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Sustainability thought 186: Sharing a general system stability theory under independent and dependent variable responsibility: The case of traditional market, population dynamics and system stability frameworks.

By

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Abstract

System stability impacts can be seen both from the independent variable and dependent variable point of view. When looking from the independent variable point of view, you find a situation where there are several root causes driving system stability dynamics; and therefore, it allows the existence of different root cause based system stability frameworks at the same time, competing for attention in a compartmentalized manner. When looking from the dependent variable point of view you find a situation where there is a root cause and consequences, which drive system stability dynamics. Imagine the issues that may arrive if a system that is based on dependent variables is assumed to work under independent variables as the case of market dynamics and system stability frameworks and the case of population dynamics and system stability frameworks show, a situation that goes unchallenged because there is not a general theory of dependent and independent conjunctural causality that can highlight the limitations of those approaches in a clear way using systematic thinking. The main goal is the paper is to share a general system stability theory driven by independent and dependent variable responsibility thinking; and later apply it to the case of traditional market, population dynamics and system stability frameworks under independent and dependent variable thinking to highlight their framework structures and their implications, including limitations.

Key concepts

Market dynamics, population dynamics, responsible market dynamics, irresponsible market dynamics, responsible population dynamics, irresponsible population dynamics, system stability dynamics, independent causality, dependent causality, the traditional market, over population dynamics, positive system stability impacts, negative system stability impacts, ecological overshoot, responsible production, responsible consumption

Introduction

a) System stability impacts

System stability impacts can be seen both from the independent variable and dependent variable point of view. When looking from the independent variable point of view, you find a situation where there are several root causes driving system stability dynamics; and therefore, it allows the existence of different root cause based system stability frameworks at the same time, competing for attention in a compartmentalized manner. When looking from the dependent variable point of view you find a situation where there is a root cause and consequences, which drive system stability dynamics. Below the theory behind independent variable causality thinking and dependent variable causality thinking is introduced in detail.

i) System stability driven by independent variable thinking

Imagine there are two independent causes affecting system stability R such as RC1 and RC2, then the system stability framework indicated in Figure 1 below is at work.

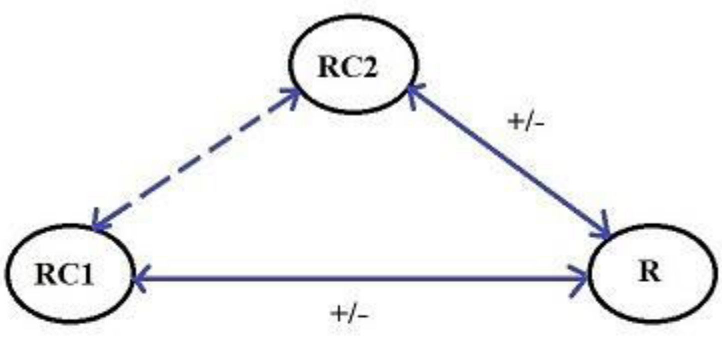

Figure 1 The system stability framework under independent causality: The RC1-R framework and the RC2-R framework.

The following information can be extracted from Figure 1 above: 1) The broken arrow indicates that RC1 and RC2 are independent variables meaning that there are two root causes driving system stability dynamics(R); 2) that there is an RC1-R framework driven by root cause RC1; 3) that there is an RC2-R framework driven by root cause RC2; and 4) That there will be competition between root causes to implement development policy and action consistent with their core values in a compartmentalized manner.

ii) A conjunctural view of system stability driven by independent variable thinking

The view that two different variables acting independently such as RC1 and RC2 create a conjunctural system stability framework R that is compartmentalized can be indicated as shown in Figure 2 below:

