Citation:

Muñoz, Lucio, 2022. **Sustainability thought 165: How can we show that the overpopulation framework a la ecological overshoot is a subset of the most distorted market price possible framework? What are the main implications of this?,** In: ***Sarcouncil Journal of Arts Humanities and Social Sciences(SJAHSS),*** Vol. 01, Issue 06, August 23, Pp 1-7. ISSN: 2945-3488, Philippines. https://doi.org/10.5281/zenodo.15725184

Sustainability thought 165: How can we show that the overpopulation framework a la ecological overshoot is a subset of the most distorted market price possible framework? What are the main implications of this?

By

Lucio Muñoz*

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

Abstract

Under the most distorted market price possible way of thinking you can link the most distorted impacts on system stability to most distorted populations dynamics possible and their extreme overshooting behavior. Hence here the root cause of the most distorted system stability problems is the most distorted market price. Overpopulation dynamics-environmental problems frameworks like the ecological overshoot idea work only under market structure neutrality assumptions as without them they are part of the most distorted price possible framework. Under market structure independence, the root cause of environmental problems is over population dynamics driving the ecological overshoot. And this raises relevant questions like how can we show that the overpopulation framework a la ecological overshoot is a subset of the most distorted market price possible framework? What are the main implications of this? Among the goals of this paper is to provide answers to the questions listed above.

Key words

Most distorted market structure, most distorted market price, most distorted production, most distorted consumption, most distorted population dynamics, extreme overshoot, no

overshoot, most distorted system stability, climate change, environmental problems, overpopulation, over consumption, over production.

Introduction

a) The most distorted market structure-most distorted population dynamics-most distorted system stability framework(MDMP-MDT-MDR framework)

Cost externalization leads and sustains a world of to distorted market prices(Muñoz 2020), and the market price that maximizes cost externalization becomes the most distorted market price as it becomes the lowest market price possible. This idea has been recently used to state the structure of the most distorted market structure, the most distorted population dynamics, and the most distorted system stability framework(MDM-MDT-MDR framework) (Muñoz 2022), as indicated in Figure 2 below:

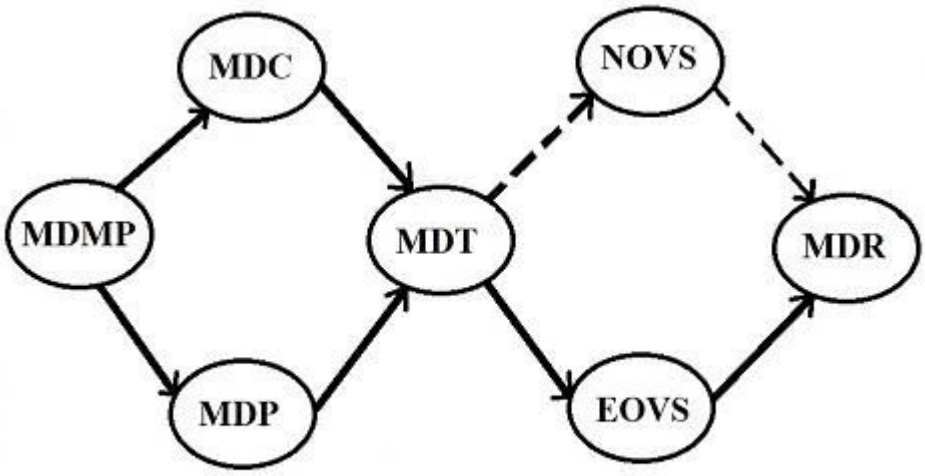

Figure 1 The most distorted market structure-the most distorted population dynamics and the most distorted system stability framework(MDM-MDT-MDR framework)

We can see based on Figure 1 above that the most distorted market price MDMP has the most distorted system stability impact on consumption(MDC), production(MDP), and population dynamics(MDT), which leads to extreme overshooting behavior(EOVS); and hence, it leads to the most distorted system stability conditions MDR as indicated by the continuous arrow from EOVS to MDR. We can appreciate now that in this most distorted system stability framework the root cause of the most distorted system stability impacts MDR is the most distorted market price MDMP while the most distorted consumption MDC, the most distorted production MDP, and the most distorted population dynamics MDT are consequences of the most distorted market price MDMP. Moreover, you can also notice based on Figure 1 above that the most distorted nature of the market structure(MDMP, MDC, MDP) shapes the most distorted nature of population dynamics(MDT).

