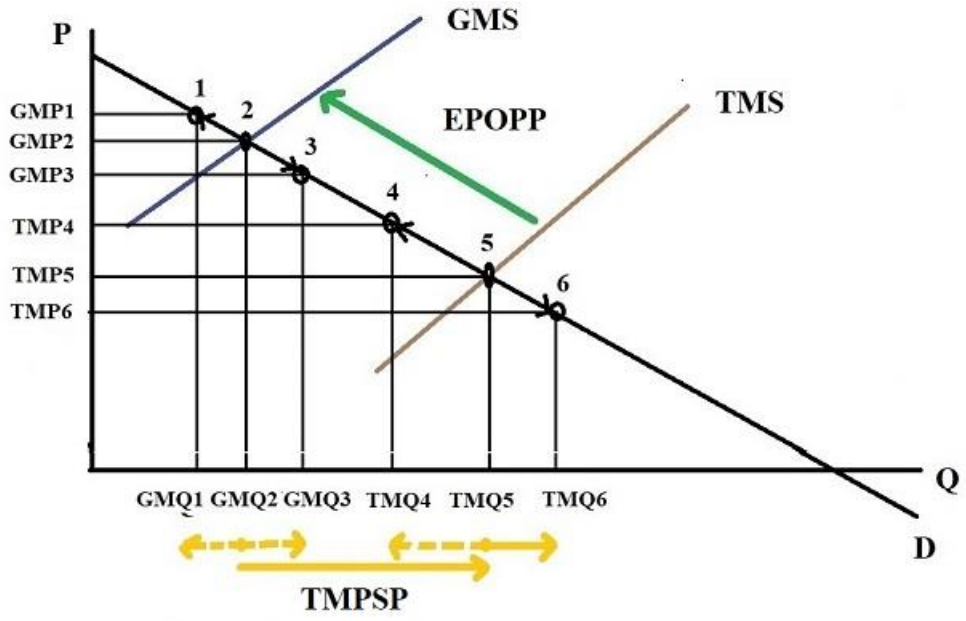

Figure 2 Green markets (GM) and traditional markets (TM) under expansion and contractions and the green market paradigm sustainability problem (GMPSP).

From the point of view of internal market failure we can look at point 2 and point 5 as points where there is no internal market failure in green markets (GM) and there is no internal

market failure in traditional markets (TM), respectively. From the point of view of external market failures we can look at point 2 and point 5 as points where there is no external market failures in green markets (GM) as no external environmental pollution production(NEPOPP) takes place there, and there is an external market failure in traditional markets (TM) as there is there an external environmental pollution production problem(EPOPP) that goes from point 5 to point 2 as indicated by the black arrow or traditional market paradigm sustainability problem(TMPSP) as indicated by the golden continuous arrow going from left to write from GMQ2 to TMQ5, respectively.

We can highlight the following based on Figure 2 above with respect to green markets: i) that Point 1 and point 3 can be seen as points of internal green market failure where market conditions bring the optimal green market price found at point 2 higher as in point 1 and lower as in point 3, ii) that each of these expansion and contraction in green markets have no impact on the environmental pollution production problem(EPOPP) as indicated by the broken golden arrows from GMQ2 to GMQ1 and from GMQ2 to GMQ3 for the contraction from point 2 to point 1 and the expansion from point 2 to point 3; and hence, iii) that there is no external market failure here at point 2, and therefore, not external consequences of environmental pollution production problem expansions and contractions.

We can state the following aspects using Figure 2 above with respect to traditional market dynamics: i) that Point 4 and point 6 can be seen as points of internal traditional market failure where market conditions bring the optimal traditional market price found at point 5 higher as in point 4 and lower as in point 6, ii) that each of these expansion and contraction in traditional markets have an impact on the environmental pollution production problem(EPOPP), where a contraction as indicated by the broken golden arrows from TMQ5 to TMQ4 when you go from point 5 to point 4 contracts the environmental pollution production problem (EPOPP) while the expansion from TMQ5 to TMQ6 when you go from point 5 to point 6 expands the environmental pollution production problem (EPOPP) as indicated by the continuous yellow arrow going from TMQ5 to TMQ6, and hence, iii) that there is external market failure here at point 5, and therefore, there are external expansion and contraction consequences associated with internal market failure dynamics in terms of positive and negative impacts on the environmental pollution production problem associated with traditional markets.

Implication 2:

Green market expansions and contractions and traditional market expansions and contractions may or may not affect the environmental pollution production problem separating them, and there is a direct link between environmental pollution production problem dynamics and traditional market sustainability gap dynamics or problem as traditional market failure dynamics change.

c) The link between contractions and expansions and expected government action

We can use Figure 2 above to link expected government intervention or action to the expansion and contractions highlighted there; and the nature of this expected government action varies depending: i) on whether we are talking about green market paradigms or environmentally

responsible behavior based expansion and contractions or traditional market paradigms or behavior based expansions and contractions; ii) on whether we are talking about internal market failure or external market failure in each of those markets; iii) on whether we are talking about internal market failure corrections or external market failure corrections; and iv) on whether we are talking about a world under environmental pollution production neutrality assumptions or no environmental pollution neutrality assumptions. And the need to link and understand the implications of these contractions and expansions to expected government action and its links, negative or positive, to the environmental pollution production problem in simple terms makes the following question relevant: How can the green market paradigm-traditional market paradigm based sustainability framework be stated and used to provide an overview of the expected government monitoring and support role in world driven by environmentally responsible and environmentally irresponsible market behavior under environmental pollution production neutrality and no neutrality assumptions. And the main goal of this paper is to show step by step how this framework can be expanded and used to provide an overview of expected government action in the face of environmentally responsible and environmentally irresponsible market dynamics under environmental pollution production neutrality assumptions and under no environmental pollution production neutrality assumptions.

Goals of this paper

i) To expand the framework in Figure 2 to point out the expected response to market failure dynamics in both green markets and traditional markets to correct them; ii) To stress the expected government actions when dealing with green market dynamics under no environmental pollution production neutrality assumptions; iii) To highlight the expected government actions when dealing with traditional market dynamics under no environmental pollution production neutrality assumptions; iv) To point out the expected government actions when dealing with green market dynamics under environmental pollution production neutrality assumptions; v) To indicate the expected government actions when dealing with traditional market dynamics under environmental pollution production neutrality assumptions; vi) To indicate the green market paradigm(GM)-traditional market paradigm(TM) based sustainability framework under no internal market failure, but under external market failure; vii) To state the green market paradigm(GM)-traditional market paradigm(TM) based sustainability framework under expansion and relevant implications when under no internal market failure, but under external market failure.; viii) To show the green market paradigm(GM)-traditional market paradigm(TM) based sustainability framework under no internal market failure, but under external market failure: the case when paradigms are under no environmental pollution production externality neutrality assumption and their respective expected government action; ix) To share the green market paradigm(GM)-traditional market paradigm(TM) based sustainability framework under no internal market failure, but under external market failure: the case when paradigms are under environmental pollution production externality neutrality assumption and their respective expected government action; x) To represent the working of green market paradigms and traditional market paradigms and unsustainability limits using the green market paradigm-traditional market paradigm based sustainability framework.

