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**Sustainability thought 159: How can the general irresponsible market structure, irresponsible population dynamics and irresponsible system stability framework be used to point out the embedded neutrality assumptions under which irresponsible population dynamics frameworks like the ecological overshoot work?**

By

**Lucio Muñoz\***

\* Independent Qualitative Comparative Researcher / Consultant, Vancouver, BC, Canada Email: [munoz@interchange.ubc.ca](mailto:munoz@interchange.ubc.ca)

## Abstract

It can be said that the irresponsible market structure-irresponsible population and irresponsible system stability framework allows for a systematic view of the system stability issue from root causality, to consequences, to irresponsible impacts on system stability, if the nature of root causality is irresponsible. In other words, this framework provides a full view of the system stability issue. If we look carefully at population dynamic and system stability frameworks like the ecological overshoot we can see that it says nothing about the irresponsible market structure(pricing, consumption, and production) that shapes irresponsible populations like over population so it is not a full population dynamics and system stability based framework. In other words, as this framework is driven by over population dynamics, an irresponsible population dynamics, it provides a partial view of the system stability issue as it has an irresponsible market structure neutrality assumptions. Hence, ecological overshoot based framework needs the existence of one specific embedded neutrality assumptions in order to work; and without this assumption the framework would not work as then the nature of root causality and of consequences and of irresponsible impacts on system stability would change, yet this situation seems unclear right now and needs some good food for thoughts on how that

embedded assumption can be seen and understood. And this raises important questions such as How can the general irresponsible market structure, irresponsible population dynamics and irresponsible system stability framework be used to point out the embedded neutrality assumptions under which irresponsible population dynamics frameworks like the ecological overshoot work? What are the implications of eliminating this embedded assumption? Among the goals of this paper is to provide an answer to those questions.

## **Key words**

Market structure, irresponsible market structure, market price, irresponsible market price, unsustainable market price, production, irresponsible production, unsustainable production, consumption, irresponsible consumption, unsustainable consumption, population dynamics, irresponsible population dynamics, unsustainable population behavior, overshoot, no overshoot, system stability, irresponsible system stability, unsustainable system stability, global warming, irresponsible behavior, unsustainable behavior.

## **Introduction**

### **a) The irresponsible market structure, irresponsible population and irresponsible system stability framework**

It can be said that the irresponsible market structure-irresponsible population dynamics and irresponsible system stability framework(IM-IT-IR) allows for a systematic view of the system stability issue from root causality, to consequences, to irresponsible impacts on system stability, if the nature of root causality is irresponsible. In other words, this framework as advanced recently(Muñoz 2022 ) provides a full view of the system stability issue as indicated in Figure 1 below:

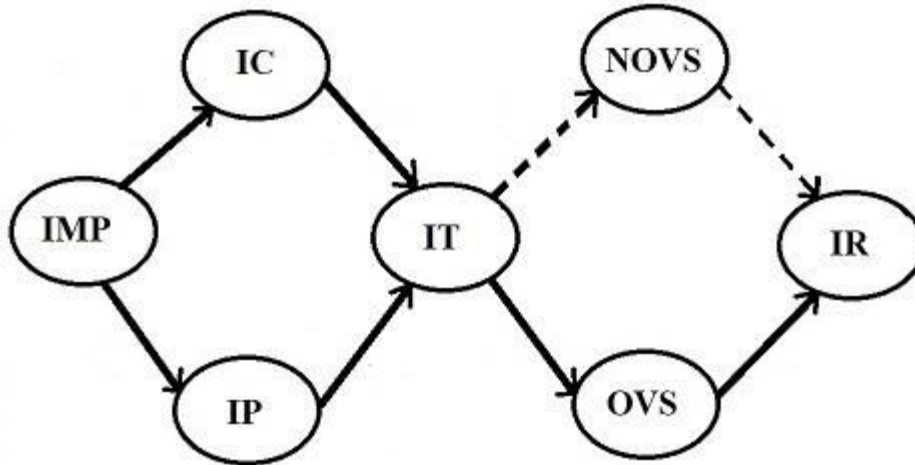


Figure 1 The general irresponsible market structure, irresponsible population dynamics and irresponsible system stability framework(IMP-IT-IR framework)

We can indicate the following about the general irresponsibility framework(IM-IT-IR framework) based on Figure 1 above: i) The root cause of the irresponsible impact on system stability IR is the irresponsible market price(IMP); ii) Irresponsible consumption(IC) and irresponsible production(IP) are the consequences of irresponsible market pricing(IMP); iii) Irresponsible population dynamics(IT) is shaped by the irresponsible nature of the market structure; iv) Irresponsible populations(IT) do overshoot(OVS) as they live over the carrying capacity of the system IR. The thinking that responsible and irresponsible markets are associated with different cost externalization behavior, and hence they have different impacts on sustainability has been pointed out(Muñoz 2020), thinking that can be used to see how we can go from an irresponsible market pricing to a responsible one.