Expectation 1:

If the most distorted market price among the distorted market prices possible is in place the most distorted system stability conditions will come to exist as there will be extreme overshooting behavior driven by the most distorted population behavior. In this context, the best policy response to address the most distorted system stability issue is to deal with the root cause and its consequences at the same time.

b) The overpopulation dynamics-environmental problems framework(OVT-EP) a la ecological overshoot.

The overpopulation dynamics and environmental problems framework a la ecological overshoot(Rees 2022) centers on the premises a) that the root cause of environmental problems is the overpopulation problem; and therefore, b) without addressing the population problem we cannot address the extreme ecological overshoot pressures affecting the environmental problems. Hence, the ecological overshoot idea works independently of the market structure that supports the needs and wants of the overshooting population.

c) The link most distorted population dynamics and over population dynamics

If we take the long term view that the most distorted market structure possible will lead to the most distorted population dynamics possible in the form of over population dynamics; and that the most distorted system stability possible pushed by extreme overshooting behavior is the environmental problem, then the ecological overshoot idea mentioned above becomes part of the most distorted market possible idea, which affects both policy and system stability thinking. Markets may have been distorted since Adam Smith's days(Muñoz 2010) when he shared with us the theory of the perfect market(Smith 1776), a distortion the academic community is trying now to correct(Muñoz 2012). Hence, the discussion above raises relevant questions like how can we show that the overpopulation framework a la ecological overshoot is a subset of the most distorted market price possible framework? What are the main implications of this? Among the goals of this paper is to provide answers to the questions listed above.

Goals of this paper

a) To link the structure of the most distorted market-most distorted population-most distorted system stability framework(MDM-MDT-MDR) with the overpopulation dynamics-environmental problems framework(OVT-EP) to generate the MDM-OVT-EP framework; b) to stress that placing the structure of the most distorted market-over population dynamics-environmental problem framework(MDM-OVT-EP) under market structure neutrality assumptions leads to the overpopulation dynamics-environmental problems framework(OVT-

EP) a la ecological overshoot; and c) to point out the structure of the overpopulation dynamics-environmental problems framework(OVT-EP) a la ecological overshoot.

Methodology

First, the terminology, some operational concepts and merging rules are shared. Second, the structure of the most distorted market-most distorted population-most distorted system stability framework(MDM-MDT-MDR) is linked to over consumption(OVC), over production(OVP), over population(OVT) and environmental problems(EP) to arrived at the most distorted market structure-over population dynamics-environmental problems framework(MDM-OVT-EP framework). Third, the structure of the most distorted market-over population dynamics-environmental problems framework(MDM-OVT-EP) is placed under market structure neutrality assumptions to detach the overpopulation dynamics-environmental problems framework(OVT-EP) a la ecological overshoot. Fourth, the structure of the overpopulation dynamics-environmental problems framework(OVT-EP) a la ecological overshoot and its characteristics are highlighted. And finally, some food for thoughts and relevant conclusions are provided.

Terminology

M = Market structure dynamics T = Population dynamics

R = System stability MP = Market price

C = Consumption P = Production

OVS = Overshoot NOVS = No overshoot

A = Dominant / active component a = Dominated / passive component

M-R framework T-R framework

M-T-R framework TM = Traditional market price

OMP = Optimal market price DMP = Distorted market price

MDMP = Worse distorted market price OC = Optimal consumption

MDC = Most distorted consumption OP = Optimal production

DP = Distorted production MDP = Most distorted production

OT = Optimal population dynamics DT = Distorted population dynamics

MDT = Most distorted population dynamics OR = Optimal system stability

DR = Distorted system stability MDR = most distorted system stability

EP = Environmental problems OVC = Overconsumption

OVP = Over production OVT = Over population

OM-OT-OR framework DM-DT-DR framework

DC = Distorted consumption MDM-MDT-MDR framework

OVT-EP = Overpopulation and system stability framework a la ecological overshoot framework