Methodology

1) The terminology used in this paper and key concept are provided; 2) The framework in Figure 2 above is expanded to point out the expected responses to market failure dynamics in both green market paradigms and traditional market paradigms to correct them; 3) The expected government actions when dealing with green market dynamics under no environmental pollution production neutrality assumptions are indicated; 4) The expected government actions when dealing with traditional market dynamics under no environmental pollution production neutrality assumptions are pointed out; 5) The expected government actions when dealing with green market dynamics under environmental pollution production neutrality assumptions are shared; 6) The expected government actions when dealing with traditional market dynamics under environmental pollution production neutrality assumptions are highlighted; 7) The green market paradigm(GM)-traditional market(TM) based sustainability framework under no internal market failure, but under external market failure is stated; 8) The green market (GM)-traditional market (TM) based sustainability framework under expansion and relevant implications when under no internal market failure, but under external market failure is shared; 9) The green market paradigm(GM)-traditional market paradigm(TM) based sustainability framework under no internal market failure, but under external market failure: the case when paradigms are under no environmental pollution production externality neutrality assumption and their respective expected government action is stressed; 10) The green market paradigm(GM)-traditional market paradigm(TM) based sustainability framework under no internal market failure, but under external market failure: the case when paradigms are under environmental pollution production externality neutrality assumption and their respective expected government action is presented; 11) The working of green market paradigms and traditional market paradigms and unsustainability limits using the green market paradigm-traditional market paradigm based sustainability framework is demonstrated; and finally, 12) Some food for thoughts and relevant conclusions are provided.

Terminology

GM = Green market paradigm GMS = Green market supply

TM = Traditional market paradigm TMS = Traditional market supply

GMP = Green market price TMP = Traditional market price

EPOPP = Environmental pollution production problem

NEPOPP = No environmental pollution production problem

TMPSP = Traditional market paradigm sustainability problem SG = Sustainability gap

ESG = Environmental sustainability gap

P = Paradigm/market price Q = Paradigm/market quantity produced/consumed

D = Paradigm/market demand MS = Paradigm/market supply

GMPi = Green market price "i" GMQi = Green market quantity "i"

TMPi = Traditional market price "i" TMQi = Traditional market quantity "i"

YS = Yellow sustainability TS = True sustainability

S = Sustainability FUS = Full unsustainability

EM = Environmental margin ECM = Economic margin

SM = Social margin i = Profits

Relevant concepts

1) Golden paradigm, *a world without abnormalities embedded in it.*

2) Flawed paradigm, *a world with abnormalities embedded in it.*

3) Pollution production problem, *the situation created when flawed paradigms externalize non-dominant component issues.*

4) Sustainability, *the world under full cost internalization.*

5) Market expansion, *an increase in market activity.*

6) Market contraction, *a decrease in market activity.*

7) Government intervention, *the action taken to address market failures.*

8) Market failure, *the situation created by internally and/or externally distorted market prices.*

9) Internal market failure, *the situation created by internally distorted market prices.*

10) External market failure, *the situation created by externally distorted market prices.*

11) Optimal expansion, *an increase in optimal economic activity, an efficient expansion*

12) Non-optimal expansion, *an increase in non-optimal economic activity. an inefficient expansion*

13) Externality neutrality assumption, *markets can expand for ever without generating externalities or pollution production problems, it allows you to ignore the presence and the need for action in the face of real pollution production problems by just assuming them away.*

14) No externality neutrality assumption, *markets cannot expand for ever as they generate externalities as they expand, which accumulate through time to a point that they can lead either to paradigm collapse if left alone or vertical paradigm shift if the governments plays its overseer role properly, it does not allow you to ignore the present and the need for action in the face of real pollution production problems as you can no or you can no longer assume them away.*

15) Distorted market prices, *prices that deviate from optimal market prices due to endogenous and/or exogenous issues.*

16) Traditional markets, *markets with socio-environmental abnormalities, which are assumed away.*

17) True sustainability markets, *markets without socio-environmental abnormalities as here they are endogenous issues in a full codependent state based paradigm.*

18) Traditional market price, *the one that reflects only economic cost of production at a profit.*

19) True sustainability market price*, the one that reflects economic, social, and environmental cost of production at a profit.*

20) Green markets, *markets without environmental abnormalities as here they are endogenous issues in a full codependent state based paradigm.*

21) Green market price, *the one that reflects economic and environmental cost of production at a profit.*

Expected corrections to internal market failures and external market failure dynamics in both green market and traditional market paradigms

We should expect the following actions to maintain the levels of economic activity they want to maintain and correct internal and external market failures in both green markets and traditional markets that make economic activity to deviate from the chosen level as indicated in Figure 3 below:

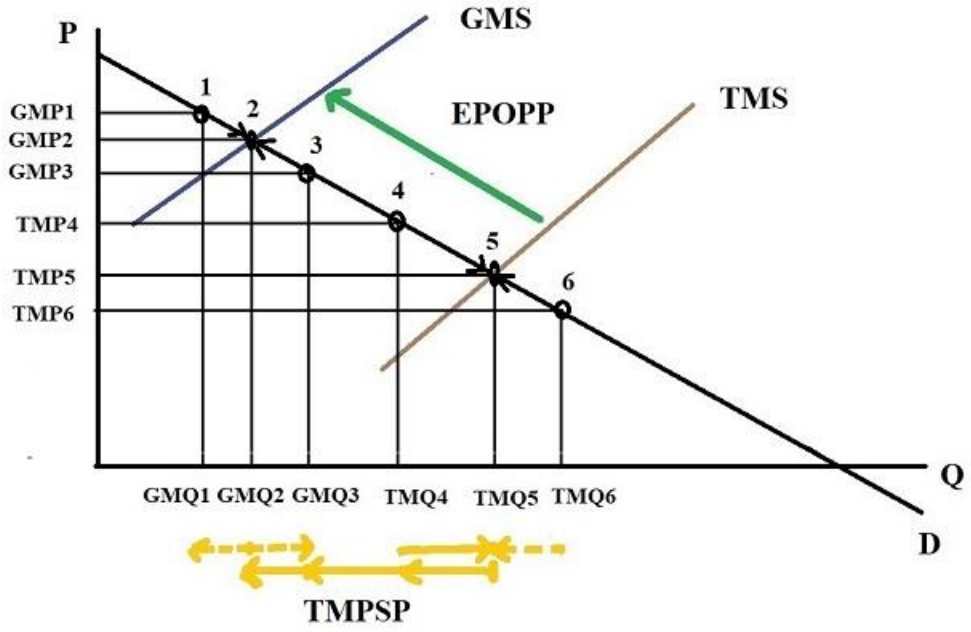

Figure 3 Green markets(GM) and traditional markets(TM) under expansions and contractions and the traditional market paradigm sustainability problem(TMPSP) and the expected government response to internal and external market dynamics

Let's assume that point 2 in Figure 3 above represents the level of activity the government wants to maintain in the case of the green market, where point 1 and point 3 are points of internal market failure and point 2 does not have an external market failures as green market paradigms are in a optimal conjunctural path since environmental issues are endogenous issues here, and that point 5 represents the level of economic activity the government wants to maintain in the case of the traditional market, where point 4 and point 6 are points of market failure and point 5 is a point of external market failure and economic component specific optimality. And notice that green markets and traditional markets are separated by the environmental pollution production problem EPOPP or the traditional market paradigm pollution production sustainability problem (TMPSP). Then Figure 3 above reflects the actions that the government can take to correct both internal and external market failures; and it also indicates the impacts these actions may or may not have on the environmental pollution production problem (EPOPP) reducing it or expanding it.