### **b) The population dynamics and system stability framework a la ecological overshoot**

If we look carefully at population dynamic and system stability frameworks like the ecological overshoot(The OVT-EP framework), where humans are using more resources than the system can supply(Rees 2022), we can see that it says nothing about the irresponsible market structure(pricing, consumption, and production) that shapes the irresponsible population behavior like over population so it is not a full system stability based framework. In other words, as this OVT-EP framework is driven by over population dynamics it provides a partial view of the system stability issue as it has a full irresponsible market structure neutrality assumptions embedded in it. The population dynamics and system stability framework a la ecological overshoot can be summarized graphically as indicated in Figure 2 below:

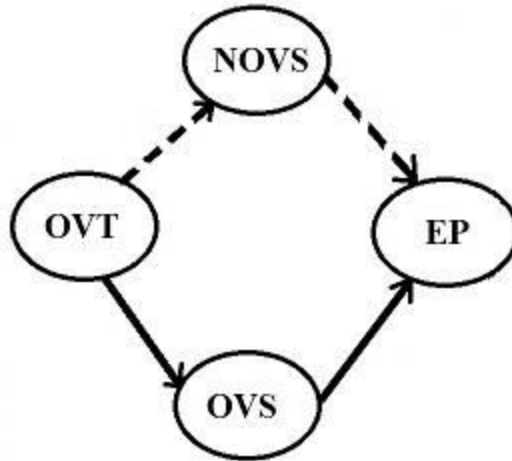


Figure 2 The ecological overshoot framework: Over population (OVT) is the root cause of environmental problems(EP) through the ecological overshoot(OVS).

We can stress based on Figure 2 above about the OVT-EP framework that the root cause of environmental problems(EP) is the existence of overpopulation(OVT) as they overshoot(OVS). Moreover, if we look carefully at the ecological overshoot framework(OVT-EP framework) in Figure 2 above we can see that it says nothing about irresponsible market pricing(RMP), leaving out the link between the irresponsible nature of the population and the irresponsible nature of the markets in which they live as irresponsible market structures such as irresponsible market pricing(IMP) are supposed to lead to irresponsible population dynamics like over population(OVT) and therefore, they lead to irresponsible impacts on environmental problems(EP). You can appreciate the missing full irresponsible market structure (IMP, IC, IP) link to irresponsible population dynamics like overpopulation(IT = OVT)) by comparing Figure 2 with Figure 1 above. In other words, the overpopulation dynamics and system stability framework a la ecological overshoot gives a partial view of the system stability issue as again it has a full market structure dynamics neutrality assumptions embedded in it.

**c) The population dynamics and system stability framework a la ecological overshoot as an irresponsibility based framework**

As over population dynamics(OVT) is an irresponsible population dynamics(IT) issue so  $OVT = IR$  and the environmental problem(EP) is an irresponsible system stability issue(IR) so that  $EP = IR$ , then the population dynamics and system stability framework a la overshoot in Figure 2 above can be expressed in irresponsible terms as shown in Figure 3 below:

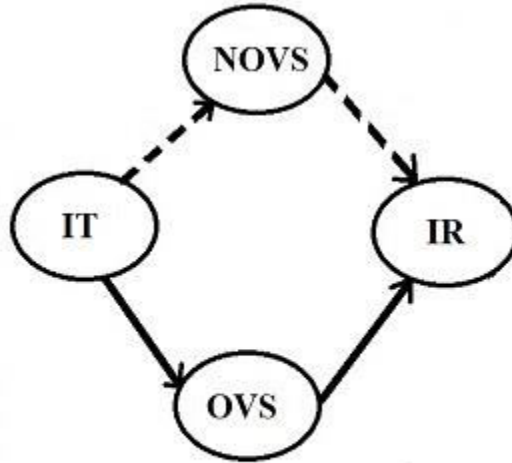


Figure 3 The ecological overshoot idea in terms of irresponsible population and irresponsible system stability framework(IT-IR framework)

We can point out based on Figure 3 above about the irresponsible population dynamics and irresponsible system stability framework(The IT-IR irresponsible framework) the following: i) that the root cause of irresponsible system stability (IR) is the irresponsible population(IT) as they overshoot(OVS) as indicated by the continuous black arrows; ii) there is a full irresponsible market structure dynamic neutrality assumption embedded in this framework; and iii) hence, irresponsible population dynamics work independently of the irresponsible market structure that is supposed to shape them.