MDM-OVT-EP framework = MDMP-OVT-EP framework

Operational concepts and merging rules

<u>i) Operational concepts</u>

1) Responsible market price, a *price that reflects all the cost of production*

2) Irresponsible market price, *a price that does not reflect all the cost of production*

3) Responsible population behavior, *one that lives under the carrying capacity of the system so it does not overshoot*

4) Irresponsible population behavior, *one that goes over the carrying capacity of the system so it overshoots.*

5) Responsible production, *the one driven by a responsible market price*

6) Irresponsible production, *the one led by an irresponsible market price*

7) Responsible consumption, *the one driven by a responsible market price*

8) Irresponsible consumption, *the one led by an irresponsible market price*

9) Right market price, *a responsible market price*

10) Distorted market price, *an irresponsible market price*

11) Wrong market price, *a distorted market price*

12) Right production, *a responsible production level*

13) Wrong production*, an irresponsible production level*

14) Right consumption, *a responsible consumption level*

15) Wrong consumption, *an irresponsible consumption level*

16) Right population, *a responsible population*

17) Wrong population, *an irresponsible population*

18) Right system stability impact, *a responsible stability impact*

19) Wrong system stability impact, *an irresponsible stability impact*

20) Optimal price, *a right market price*

21) Non-optimal market price, *a wrong market price*

22)Best market price, *an optimal market price*

23)Worse market price, *the worse wrong market price*

24) Most distorted market price, *the most irresponsible market price*

25) Optimal consumption, *the right consumption level*

26) Distorted consumption, *the wrong consumption level*

27) Most distorted consumption, *the worse consumption level*

28) Optimal production, *the right production level*

29) Distorted production, *the wrong production level*

30) Most distorted production, *the worse production level*

31) Optimal population, *the right population level*

32) Distorted population, *the wrong population level*

33) Most distorted population, *the worse population level*

34) Optimal system stability impact, *the most responsible system stability impact*

35) Distorted system stability impact, *an irresponsible system stability impact*

36) Most distorted system stability, *the most irresponsible system stability impact*

ii) Merging rules

a) The case of frameworks

Let's assume we have a stability system with 4 components A, B. C and D and 4 different frameworks: F1 = A-D, F2 = B-D, F3 = C-D, and F4 = A-B-D, where D is the stability issue and the other components are the root causes and/or consequences, then the following merging rules hold:

1) F1-F2 = (A-D)(B-D) = A-B-D as DD = D

2) F1-F3 = (A-D)(C-D) = A-C-D as DD = D

3) F2-F3 = (B-D)(C-D) = B-C-D as DD = D

4) F1.F4 = (A-D)(A-B-D) = A-B-D as AA = A and DD = D

5) F2-F4 = (B-D)(A-B-D) = A-B-D as BB = B and DD = D

6) F3.F4 = (C-D)(A-B-D) = A-B-C-D since DD = D

b) The case of dominant component based systems

Let's assume we have a development model with 3 components A, B. and C; and we have 4 possible dominant component based models: M1 = A, M2 = B, M3 = C, and M4 = BC, then the following merging rules hold:

1) M1.M2 = (A)(B) = AB

2) M1.M3 = (A)(C) = AC

3) M1.M4 = (A)(BC) = ABC

4) M2.M3 = (B)(C) = BC

5) M2.M4 = (B)(BC) = BC

c) The case of dominant and dominated component based systems

Let's assume we have a development model with 3 components A, B. and C; and we have 4 possible dominant and dominated components based models: M1 = Abc, M2 = aBc, M3 = abC, and M4 = aBC, then the following merging rules hold:

1) M1.M2 = (Abc)(aBc) = ABc

2) M1.M3 = (Abc)(abC) = AbC

3) M1.M4 = (Abc)(aBC) = ABC

4) M2.M3 = (aBc)(abC) = aBC

5) M2.M4 = (aBb)(aBC) = aBC

Linking the most distorted market price possible framework to over consumption, over production, overpopulation and environmental problems