Implication 3:

There is an expectation that governments will take action to address internal and external market failures in green market paradigms and traditional market paradigms as it is its duty to fix market failures so economies are run efficiently.

The expected government actions when dealing with green market paradigm dynamics under no environmental pollution production neutrality assumptions

The internal market failure and the no external market failure situation under no environmental pollution production neutrality assumptions for green markets is summarized as done in Figure 4 below:

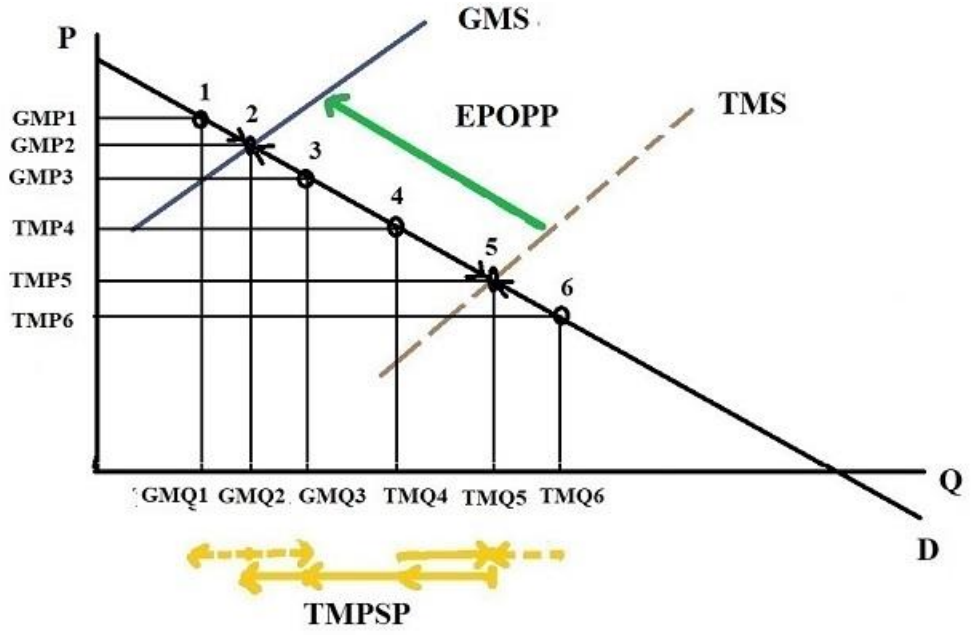

Figure 4 The expected government actions in green market paradigms (GM) under no environmental pollution production neutrality assumptions and internal market failures. Notice that here there are no external environmental market failures.

Point 2 in Figure 4 above is the point of green market optimality the government is trying to ensure and the arrows from point 1 to point 2 and from point 3 to point 2 are the optimal green actions the government is expected to take to ensure an optimal green expansion from point 1 to point 2 and an optimal green contraction from point 3 to point 2, both actions needed to correct specific types of internal market failure in green markets. Notice that both of those government actions do not affect the environmental pollution production problem (EPOPP) which is real as indicated by the continous green arrow going from TMS to GMS as optimal green market paradigms do not have environmental externality producing problems as environmental externalities here are endogenous issues so internal market failures or not, green market paradigms do not have an environmental pollution production sustainability problem. Hence, the no environmental pollution production neutrality assumption does not affect the green market paradigm internal market failure dynamics as no environmental externality issues are created, and since it does not have external market failures, then the no environmental pollution neutrality assumption is irrelevant here.

The following information can be highlighted based on Figure 4 above under no environmental pollution neutrality assumptions in the case when the government is addressing market failures in the green market paradigm GM such as those at point 2: i) the government will correct the market failure at point 1 by supporting an expansion of optimal green production and consumption from point 1 to point 2 , and ii) the government will correct the market failure at point 3 by supporting a contraction of optimal green production and consumption from point 3

to point 2, both actions having no impact on the environmental pollution production problem EPOPP as they do not create environmental pollution production problems, which again makes the assumption "working under no environmental pollution production neutrality assumptions" irrelevant as indicated by the broken yellow arrows going from GMQ2 to GMQ1 and from GMQ2 to GMQ3.

Implication 4:

The government will address internal market failures in green market paradigms by supporting optimal green expansions and optimal green contractions to maintain the optimal level of green production and green consumption desired for the green market paradigm. Even though the no environmental pollution production neutrality assumption makes the issue real, the assumption is irrelevant here since green market paradigms do not have an environmental pollution production problem as their dynamics follows an optimal green path.

The expected government actions when dealing with traditional market paradigm dynamics under no environmental pollution production neutrality assumptions meaning that the environmental pollution production problem is real

The internal market failure and the external market failure situation under no environmental pollution production neutrality assumptions for traditional market paradigms which makes the environmental pollution production problem EPOPP linked to the traditional market paradigm is real is indicated in Figure 5 below:

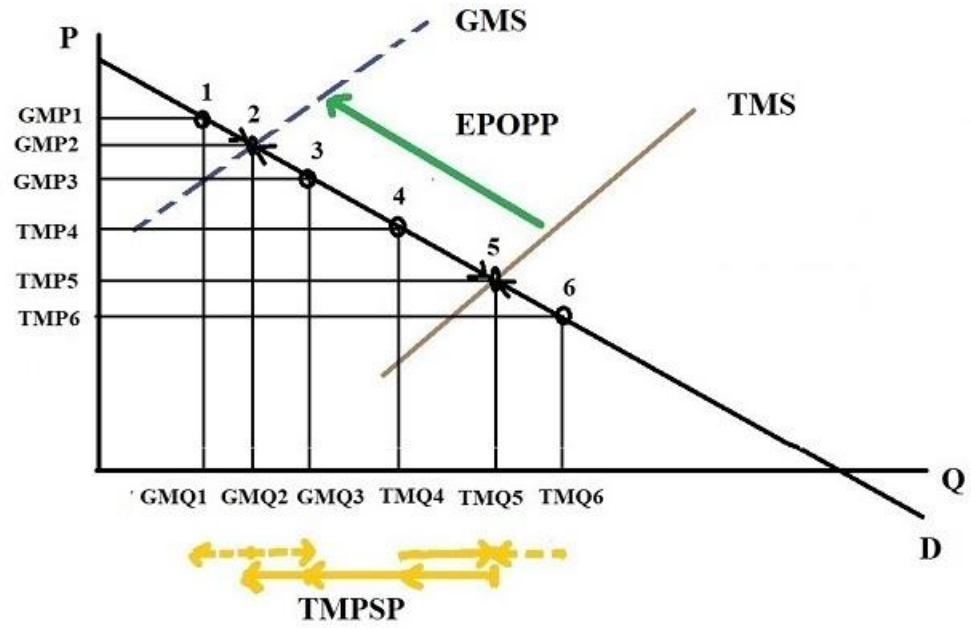

Figure 5 Expected government actions in traditional market paradigms(TM) when under no environmental pollution production neutrality assumptions and internal market failures. Notice that here there are external environmental market failures that need to be addressed.