**d) The need to see and understand the embedded assumptions under which irresponsibility based frameworks like the population dynamics and system stability frameworks a la ecological overshoot work.**

Hence, irresponsible population dynamic based frameworks(IT-IR framework) like the ecological overshoot based framework(OVT-EP framework) need the existence of one specific embedded neutrality assumptions in order to work; and without this assumption the framework would not work as then the nature of root causality and of consequences and of irresponsible impacts on system stability would change, yet this situation seems unclear right now and needs some good food for thoughts on how that embedded assumption can be seen and understood. And this raises important questions such as how can the general irresponsible market structure, irresponsible population dynamics and irresponsible system stability framework be used to point out the embedded neutrality assumptions under which irresponsible population dynamics frameworks like the ecological overshoot work? What are the implications of eliminating this embedded assumption? Among the goals of this paper is to provide an answer to those questions.

## Goals of this paper

a) To highlight the embedded full irresponsible market structure dynamic neutrality assumption in the irresponsible population dynamics and irresponsible system stability framework; b) To point out that when the assumption is eliminated the irresponsible population dynamic framework then the is has the same structure and implications of the irresponsible market structure, irresponsible population dynamics and irresponsible system stability framework; c) To stress the link between irresponsible population dynamics and markets operating at the lowest irresponsible market price possible; and d) To show the implications of the over-population idea a la ecological overshoot under full irresponsible lowest price market structure neutrality assumption

## Methodology

First, the terminology, some operational concepts and merging rules are shared. Second, the structure of the embedded full irresponsible market dynamics neutrality assumption found in the irresponsible population dynamics and irresponsible system stability framework is given. Third, the full irresponsible population dynamic framework after eliminating the full irresponsible market structure neutrality assumption is highlighted. Fourth, the structure of the irresponsible market structure operating at the lowest irresponsible market price possible and its implications are stressed. Fifth, the structure of the overpopulation dynamics framework a la ecological overshoot under full irresponsible market structure at the lowest irresponsible price possible and its implications are indicated. And finally, some food for thoughts and relevant conclusions are provided.

## Terminology

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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 general framework                      TM = Traditional market price  
RM = Responsible market structure      RT = Responsible population dynamics  
RR = Responsible system stability      RMP = Responsible market price  
RC = Responsible consumption            RP = Responsible consumption  
RMP-RT-RR responsible framework      UN/UNEP responsible framework  
IM-IR Irresponsible market framework    IT-IR Irresponsible population framework  
IM-IT-IR general irresponsible framework    IM = Irresponsible market  
IMP = Irresponsible market price            IC = Irresponsible consumption  
IP = Irresponsible production              IT = Irresponsible population  
IR = Irresponsible system stability        IMP-IT-IR = irresponsible framework  
LIMP-OVT-EP = lowest price framework    OVT-EP = overpopulation dynamic framework  
OVT = Overpopulation                      OC = Over consumption  
OP = Over production                      EP = Environmental problems

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## **Operational concepts and merging rules**

### **i) Operational concepts**

- 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) Overpopulation, an irresponsible population form.**

**12) Over consumption, an irresponsible consumption form**

**13) Over production, an irresponsible production form**

**14) Lowest traditional market price possible, the most distorted traditional market price possible**

## **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)  $F1 \cdot F2 = (A-D)(B-D) = A-B-D$  as  $DD = D$**

**2)  $F1 \cdot F3 = (A-D)(C-D) = A-C-D$  as  $DD = D$**

**3)  $F2 \cdot F3 = (B-D)(C-D) = B-C-D$  as  $DD = D$**

**4)  $F1 \cdot F4 = (A-D)(A-B-D) = A-B-D$  as  $AA = A$  and  $DD = D$**

**5)  $F2 \cdot F4 = (B-D)(A-B-D) = A-B-D$  as  $BB = B$  and  $DD = D$**

**6)  $F3 \cdot F4 = (C-D)(A-B-D) = A-B-C-D$  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)  $M1 \cdot M2 = (A)(B) = AB$**