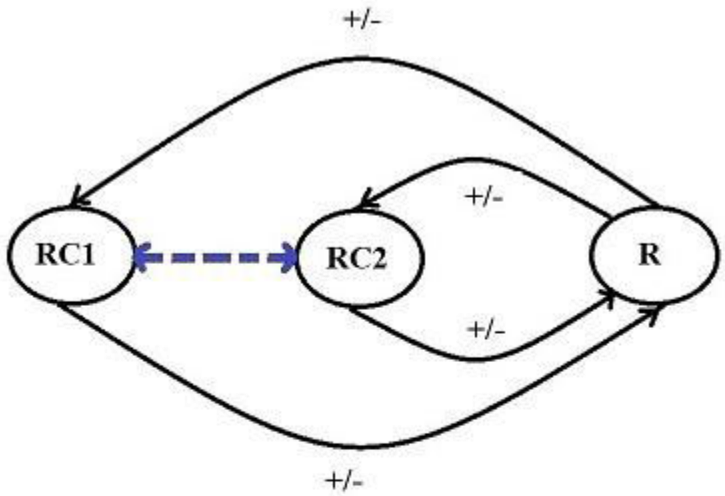

Figure 2 A conjunctural view of the system stability framework under independent causality: Two different root causes, RC1 and RC2 at work.

Figure 2 above helps us to understand the following: 1) Both RC1 and RC2 are affecting independently the system stability R; 2) That both, root-cause RC1 and root-cause RC2 will implement development policy and actions, especially the view that happens to be the core view, in a compartmentalized or isolated manner.

iii) System stability driven by dependent variable thinking

Imagine that the nature of one variable such as RC1 drives the nature of the second variable RC2 transforming it into a consequence(CO) so that RC2 = CO, then we have a system stability framework that is not based on independent variables, a situation highlighted in Figure 3 below:

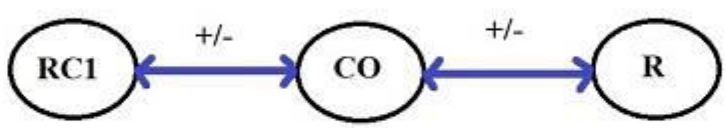

Figure 3 The system stability framework under dependent causality

The following information can be pointed out based on Figure 1 above: 1) There is only one root cause, RC1 in this system stability framework; 2) that root causes(RC1) have consequences(CO) that affects the system stability framework R; 3) the nature of the root cause RC1, positive(+) or negative(-), determines the nature of the consequences(CO), positive(+) or negative(-); and therefore, the nature of the impact on system stability R, positive(+) or negative(-); and 4) Development policy and action has to be consistent with the nature of the root cause RC1, the nature of the consequence(CO) and the nature of system stability R. Looking at Figure 3 above systematically it describes the root cause(RC1), consequence(CO), and system stability(R) framework(RC1-CO-R framework).

iv) A conjunctural view of system stability dynamics driven by dependent variables

The view that one variable such as RC2 is dependent of a variable such as RC1 becoming a consequence(CO) so that RC2 = CO creates a conjunctural system stability framework R that is not compartmentalized can be stated as shown in Figure 4 below:

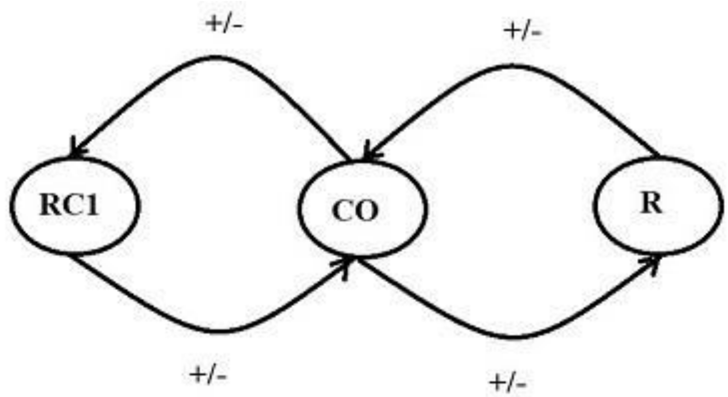

Figure 4 A conjunctural view of the system stability framework under dependent causality

The systematic nature of the framework in Figure 4 above helps us to appreciate the following: 1) The root cause of system stability dynamics R is the root cause RC1; 2) The nature of the root cause, positive or negative, determines the nature of the consequence, positive or negative; 3) The nature of the consequence(CO), positive or negative, determine the impact on system stability R, positive or negative; 4) if the nature of the root cause RC1 is positive, the nature of the consequence is positive; and the nature of the impact on system stability R is positive; and 5) If the nature of the root cause RC1 is negative, the nature of the consequence is negative; and the nature of the impact on system stability is negative.