Point 5 in Figure 5 above is the point of traditional market paradigm optimality the government is trying to ensure that economic activity stays at point 5, and the arrows from point 4 to point 5 and from point 6 to point 5 are the actions the government is expected to take to ensure that production and consumption continues at point 5 level, an expansion from point 4 to point 5 and a contraction from point 6 to point 5, both actions needed to correct specific types of internal market failure in traditional market paradigms. Notice that both of those government actions have different impacts on the environmental pollution production problem, which is real as indicated by the continues green arrow going from TMS to GMS, as here a government action that expands market activity expands the environmental pollution production problem as indicated by the continues yellow arrow going from TMQ4 to TMQ5; and a government action that contracts market activity contracts the environmental pollution production problem, which is real as indicated by the broken yellow arrow going from TMQ6 to TMQ5. Notice too in Figure 5 above that since the environmental pollution production problem EPOPP at point 5 is real because there is an external market failure there, it needs to be addressed by the government by closing the traditional market paradigm sustainability problem TMPSP as indicated by the continuous yellow arrow that goes from point 5 to point 2; and see that the expected government action is to fix the traditional market paradigm environmental pollution production fully by internalizing the environmental pollution production problem and transform the environmental pollution production point 5 into the environmental pollution productionless point 2 as the continuous yellow arrow that goes from point 5 to point 2 shows. In other words, as the external market failure in Figure 5 above is real and the environmental pollution production problem is real, the government cannot ignore it and it must fully fix the external environmental market failure.

The following information can be pointed out based on Figure 5 above under no environmental pollution neutrality assumptions in the case when the government is addressing market failures in the traditional market paradigm TM and the environmental pollution problem being created is taken as real such as those at point 5: i) the government will correct the market failure at point 4 by supporting an expansion of production and consumption from point 4 to point 5 expanding the environmental pollution production problem as it is a real problem here , and ii) the government will correct the market failure at point 6 by supporting a contraction of production and consumption from point 6 to point 5 reducing the real environmental pollution production problem, and therefore, both actions have different impacts on the environmental pollution production problem EPOPP that is real here, as it is working under no environmental pollution production neutrality assumptions which makes environmental pollution production a real problem as indicated by the continuous yellow arrow going from TMQ4 to TMQ5 and by the broken yellow arrows going from TMQ6 to TMQ5, respectively.

Implication 5:

The government will address internal market failures in traditional market paradigms by supporting market expansions and contractions to maintain the optimal level of production and consumption desired for the traditional market paradigm while having real positive impacts and negative impacts on the environmental pollution production problem linked to the traditional market paradigm, positive when government action contracts the traditional market paradigm and negative when the action expands economic activity. And the government will address fully

the traditional market paradigm sustainability problem or the environmental pollution production problem as it is real and it cannot be assumed away, and when doing so it will shift the traditional market paradigm world to a green market paradigm based world.

The expected government actions when dealing with green market paradigm dynamics under environmental pollution production neutrality assumptions, where the environmental pollution production problem is real but it is assumed away

The internal market failure and the no external market failure situations under environmental pollution production neutrality assumptions for green market (GM) dynamics are summarized as done in Figure 6 below:

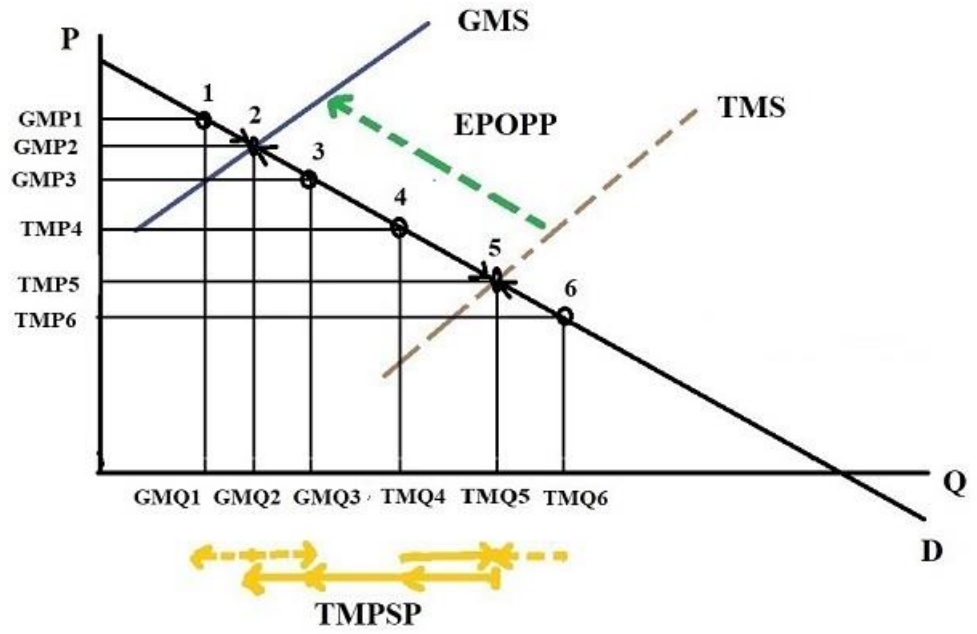

Figure 6 Expected government actions in green market paradigms (GM) under environmental pollution production neutrality assumptions and internal market failures. Notice that here too there are no external environmental market failures to be addressed

Point 2 in Figure 6 above is the point of optimal green market optimality the government is trying to ensure and the arrows from point 1 to point 2 and from point 3 to point 2 are the optimal green actions the government is expected to take to ensure an optimal green expansion from point 1 to point 2 and an optimal green contraction from point 3 to point 2, both actions needed to correct specific types of internal market failure in green market paradigms. Notice that both of those government actions do not affect the environmental pollution production problem EPOPP which is real by it is assumed away as indicated by the broken green arrow going from TMS to GMS as optimal green market paradigms do not have environmental externality problems as environmental externalities here are endogenous issues so internal market failures or not, green market paradigms do not have an environmental pollution production sustainability problem. Therefore, the environmental pollution production neutrality assumption does not

affect the green market paradigm internal market failure dynamics; and since it does not have external market failures, the environmental pollution neutrality assumption is again irrelevant here.

The following information can be highlighted based on Figure 6 above under environmental pollution production neutrality assumptions when the environmental pollution problem is real in the case when the government is addressing market failures in the green market paradigm GM such as those at point 2: i) the government will correct the market failure at point 1 by supporting an expansion of optimal green production and consumption from point 1 to point 2 , and ii) the government will correct the market failure at point 3 by supporting a contraction of optimal green production and consumption from point 3 to point 2, both actions having no impact on the environmental pollution production problem EPOPP as it does not produces environmental externalities making the "working under pollution production neutrality assumptions" irrelevant as indicated by the broken yellow arrows going from GMQ2 to GMQ1 and from GMQ2 to GMQ3.