**2)  $M1 \cdot M3 = (A)(C) = AC$**

**3)  $M1 \cdot M4 = (A)(BC) = ABC$**



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

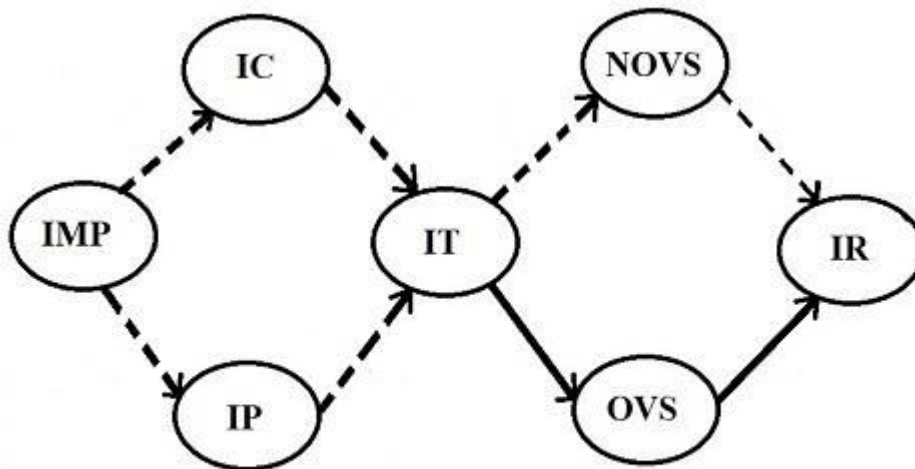
3)  $M1.M4 = (Abc)(aBC) = ABC$

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

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

**The assumption embedded in the irresponsible population and irresponsible system stability framework(IT-IR framework)**

If we place the irresponsible market structure-irresponsible population dynamics and irresponsible stability framework(the IM-IT-IR framework) in Figure 1 in the introduction over the irresponsible population and irresponsible system stability framework(The IT-IR framework) in Figure 3 above we can point out the embedded assumptions as indicated in Figure 4 below:



**Figure 4** The embedded market structure neutrality assumption(IMP, IC, IP) in the irresponsible population dynamics(IT) and irresponsible system stability framework(IR) as indicated by the broken arrows from IMP, IC, IP to IT

We can appreciate based on Figure 4 above that i) there is a full irresponsible market structure neutrality assumption embedded in the irresponsible population dynamics and irresponsible system stability framework(The IT-IR framework) as irresponsible population dynamics(IT) comes out of nowhere as indicated by the broken arrows between the IMP and both IC and IP; and from both IC and IP to IT; and therefore, ii) irresponsible populations dynamics(IT) exist independently of the irresponsible market structures that serves them.

### **Implications of the partial irresponsible population dynamics and irresponsible system stability framework**

*1) Irresponsible population dynamics(IT) exist without the need of an irresponsible market structures(IMP, IC, IP) and they overshoot(OVS);*

*2) The solution to irresponsible population dynamics(IT) is to go the responsible way;*

*3) Hence, the irresponsible population dynamics and irresponsible system stability framework(IT-IR framework) works because of the existence of one neutrality assumption: the full irresponsible market structure neutrality assumption.*

### **The irresponsible population and irresponsible system stability framework(IT-IR framework) when there is not full irresponsible market structure neutrality assumption**

If we eliminate the neutrality assumptions as irresponsible market structures matter to irresponsible system stability framework in Figure 4 above we arrive at the full irresponsible population dynamics framework as summarized in Figure 5 below:

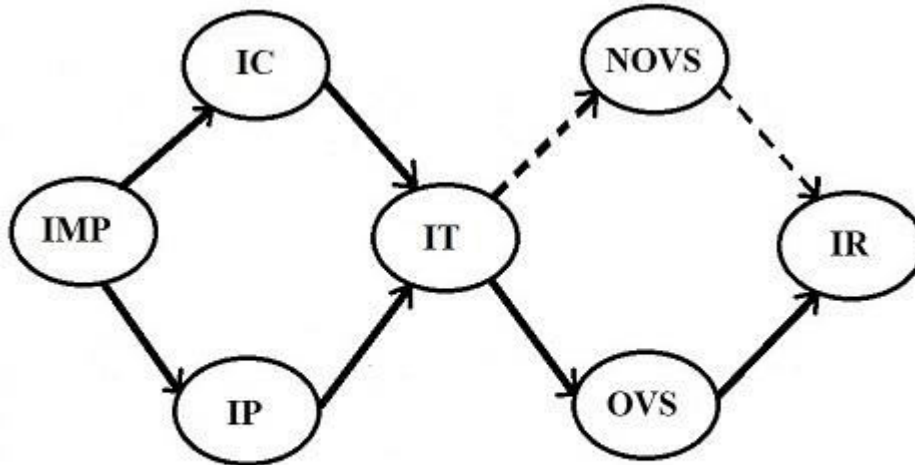


Figure 5 The irresponsible population dynamics and irresponsible system stability framework(IT-IR framework) when eliminating the full market structure neutrality assumption as indicated by the continuous arrows from IMP, IC, IP to IT is transformed into the general irresponsible market price, irresponsible population dynamics and irresponsible system stability framework(IMP-IT-IR framework)