b) The need to understand the implications of assuming that system stability under dependent causality works under independent causality

Imagine the issues that may arrive if a system that is based on dependent variables is assumed to work under independent variables as the case of market dynamics and system stability frameworks and the case of population dynamics and system stability frameworks show, a situation that goes unchallenged because there is not a general theory of dependent and independent causality that can highlight the limitations of those approaches in a clear way using systematic thinking. For example, Adam Smith(Smith 1776) gave us the theory of the traditional market assuming that markets can grow without creating environmental, social and population dynamics issues. The Brundtland commission in 1987(WCED 1987) took up the social, and environmental sustainability issues associated with the business as usual model based on addressing market unsustainability using sustainable development means under population dynamic externality neutrality assumptions. The commission on sustainable development (UNCSD 2012a; UNCSD 2012b) moved to address the environmental issue associated with traditional economic development in 2012 using initially, perfect market thinking, and later using dwarf green market thinking, in ways unconnected to population dynamics. The United Nations(UN 2020) is implementing a responsible consumption and responsible consumption program to address system unsustainability under population dynamics externality assumptions and without any link to right market prices or without calling for the need to correct distorted market prices. The ecological footprint idea(Rees 2022) is based on the thought that overpopulation is the root cause of environmental problems in ways fully unconnected with market dynamics. All examples above assume either market dynamics neutrality or population dynamics neutrality when addressing system stability issues as each approach takes them as independent causes, but issues arise when we look at the fact that long term market expansions since 1776 to 1987 led to sustainability issues such as over production, over consumption, over population, and socio-environmental problems which can be linked to irresponsible traditional market pricing, issues that were first formally highlighted by the Brundtland Commission (WCED 1987). In other words, in 1776 there were no over-production, over-consumption, and over-population problems, but by 1987 all of them were there as irresponsible market dynamics leads to market over production and over consumption expansions, which drive irresponsible population behavior in numbers and in habits. Once the over-population issue associated with irresponsible market dynamics arises it takes other social, environmental and economic dimensions challenging current and future development agenda, especially if the origin of the population problem is left unmentioned or out; and we focus our attention only on the drivers of the current over-population problem instead. For example, when looking at the population problem the professionals at the United Nations(UN 2022) start by linking the rapid growth of global population that has taken place since the 1950, and which was worse in 1987 when the report "Our Common Future" was shared(WCED 1987) to people living longer on average and to existing consistent high fertility trends, without asking themselves where the overpopulation problem peeking up since the 1950 came originally from or what its root cause may be, knowing that ongoing traditional market expansion, other things being equal, requires ongoing population expansion, and this keeps going until the population expansion becomes an overpopulation problem. If the irresponsible market dynamics link is assumed away or it is taken as independent of market dynamics trends, then we only need to focus our attention on the current overpopulation problem.

Ideas have been recently shared about how market-population system stability frameworks can be seen under dependent variables using sustainability thinking and the implications of doing this(Muñoz 2022a); about how they can be linked to responsible and irresponsible market behavior(Muñoz 2022b); and about how fully irresponsible market behavior can be linked to the idea of ecological overshoot(Muñoz 2022c). The main goal of this paper is to share a general system stability theory driven by independent and dependent variable responsibility thinking; and later apply it to the case of traditional market, population dynamics and system stability frameworks under independent and dependent variable thinking to highlight their framework structures and their implications, including limitations.

Goals of this paper

1) To apply the general system stability theory to market dynamics and population dynamics based system stability frameworks when market dynamics and population dynamics are taken as independent variables, both non-conjuncturally and conjuncturally; 2) To apply the general system stability theory to market dynamics and population dynamics based system stability frameworks when market dynamics and population dynamics are taken as dependent variables, both non-conjuncturally and conjuncturally; 3) To highlight the general structure of the market dynamics-system stability framework under population dynamics neutrality assumptions as well as its responsible structure and its irresponsible structure; 4) To highlight the general structure of the population dynamics-system stability framework under market dynamics neutrality assumptions as well as its responsible structure and its irresponsible structure; and 5) To stress the impact on the problem of solving development issues when taking dependent variables as independent variables.