Implication 6:

The government will address internal market failures in green market paradigms by supporting optimal green expansions and optimal green contractions to maintain the optimal level of green production and consumption desired for the green market paradigm. Even though the environmental pollution production neutrality assumption assumes away a real pollution production issue, the assumption is irrelevant here as green market paradigms do not have an environmental pollution production problem as their behavior follows optimal green dynamics.

The expected government actions when dealing with traditional market paradigm dynamics under environmental pollution production neutrality assumptions: here the environmental pollution production problem is real but it is assumed away

The internal market failure and the external market failure situation under environmental pollution production neutrality assumptions for traditional market paradigms TM when the environmental pollution production problem linked to the traditional market paradigm is real, but assumed away is indicated in Figure 7 below:

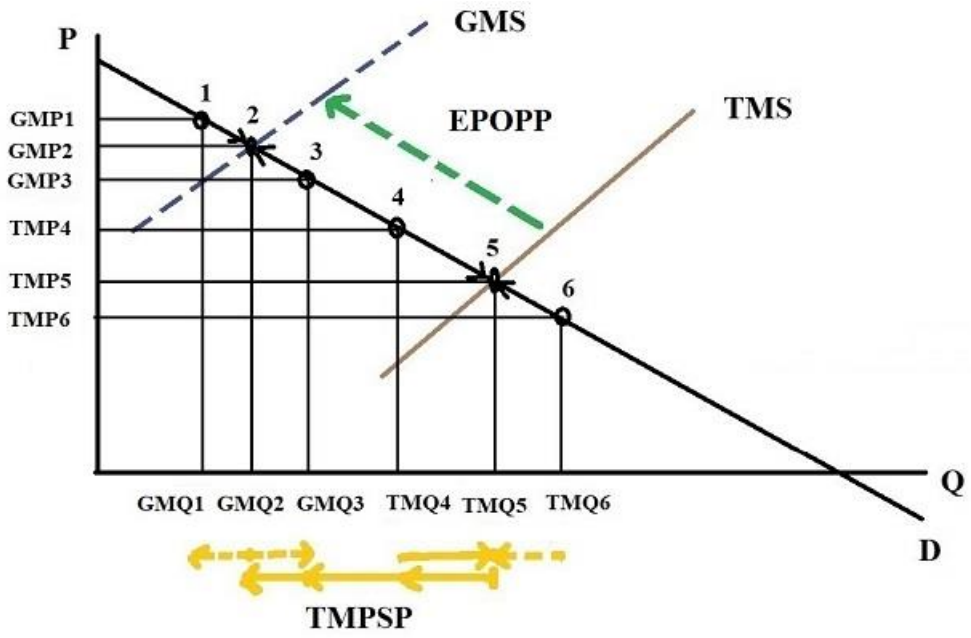

Figure 7 The expected government actions in traditional markets(TM) under environmental pollution production neutrality assumptions and internal market failures that expand or contract environmental pollution production, but they are assumed away. Notice that here too there are external environmental market failures but they are assumed away

Point 5 in Figure 7 above is the point of traditional market optimality the government is trying to ensure and the arrows from point 4 to point 5 and from point 6 to point 5 are the actions the government is expected to take to ensure that production and consumption stay at point 5 level, an expansion from point 4 to point 5 and a contraction from point 6 to point 5, both actions needed to correct specific types of internal market failure in traditional market paradigms. Notice that both of those government actions have different impacts on the environmental pollution production problem EPOPP, which is real but assumed away as indicated by the broken green arrow going from TMS to GMS, as here a government action that expands market economic activity expands the environmental pollution production problem, but it is assumed away as indicated by the continues yellow arrow going from TMQ4 to TMQ5; and a government action that contracts market activity contracts the environmental pollution production problem too, and this impact is real, but this real impact is assumed away too as indicated by the broken yellow arrow going from TMQ6 to TMQ5. Notice too in Figure 7 above that since the environmental pollution production problem EPOPP at point 5 is real because there is an external environmental market failure there, then the traditional market paradigm sustainability problem TMPSP is also real as indicated by the continuous yellow arrow going from TMQ5 to TMQ2, but both issues are assumed away, and hence, even thought there is a real need to fix those environmental problems the government will not fix the external market failure at point 5 since the environmental pollution problem is assumed away too, then the government need to fix it is also assumed away, if you assume a real problem away you do not have to take action to fix it.

The following information can be pointed out based on Figure 7 above under environmental pollution neutrality assumptions when the environmental pollution problems are real in the case when the government is addressing market failures in the traditional market world TM such as those at point 5: i) the government will correct the market failure at point 4 by

supporting an expansion of production and consumption from point 4 to point 5 expanding a real environmental pollution production problem, but this negative impact is assumed away , and ii) the government will correct the market failure at point 6 by supporting a contraction of production and consumption from point 6 to point 5 reducing the real environmental pollution production problem, a positive impact that is also being assume away, and therefore, both actions have different impacts on the environmental pollution production problem EPOPP that is real, but assumed away as it is working under environmental pollution production neutrality assumptions which means that any impacts on real problems can be assumed away as indicated by the continuous yellow arrow going from TMQ4 to TMQ5 and by the broken yellow arrows going from TMQ6 to TMQ5.

Implication 7:

The government will address internal market failures in traditional market paradigms by supporting market expansions and expansions to maintain the optimal level of production and consumption desired for the traditional market paradigm while having real positive impacts and negative impacts on the environmental pollution production problem linked to the traditional market paradigm, positive when government action contracts the traditional market paradigm and negative when the action expands economic activity, but these real impacts are assumed away. And the government will not address the traditional market paradigm sustainability problem or the environmental pollution production problem, which is real, but assumed away as if a real problem is assumed away the need for a solution for it can also be assumed away.

The green market paradigm (GM)-traditional market paradigm (TM) based sustainability framework under no internal market failure, but under external market failure

To understand expected government action when markets are working internally optimally but under external market failure the green market paradigm (GM)-traditional market paradigm (TM) based sustainability framework can be stated as shown in Figure 8 below:

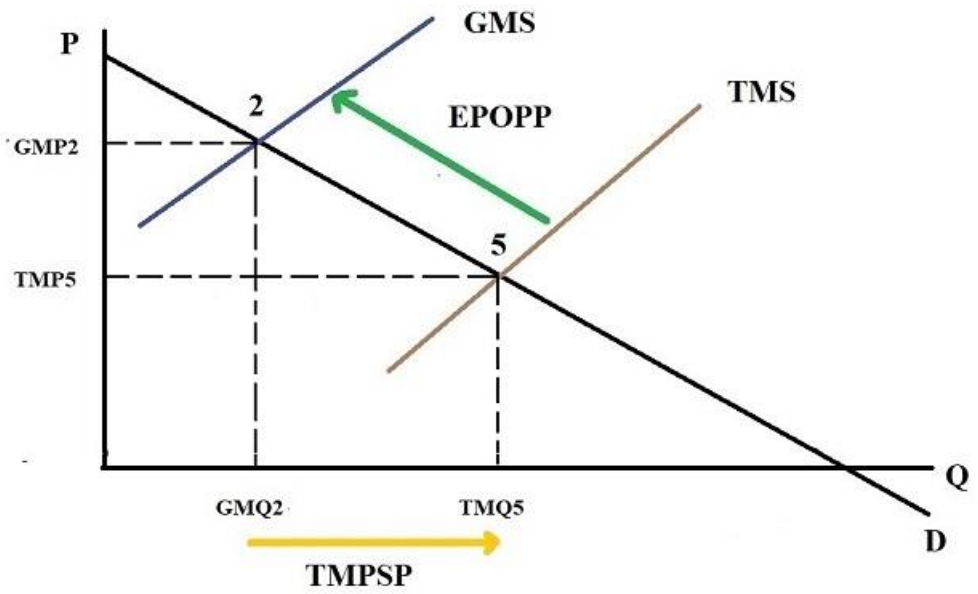

Figure 8 The gren market paradigm(GM)-Traditional market paradigm(TM) based sustainability framework under no internal market failures and under external market failures