We can indicate based on Figure 5 above that i) the full irresponsible population framework now has not neutrality assumptions as the irresponsible market structure(IMP, IC, IP) is now included as indicated by continuous arrows from IMP to both IC and IP and from both IC and IP to IT; and ii) that the irresponsible nature of the market structure(IMP, IC, IP) shapes the irresponsible nature of the population IT as well as the irresponsible nature of the impact on system stability IR through overshooting(OVS). It is important to indicate here here that the nature of the full irresponsible population dynamics and irresponsible system stability framework in Figure 5 above is consistent with the nature of the irresponsible market structure-irresponsible population dynamics and irresponsible system stability framework found in Figure 1 in the introduction.

### **Implications of the full irresponsible population dynamics and irresponsible system stability framework**

*1)The root cause of irresponsible system stability IR is the irresponsible market price IMP;*

*2) The irresponsible nature of population dynamics IT is shaped by the irresponsible nature of the market structure;*

*3) Irresponsible populations IT do overshoot;*

*4) Now that there are no irresponsible market structure neutrality assumptions(IMP, IC, IP), then the partial irresponsible population dynamics and irresponsible system stability framework(The IT-IR framework) no longer works; and*

5) *Given the fact that today we have an overpopulation problem and we know that traditional market prices are distorted in environmental terms, then a responsible solution based on Figure 5 above for the full irresponsible framework is to address the issue of irresponsible market prices by pricing markets responsibly to have a positive system stability impact on IR from now into the future as well as to address the current overpopulation problem, all done at the same time, and we do that starting with eliminating the neutrality assumption in Figure 4 above to be able to address the system stability issue from the full irresponsibility framework in Figure 5 above as shown.*

**Linking the general irresponsible market structure(the IM-IT-IR framework) operating at the lowest irresponsible market price possible with the over-population dynamics idea a la ecological overshoot(the OVT-EP framework)**

In a market like the traditional market geared to produce at the lowest cost possible we should expect the following: i) the irresponsible market price(IMP) will tend to the lowest irresponsible price(LIMP) possible so that IMP--->LIMP; ii) irresponsible consumption(IC) will tend towards over consumption(OVC) so that IC----->OVC; iii) irresponsible production(IP) will tend towards over production(OVP) so that IP----->OVP; iv) irresponsible population dynamics(IT) will tend towards overpopulation(OVT) so that IT----->OVT; and v) irresponsible system stability impacts(IR) will tend to extreme environmental problems(EP) so that IR----->EP. If we substitute the expectations above in Figure 5 above we can link the market that produces at the lowest cost possible(LIMP) with overpopulation(OVT) and with extreme environmental problems(EP) as summarized in Figure 6 below:

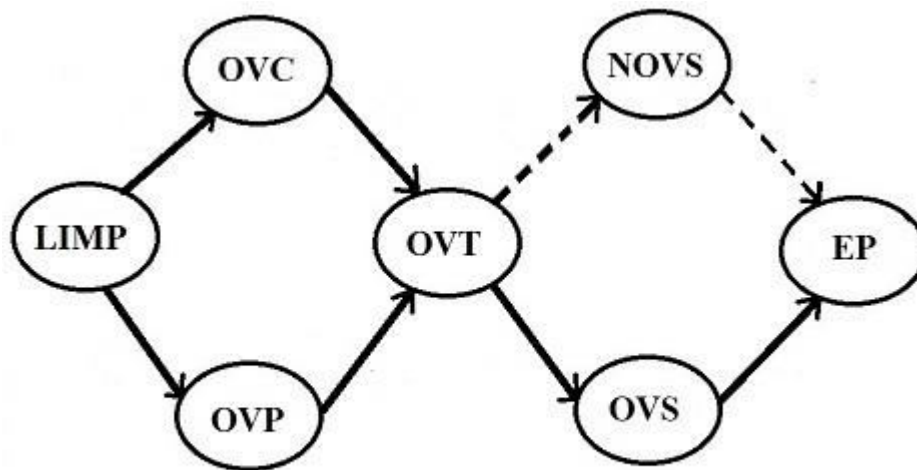


Figure 6 Linking the market structure that races to produced at the lowest irresponsible market price possible(LIMP) to the ecological overshoot idea led by over population(OVT)