Methodology

First, the terminology used in this paper is shared. Second, some concepts and operational tools are listed. Third, the market dynamics and population dynamics based system stability structures driven by independent variable thinking are pointed out. Fourth, a conjunctural view of market dynamics-population dynamics system stability driven by independent variable thinking is presented. Fifth, the market dynamics-population dynamics based system stability frameworks driven by independent variable thinking are stressed. Sixth, a conjunctural view of market dynamics-population dynamics system stability driven by dependent variable thinking is highlighted. Seventh, the market dynamics-system stability framework under population dynamics neutrality assumptions is introduced. Eight, the responsible market dynamics-responsible system stability framework is listed. Ninth, the irresponsible market dynamics-responsible system stability framework is given. Tenth, the population dynamics-system stability framework under market dynamics neutrality assumptions is detailed. Eleventh, the responsible population dynamics-responsible system stability framework is shown. Twelfth, the irresponsible population dynamics-irresponsible system stability framework is indicated. Thirteenth, the impact of assuming that dependent variables are independent is exalted. 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
RMP = Responsible market price	RC = Responsible consumption
RP = Responsible production	RT = Responsible population
RR = Responsible system stability	IMP = Irresponsible market price
IC = Irresponsible consumption	IP = Irresponsible production
IT = Irresponsible population	IR = Irresponsible system stability
RMP-RT-RR responsible framework	IMP-IT-IR irresponsible framework

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Operational concepts and merging rules

i) Operational concepts

Some of the concepts relevant to the notion of responsibility/irresponsibility, distortion/no distortion and dependency/independency relevant to this paper are:

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) Independent variables, *their nature is independent of the nature of the others.*

12) Dependent variables, *their nature depends on the nature of independent variables.*

13) Responsible variables, *the ones that have a positive impact on system stability.*

14) Irresponsible variables, *the ones that have a negative impact on system stability.*

ii) Merging rules

a) The case of frameworks

Let's assume we have a stability system with 4 components E, F, G, and H and 3 different frameworks: F1 = E-H, F2 = F-H, and F3 = G-H, where H is the stability issue and the other components are the root causes and/or consequences, then the following merging rules hold:

1) F1-F2 = (E-H)(F-H) = E-F-H as HH = H

2) F1-F3 = (E-H)(G-H) = E-G-H as HH = H

3) F2-F3 = (F-H)(G-H) = F-G-H as HH = H

b) The case of dominant component based systems

Let's assume we have a development model with 3 components E, F. and G; and we have 3 possible dominant component based models: M1 = E, M2 = F, and M3 = G, then the following merging rules hold:

1) M1.M2 = (E)(F) = EF

2) M1.M3 = (E)(G) = EG

3) M2.M3 = (F)(G) = FG

c) The case of dominant and dominated component based systems

Let's assume we have a development model with 3 components E, F, and G; and we have 3 possible dominant and dominated components based models: M1 = Efg, M2 = eFg, and M3 = efG, then the following merging rules hold:

1) M1.M2 = (Efg)(eFg) = EFg

2) M1.M3 = (Efg)(efG) = EfG

3) M2.M3 = (eFg)(efG) = eFG

d) More information about operational concepts and merging rules consistent with the ones shared here can be found papers with the same line of thinking such as Muñoz 2022a.

Market dynamics and population dynamics based System stability driven by independent variable thinking

Imagine that market dynamics(M) and population dynamics(T) are two independent causes affecting system stability R so that the root cause 1 is market dynamics(RC1 = M) and root cause 2 is population dynamics(RC2 = T), then the system stability framework indicated in Figure 1 above becomes the one stated in Figure 5 below:

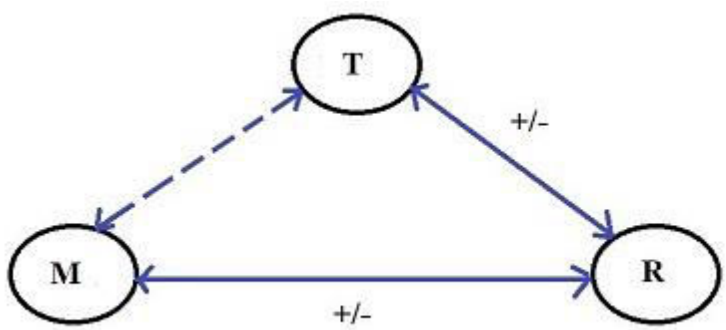

Figure 5 The system stability framework under independent market dynamics and population dynamics causality: The M-R framework and the T-R framework.