We can appreciate the following aspects based on Figure 8 above: i) that at Point 2 we have a green market paradigm GM under no internal nor external market failure; ii) that at point 5 we have the traditional market paradigm TM under no internal market failure, but external market failure; iii) that there is an environmental pollution production problem EPOPP separating green market paradigms from traditional market paradigms; and iv) that there is a traditional market paradigm sustainability problem TMPSP or environmental pollution production problem affecting the working of the traditional market paradigm.

Implication 8:

The green market paradigm-traditional market paradigm based sustainability framework can be used to highlight the existence of environmental pollution production problems, sustainability problems and green market paradigm-traditional market paradigm knowledge gaps that need to be closed if the government fulfills its responsibilities and fix the external market failure embedded in traditional market paradigms.

The green market paradigm (GM)-traditional market paradigm (TM) based sustainability framework when under no internal market failure, but under external market failure: the case of paradigm expansions in green market paradigms and in traditional market paradigms

The idea of green market paradigm expansions and traditional market paradigm expansions under no internal market failure, but with external market failures can be summarized as done in Figure 9 below:

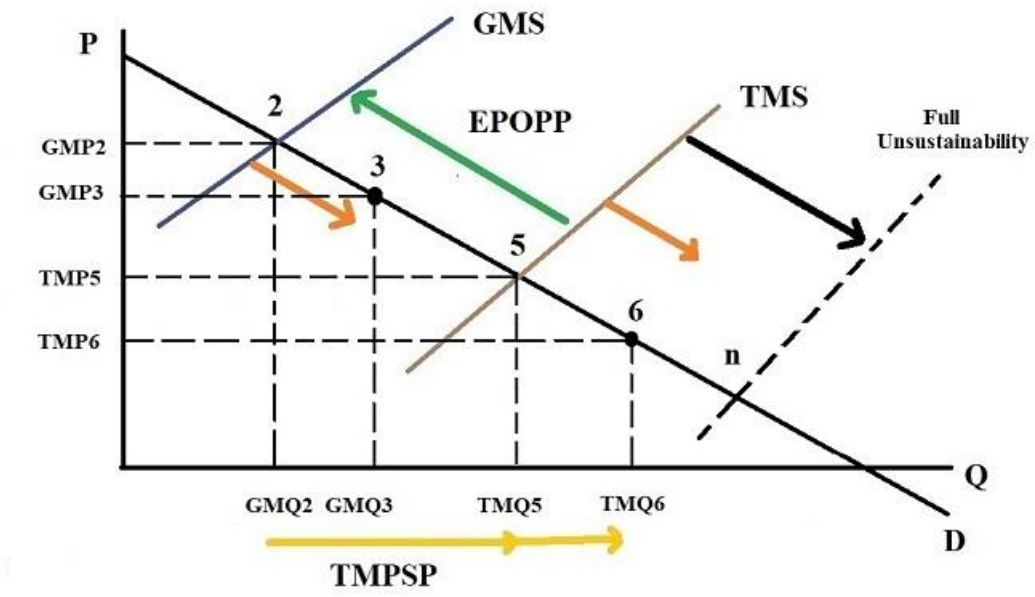

Figure 9 The green market paradigm(GM)-Traditional market paradigm(TM) based sustainability framework under no internal market failure and under external market failures. THE CASE OF MARKET EXPANSIONS AND THEIR IMPLICATIONS

Figure 9 above highlights the following: i) with respect to green market paradigms, there is an optimal green market expansion from point 2 to point 3, without creating environmental pollution production problems or environmental sustainability problems; and hence, green market paradigms expansions do not have environmental unsustainability limits such as point "n"; ii) with respect to traditional market paradigms, there is an expansion from point 5 to point 6 that expands the environmental pollution production problem EPOPP that exists from point 5 to point 2 by the distance from point 5 to point 6 as indicated by the continuous red arrow going from point 5 to point 6, and therefore, traditional market paradigms expansions have an environmental unsustainability limit such as point "n" as if it reaches there the traditional market paradigm will collapse and to save its core values it may shift vertically to a higher level paradigm just before collapse.

Implication 9:

Green market paradigms and traditional market paradigms expand from left to right, but green market paradigms have no environmental sustainability limits while traditional market paradigms has an environmental sustainability limit that lies before full unsustainability(FUN).

The green market paradigm (GM)-traditional market paradigm (TM) based sustainability framework under no internal market failure, but under external market failure: the case of paradigm expansions and their implications under no environmental pollution production neutrality assumption and respective expected government action

The expected government actions when environmental pollution production problems are real and they cannot be assumed away as there are no environmental pollution production neutrality assumptions is a situation that can be seen based on the information of Figure 10 below:

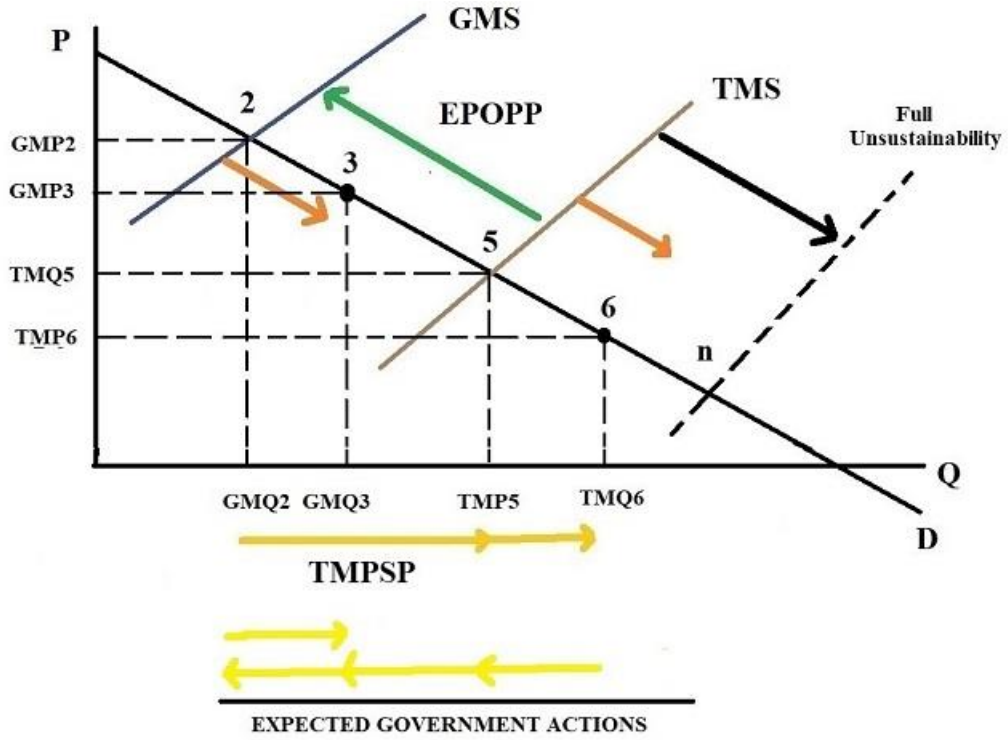

Figure 10 The green market paradigm(GM)-Traditional market paradigm(TM) based sustainability framework under no internal market failures and under external market failures. THE CASE OF MARKET EXPANSIONS AND THEIR IMPLICATIONS under envrironmental pollution production neutrality assumptions and expected government actions