Figure 6 above allows us to highlight the following aspects: i) The root cause of extreme environmental problems(EP) is the following of the rule of producing at the lowest cost

possible(LIMP) as that is the most irresponsible price possible; ii) Over consumption(OVC) and over production(OVP) are the consequences of the lowest irresponsible price possible(LIMP); iii) Overpopulation(OVT) is the consequence of the full irresponsible market structure(LIMP, OVC, OVP) that support it; and iv) Overpopulations(OVT) overshoot(OVS) worsening the environmental problem(EP).

### **The over-population idea a la ecological overshoot under full irresponsible market structure assumption**

If we cut the arrows from LIMP, OVC, and OVP to OVT in Figure 6 above to indicate a full market structure neutrality assumption, we arrive to the structure of the overpopulation idea a la ecological overshoot(OVT-EP framework) as stated in Figure 7 below:

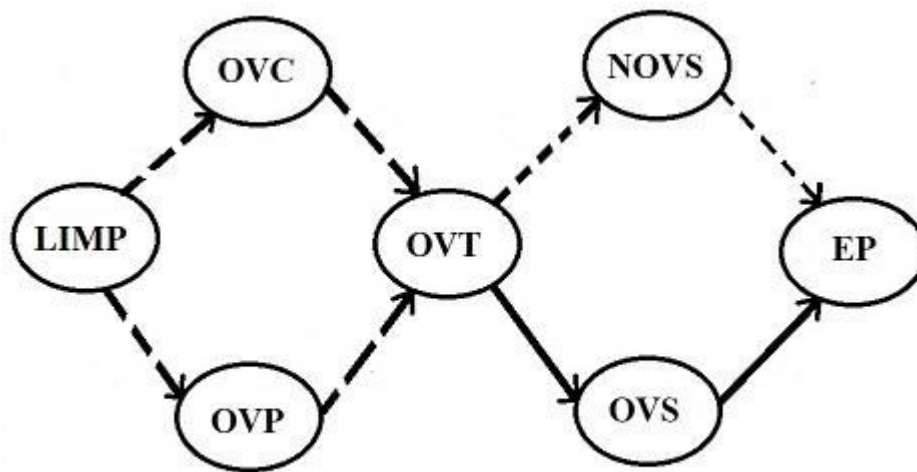


Figure 7 The ecological overshoot idea led by over population(OVT) under full irresponsible market structure neutrality assumption

Figure 7 above summarizes the ideas behind the overpopulation dynamics framework a la ecological overshoot such as i) The root cause of environmental problems EP is overpopulation(OVT); ii) Overpopulation(OVT) drives overshooting behavior(OVS); iii) overpopulations(OVT) come to exist outside irresponsible market structure behavior; and iv) The solution to environmental problems(EP) a la overshoot(OVS) is addressing the overpopulation problem immediately.

### **Food for thoughts**

a) Can we have negative stability impacts on system sustainability without irresponsible populations? I think No, what do you think?; b) Can we have irresponsible consumption and irresponsible production without irresponsible market pricing? I think No, what do you think?;

and c) Is an irresponsible system stability framework consistent with the concept of cost externalization trends? I think Yes, what do you think?

## Conclusions

First, it was shown that contrasting the irresponsible market structure-irresponsible population dynamics and irresponsible system stability framework with the partial irresponsible population dynamics and irresponsible system stability framework permits us to point out the neutrality assumption embedded in it, namely the full irresponsible market structure neutrality assumption. Second, it was indicated that the partial irresponsible population dynamics and irresponsible system stability framework works only if this neutrality assumption is present. Third, it was highlighted how the elimination of full irresponsible market structure neutrality assumption leads to the structure of the full irresponsible system stability framework. Fourth, it was pointed out that in the full irresponsible system stability framework the root cause of irresponsible system stability is the irresponsible market price. Fifth, it was stressed that producing at the lowest irresponsible price possible leads to over production, over consumption, and over population, which overshoot worsening the environmental problem. And sixth, it was highlighted that eliminating the full irresponsible market structure from the full irresponsible system stability framework leads to the structure of the overpopulation dynamics a la ecological overshoot framework, where overpopulation is the root cause of environmental problems.

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