The information can be highlighted based on Figure 5 above is the following: i) The broken arrow shows that market dynamics(M) and population dynamics(T) are independent variables, which means that there are two root causes driving system stability dynamics(R), one is market dynamics(M) and the other is population dynamics(T); 2) that there is a market dynamics-system stability framework(M-R framework) driven by market dynamics; 3) that there is a population dynamics-system stability framework(T-R framework) driven by population dynamics; and 4) That there will be competition between these two root causes to implement development policy and action consistent with their core values in a compartmentalized manner.

A conjunctural view of market dynamics-population dynamics system stability driven by independent variable thinking

Since RC1 = M and RC2 = T, then the view that market dynamics(M) and population dynamics(T) acting independently lead to a conjunctural system stability framework R that is compartmentalized and consistent with Figure 2 above is reflected in Figure 6 below:

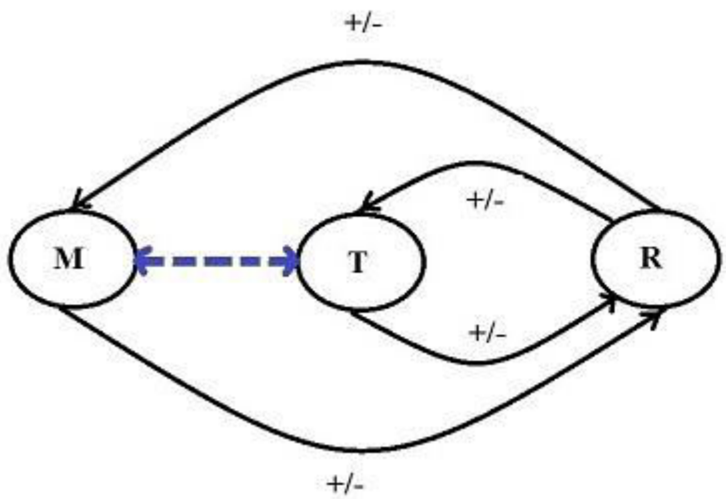

Figure 6 A conjunctural view of the system stability framework(R) under independent market dynamics(M) and population dynamics(T) causality.

Figure 6 above allow us to highlight the following: i) Both market dynamics(M) and population dynamics(T) are independently affecting system stability R; and ii) That both, market dynamics(T) and population dynamics(T) will implement development policy and actions, especially the view that happens to be the core view, in a compartmentalized or isolated manner. We can also see the following based on Figure 6 above about the M-R framework i) The market dynamics(M)-system stability framework(R) has two loops, one positive(+) and one negative(-); ii) The positive loop(+) means that responsible market dynamics(RM) have a responsible impact on system stability(R); and that responsible system stability(RR) has a positive impact on responsible market dynamics(RM). A responsible market(M) is the market where the market price reflects all cost associated with production, not just economic costs; and iii) The negative loop(-) means that irresponsible market dynamics(IM) have an irresponsible impact on system stability(R) and that irresponsible system stability(IR) has an irresponsible impact on irresponsible market dynamics(IM). An irresponsible market(IM) is one where not all costs associated with production are reflected or accounted for in its market price.

Moreover, we can point out the following about the T-R framework based on Figure 6 above: i) The population dynamics(T)-system stability framework(R) has two loops, one positive(+) and one negative(-); ii) The positive loop(+) means that responsible population dynamics(RT) have a responsible impact on system stability(RR); and that responsible system stability(RR) has a positive impact on responsible population dynamics(RT). Responsible population dynamics(RT) refers to dynamics that operate below the carrying capacity of the system; and iii) The negative loop(-) means that irresponsible population dynamics(IT) have an irresponsible impact on system stability(IR); and that irresponsible system stability(IR) has an irresponsible impact on irresponsible population dynamics(IT). Irresponsible population dynamics(IT) refers to dynamics that operate at or beyond the carrying capacity of the system.