We can see based on Figure 10 above that at point 3 the government has an optimal green market situation, which must be supported as you get a better optimal green market point without creating abnormalities; and at point 6 the government has a situation that must be discouraged as it makes the environmental pollution problem that exist from point 5 to point 2 worse. In other words, in the case of the expansion of green market paradigms from point 2 to point 3 we should expect the government to implement an optimal green support policy to help the green market paradigm to expand from point 2 to point 3 as producing and consuming at point 3 is a better optimal green option that producing and consuming at point 2 as the green market price at point 3 is lower than the green market price at point 2 so that GMP3 < GMP2 and GMQ3 > GMQ2. In the case of the expansion of the traditional market paradigm from point 5 to point 6 the government will have to discourage it as fixing the environmental pollution production problem is its role, not expanding it, and since under no externality neutrality assumption the environmental pollution production problem is real and it must be fixed then we should expect the government to take action to discourage new expansions like the one from point 5 to point 6 and we should expect the government to internalize the full environmental pollution production problem EPOPP to shift the traditional market paradigm from point 5 to point 2 after contracting

the traditional market paradigm from point 6 to point 5 or internalizing the environmental pollution production problem from point 6 to point 2 at once, saving the system from moving closer to full unsustainability. See that producing and consuming at point 2 is less than producing and consuming at point 5 and point 6 as GMQ2 < TMQ5 < TMQ6 and at point 2 there are no environmental unsustainability pressures anymore. The structure of a shift from perfect traditional markets to perfect green markets and how it works has been pointed out(Muñoz 2016).

Implication 10:

Under no externality neutrality assumptions or under real environmental pollution production problems that must be fixed government will see an optimal expansion in green market paradigms as actions that need to be supported as more is better there without creating environmental externality issues while the government will see, given their duty to fix market failures, the expansion of traditional market paradigms under external market failures as actions that not just need to be discouraged, but actions that would not take place if they fixed the environmental pollution production problem created by traditional market paradigms through full environmental pollution production problem internalization.

The green market paradigm (GM)-traditional market paradigm (TM) based sustainability framework under no internal market failure, but under external market failure: the case of paradigm expansions and their implications under environmental pollution production externality neutrality assumption when the environmental pollution production problem is real and respective expected government action

The expected government actions when the environmental pollution production problems are real, but assumed away when there are environmental pollution production neutrality assumptions can be appreciated based on the situation shared in Figure 11 below:

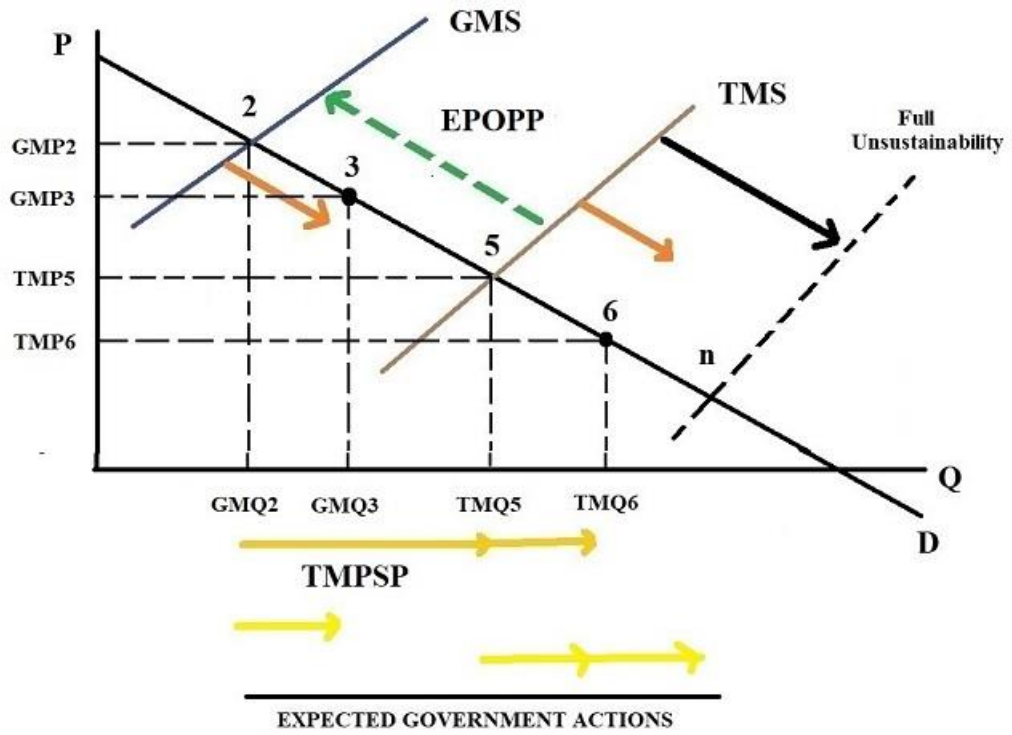

Figure 11 The green market paradigm(GM)-Traditional market paradigm(TM) based sustainability framework under no internal market failures and external market failures: THE CASE OF MARKET EXPANSIONS AND THEIR IMPLICATIONS under environmental pollution production neutrality assumptions and expected government actions

We can appreciate based on Figure 11 above that at point 3 the government has again an optimal green market situation, which must be supported again as you get a better optimal green market point without creating abnormalities; and at point 6 the government given the environmental pollution production neutrality assumption that assumes away a real environmental pollution production problem has a situation that it will support and which will make the environmental pollution production problem which is real worse, but it will assume this negative impact away. In other words, under the environmental pollution neutrality assumption when the environmental pollution production problem is real the government will support the expansion of the traditional market paradigm under external market failure instead of fixing the market failure and this is done assuming its negative role on irresponsible traditional market paradigm expansion fully away. In other words, in the case of the expansion of green market paradigms from point 2 to point 3 we should expect the government to implement an optimal green support policy to help the green market paradigm to expand from point 2 to point 3 as producing and consuming at point 3 is a better optimal green market option that producing and consuming at point 2 as the green market price at point 3 is lower than the green market price at point 2 so that GMP3 < GMP2 and GMQ3 > GMQ2. But in the case of the expansion of the traditional market paradigms from point 5 to point 6 the government will not discourage it, but support it despite its negative impact on the real environmental pollution production problem as under environmental pollution neutrality assumptions there is no problem for the government to encourage irresponsible traditional market behavior as real environmental problems are assumed away. And you can appreciate based on Figure 11 above too that if the government continues supporting traditional market expansions beyond point 6, instead of fixing the external market

failure under which the traditional market paradigm is working, the government is helping the traditional market paradigm to transition towards full unsustainability or towards point “n”.