Since ongoing market expansion is a race towards the most distorted market price possible as this is the lowest market price possible, then we should expect that in the long term these distorted markets will lead to over consumption(OVC), over production(OVP), and over populations(OVT) intensifying extreme overshoot behavior(EOVS) sending the most distorted system stability(MDR) component into true environmental problems(EP). Hence we can link the most distorted market structure(MDM) in Figure 1 above to overpopulation(OVT) and environmental problems(EP) if we make MDC = OVC, MDP = OVP, MDT = OVT, EOVS = EOVS, and MDR = EP as shown in Figure 2 below:

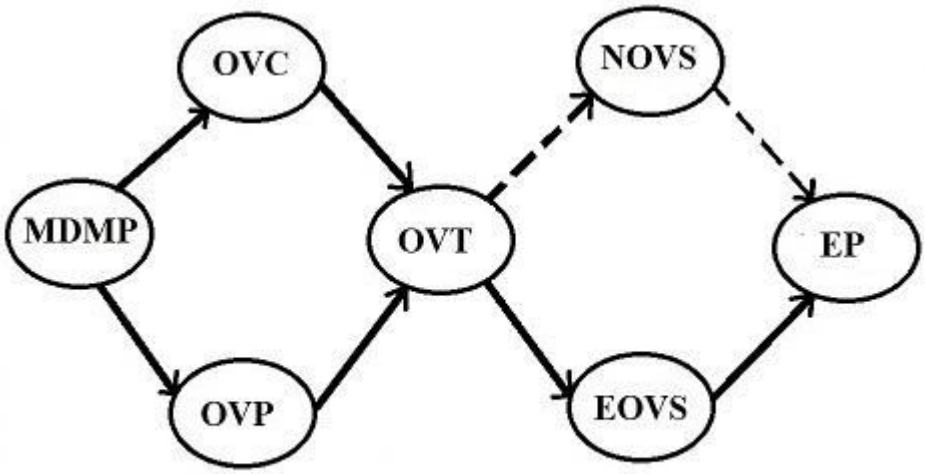

Figure 2 Linking the most distorted market price structure(MDMP) to over population dynamics(OVT) and environmental problem(EP)

Figure 2 above links the most distorted market structure(MDM) and most distorted price framework(MDMP) to over population dynamics(OVT) and to environmental problems(EP) creating the most distorted market price-over population-environmental problems framework(MDMP-OVT-EP framework).

We can point out the following about the MDMP-OVT-EP framework based on Figure 2 above: i) The root cause of environmental problems(EP) is the most distorted market price(MDMP); ii) The most distorted market price(MDMP) leads to over consumption(OVC), over production(OVP), which support over population trends(OVT); iii) Over population

trends(OVT) as markets expand intensify overshooting behavior(EOVS), which feeds environmental problems(EP); and iv) Therefore, over consumption(OVC), over production(OVP), over population(OVT) are consequences of the most distorted market price possible(MDMP) as shown in Figure 2 above and the drivers of extreme overshooting(EOVS).

Expectation 2:

If the most distorted market price among the distorted market prices possible is the trend, then in the long term over consumption and over production and overpopulation dynamics will materialize, which will lead to environmental problems through extreme overshooting behavior. Hence the best policy response to address the environmental problem is to address the root cause and its consequences the same time.

Placing the most distorted market price-over population dynamics-environmental problems framework(MDMP-OVT-EP framework) under market structure neutrality assumptions to highlight the nature of the over population dynamics-environmental problems framework(OVT-EP framework) a la ecological overshoot

As indicated in the introduction, the main aspects behind the ecological overshoot idea are that overpopulation(OVT) leads to environmental problems(EP) through extreme overshooting behavior(EOVS) independently of the market structure that sustains it. Hence, if we place the most distorted market-over population-environmental problems framework(MDMP-OVT-EP framework) summarized in Figure 2 above under market structure neutrality assumptions, we arrive at Figure 3 below:

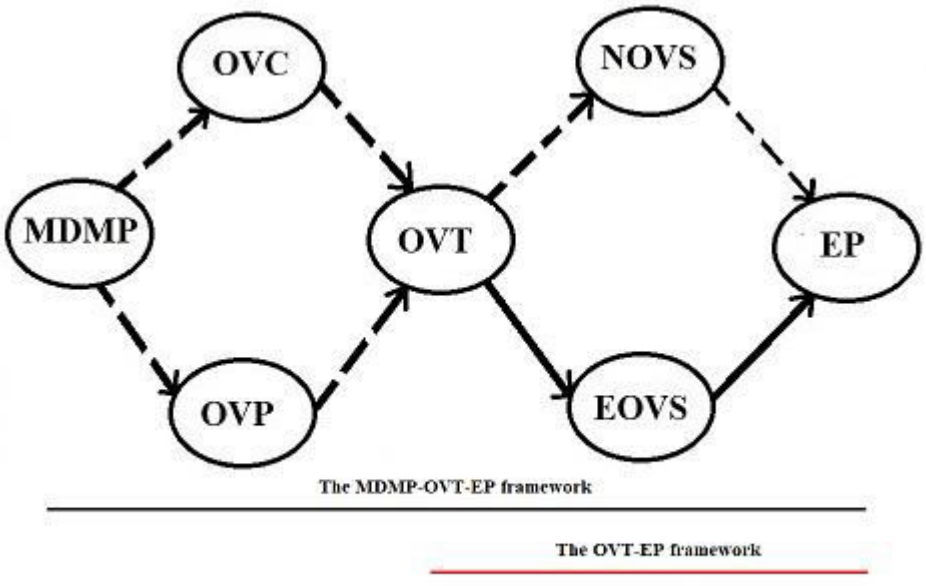

Figure 3 The market structure neutrality assumption embedded in the overpopulation dynamics-environmental problem framework(OVT-EP framework) a la ecological overshoot(EOVS)

We can see based on Figure 3 above that if the nature of the population(OVT) is shaped by the nature of the market that support it(MDMP, OVC, OVP), then the root cause of environmental problems(EP) is the most distorted market price(MDMP) as indicated by the MDMP-OVT-EP framework line. We can also see that if the nature of the population(OVT) is independent of the market structure that support is(MDMP, OVC, OVP) as indicated by the broken lines from MDMP, OVC, and OVP to OVT, then the root cause of environmental problems(EP) is over population(OVT) a la ecological overshoot as shown by the OVT-EP framework line.

Expectation 3:

Under market structure dependence, the overpopulation-environmental problem framework is a subset of the MDMP-OVT-EP framework, but under market structure independence, the over population-environmental problem framework acts as a separate framework. Hence, each framework has a different best policy response to the same environmental problem, one focused on the most distorted market price and its consequences, and the other focused on the overpopulation dynamics and its consequences.

The structure of the overpopulation dynamics-environmental problems framework(OVT-EP framework) a la ecological overshoot

Hence, for the ecological overshoot ideas to work you need to have a market structure neutrality assumption, which leads to Figure 4 below:

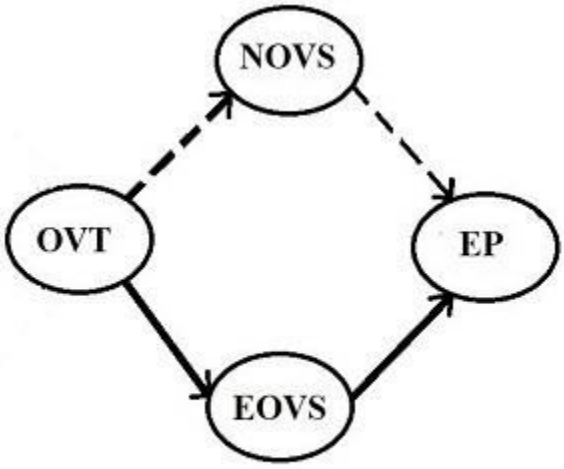

Figure 4 The overpopulation dynamics and enviromental problems (OVT-EP framework) a la ecological overshoot(EOVS).