Implication 11:

Under externality neutrality assumptions or under real environmental pollution production problems that must be fixed, but they are assumed away government will see an optimal green expansion in green market paradigms as actions that need to be supported as more is better there without creating environmental externality issues while the governments will see, given their duty to fix market failures is being assumed away, the expansion of traditional paradigms under external market failures as actions that not just need to be supported, but actions that need to be promoted as all the negative impacts those actions have on the real environmental pollution production problem can be assume away.

The working of green market paradigms and traditional market paradigms and unsustainability limits

If we see green market paradigms and traditional market paradigms as markets that tend to produce at the lowest cost possible, lowest green market price possible. and lowest traditional market price possible, respectively, then we will see them expand from left to right as shown in Figure 12 below:

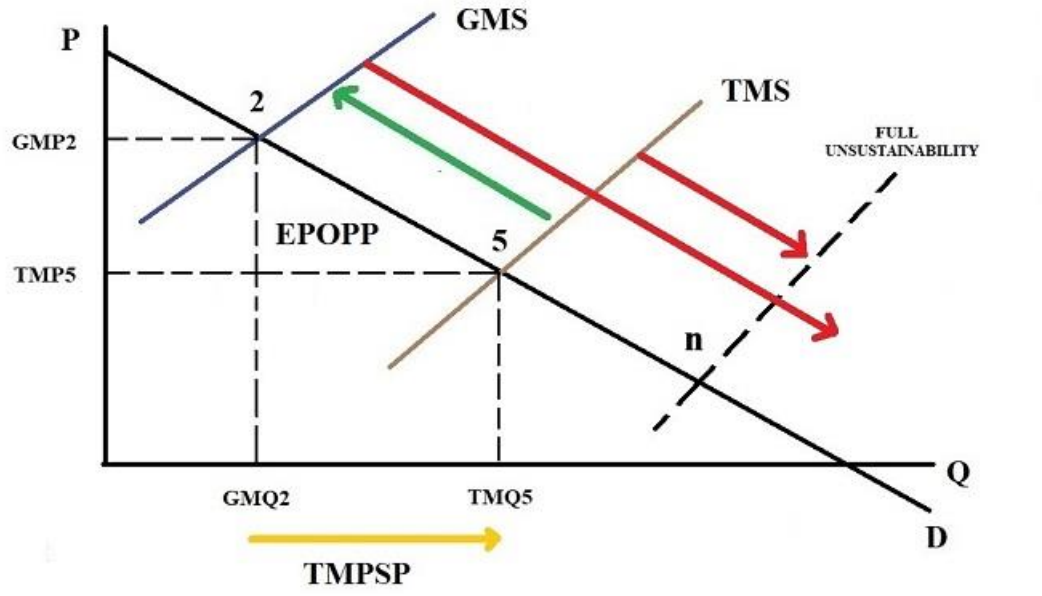

Figure 12 The green market paradigm(GM)-Traditional market paradigm(TM) based sustainability framework under no internal market failure and external market failure: Both markets expand to produce at the lowest market price possible, but the traditional market paradigms has environmental limits to growth while the green market paradigm does not have.

Notice that Figure 12 above depicts a situation in which green market paradigms expands left to right as they tend to produce at the lowest green market price possible and they have no limits to growth as they have no environmental sustainability problems as shown by the continuous red arrow going from point 2/GMS passing the full unsustainability zone. Then see that the expansion of traditional market paradigms under external market failures as shown in Figure 12 goes also from left to right as it tends to produce too at the lowest traditional market prices possible, but it has limits to growth as indicated by the red arrow going from point 5/TMS to before the full unsustainability line or broken supply at point "n".

Implication 12:

Both green market paradigms and traditional market paradigms tend to produce at the lowest price possible, but while green market paradigms have no limits to growth, traditional market paradigms have environmental limits to growth. Since the government knowingly or not due to the environmental pollution production neutrality assumptions under which it looks at market failures is helping the traditional market paradigms to approach full unsustainability as real environmental pollution production problems are being expanded and accumulated, and hence, the traditional market paradigm sooner or later will tend towards collapse as it approaches full environmental unsustainability, and if the opportunity comes the traditional market paradigm will evolve vertically towards green market paradigms leaving the knowledge base of the traditional market paradigm behind while carrying the core values of the traditional market paradigm, economic responsibility, to the new paradigm so the new paradigm reflects the previous traditional market paradigm's core values of economic responsibility. This idea of the vertical paradigm evolution route available under binding externality pressures, such as binding environmental externality pressures, when paradigms leave their knowledge base behind to save their core values in the case of traditional market paradigms like the deep capitalism market or deep economy have been recently pointed out(Muñoz 2025).

Food for thoughts

1) In free markets and no knowledge gaps, is it the duty of governments to fix environmental market failures or to patch them/manage the consequences of the failure? I think the duty is to fix them, what do you think?; 2) In free markets and no externality neutrality assumptions and no knowledge gaps, is it the duty of governments to fix environmental market failures or to patch them/manage the consequences of the failure? I think the duty is to fix them, what do you think?; 3) In free markets and externality neutrality assumptions when the environmental externality production problem linked to the working of free markets is real, does government's market expansion policies helps promote irresponsible environmental market behavior; and hence, it has a supporting role in driving free markets towards the point of environmental system unsustainability but it is assumed away? I think yes, what do you think?; and 4) When you shift from free markets like free traditional markets to free markets like green markets do the responsibility for market failure like environmental market failure still falls on corporations/consumers? I think yes, what do you think?

Conclusions

It was shown that the green market paradigm-traditional market paradigm based sustainability framework can be used for understanding market failures in both green market paradigms and in traditional market paradigms, be it internal market failures or external market failures or both. It was pointed out how these market failures can expand or contract as well as how reversing expansion and contractions can be linked to expected government actions. Then it was indicated that under no environmental externality neutrality assumptions governments should be expected to do the right thing, to fix green market paradigm expansions and contractions to maintain desirable levels of green market paradigm based economic activity, and governments are expected to fix expansion and contractions led by internal traditional market paradigm failures as well and to fix the external market failures of traditional market paradigms as environmental pollution production problems here are real and they cannot be assumed away, and since the primary responsibility of governments is to fix market failures they are expected to fully fix this external market failure.

Then it was stressed that under environmental externality neutrality assumptions the government will treat green true market paradigm based expansions and contractions the same way as without environmental pollution production externality assumptions, they will be optimally fixed/supported while under environmental pollution production externality assumptions governments will support irresponsible traditional market paradigms expansion helping them to approach the full unsustainability zone as they assume that the real environmental pollution production problem which they are helping to expand can be assumed away. And finally, it was described how both green market paradigm and traditional market paradigms expands following the path of the lowest market price possible, but traditional market paradigms have environmental limits to growth while green market paradigms do not have environmental limits to growth.

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