We can highlight out the following about the OVT-EP framework based on Figure 4 above: i) The root cause of environmental problems(EP) is over population dynamics(OVT); ii) Over population trends(OVT) intensify overshooting behavior(EOVS), which feeds environmental problems(EP); and iii) The ecological overshoot idea works independently of the distorted market structures that sustain over population dynamics.

Expectation 4:

Consistent with the ecological overshoot idea in Figure 4 above, over population dynamics if left unattended will lead to environmental problems. And hence, addressing population dynamics is the best way to deal with environmental problems as it addresses the ecological overshoot problem

Food for thoughts

a) Should we expect overshooting under the most distorted market pricing? I think yes, what do you think?; b) Should we expect overshooting behavior under optimal market pricing? I think No, what do you think?; and c) Can environmental problems be solved without fixing the most distorted market prices? I think No, what do you think?

Conclusions

First, it was shown that in the long term we should expect the most distorted market pricing mechanism to lead to over consumption, over production and over population trends, which will lead to environmental problems due to extreme overshoot behavior transforming the most distorted market price-most distorted population-most distorted system stability framework(MDMP-MDT-MDR framework) into the most distorted market price-over population dynamics-environmental problems framework(MDMP-OVT-EP framework). Second, it was highlighted that under no independency from the market structure, the over population dynamics-environmental problems framework(OVT-EP framework) is a subset or is part of the most distorted market price-over population dynamics-environmental problems framework(MDMP-OVT-EP framework), but under market structure neutrality assumptions then the over population dynamics-environmental framework(OVT-EP framework) is a separate framework with a different root cause to environmental problems. Third, it was stressed that under the most distorted market price-over population dynamics-environmental problems framework(MDMP-OVT-EP) the root cause of environmental problems and therefore, the proper point of entry to solving these issues is the most distorted market price, but under the over population dynamics-environmental problem framework(OVT-EP framework) the root cause of

environmental problems, and therefore, the best point of entry to address these issues is over population dynamics, which drives ecological overshooting behavior.

In general, it can be said that the proper policy response to deal with environmental problems depends on whether you use a systematic model based on the ability of markets to shape the nature of populations and their dynamics or you use a partial model that assume that population dynamics is not shaped by the nature of the markets in which they exist, as then the root causes and their consequences are different.

References

Muñoz, Lucio, 2010. **What If Markets Have Always Been Distorted? Would It Then Be a Good Fix to Add Fair Trade Margins to Correct Distorted Agricultural Market Prices?,** ***Journal of Sustainability***, Issue 2, Number 4(Spring), Rio Rancho, New Mexico USA.

Muñoz, Lucio, 2012. **Complex and Man-Made Markets: Are We Currently Approaching Sustainability in a Backward and More Chaotic Way in Terms of Economic Thinking?,** In: ***The Mother Pelican Journal,*** Vol. 8, No. 8, August, Ed. Luis Gutiérrez, PhD, New Haven, CT, USA.

Muñoz, Lucio, 2020. **The road towards sustainability markets: Linking cost externalization to market structure and price structure using qualitative comparative means**, In: ***International Journal of Latest Research in Humanities and Social Science (IJLRHSS),*** Volume 03 - Issue 01, January 20, Pp 20-32.

Muñoz, Lucio, 2022. **Sustainability thought 164: How to link the general market structure-population dynamics-system stability framework to the concepts of optimal pricing, of distorted market pricing and of the most distorted market price?,** In: ***International Journal of Latest Research in Humanities and Social Science (IJLRHSS),*** Volume 05, Issue 07, PP. 01-08, India.

Rees, William, 2022. **A Note on Climate Change and Cultural Denial**, ***The Modern Pelican Journal,*** Vol. 18, No. 1, January, Ed. Luis Gutiérrez, PhD, New Haven, CT, USA.

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

Citation:

Muñoz, Lucio, 2022. **Sustainability thought 165: How can we show that the overpopulation framework a la ecological overshoot is a subset of the most distorted market price possible framework? What are the main implications of this?,** In: ***Sarcouncil Journal of Arts Humanities and Social Sciences(SJAHSS),*** Vol. 01, Issue 06, August 23, Pp 1-7. ISSN: 2945-3488, Philippines. https://doi.org/10.5281/zenodo.15725184