Market dynamics-population dynamics based System stability driven by independent variable thinking

Imagine now that the nature of population dynamics(T) depends on the nature of market dynamics(M) so that so that the nature RC2 = T depends on the nature of RC1 = M, then RC2 = T = CO as now it is a consequence, which transforms the situation displayed in Figure 3 above into that shown in Figure 7 below as now T = CO:

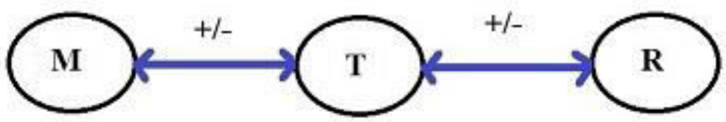

Figure 7 The system stability framework under depdendent market(M) and population(T) dynamics causality: The nature of population dynamics is driven by the nature of the market dynamics.

The following aspects can be highlighted based on Figure 1 above: i) that there is only one root cause, the nature of market dynamics(M) in this system stability framework; ii) that the nature of population dynamics(T) is not a root cause, but a have consequence(CO) that affects the system stability framework R; iii) that the nature of market dynamics(M), positive(+) or negative(-), determines the nature of the population dynamics(T), positive(+) or negative(-); and therefore, the nature of the impact on system stability R, positive(+) or negative(-); and iv) Development policy and action has to be consistent with the nature of market dynamics(M), with the nature of the population dynamics(T) and the nature of system stability R. Looking at Figure 7 above systematically it describes the market dynamics(M), population dynamics(T), and system stability framework(R) or (M-T-R framework).

A conjunctural view of market dynamics-population dynamics system stability driven by dependent variable thinking

The view that the nature of population dynamics(T) is dependent on nature of market dynamics so that M = RC1 and RC2 = T = CO as it is a consequence of the nature of market dynamics transforms the information shared in Figure 4 above into the framework shared in Figure 8 below:

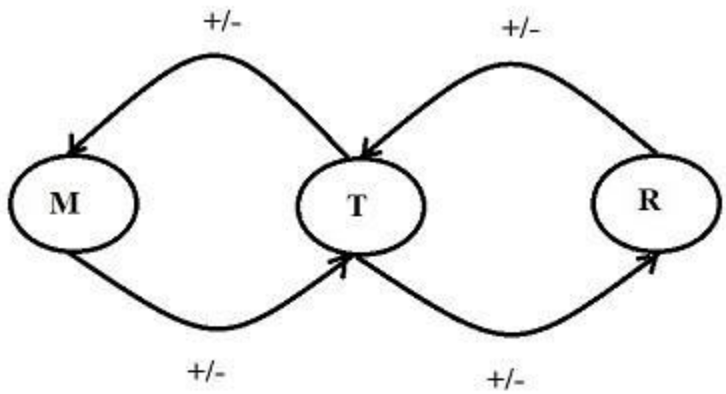

Figure 8 A conjunctural view of the system stability framework under dependent market dynamics and population dynamics causality: The M-T-R framework.

The systematic nature of the framework in Figure 8 above helps us to point out the following: i) The root cause of system stability dynamics R is the nature of market dynamics(M); 2) The nature of market dynamics(M), positive(+) or negative(-), determines the nature of population dynamics(T), positive(+) or negative(-); 3) The nature of population dynamics(T), positive(+) or negative(-), determine the impact on system stability R, positive(+) or negative(-); 4) if the nature of market dynamics(M) is positive(+), the nature of population dynamics(T) is positive(+); and the nature of the impact on system stability R is positive(+); and 5) If the nature of market dynamics(M) is negative(-), the nature of population dynamics is negative(-); and the nature of the impact on system stability(R) is negative(-).

The positive(+) and negative(-) loops in the stability framework M-T- R shown in Figure 8 above can be linked to the ideas of responsible and irresponsible nature of the root cause, the responsible and irresponsible nature of market dynamics depending on whether its market price reflects all costs associated with production or not, which in turn is linked to whether or not population dynamics operates below the carrying capacity of the environment, where i) the positive loop(+) means that responsible market dynamics(RM) have a responsible impact on population dynamics(RT); that responsible population dynamics(RT) have a responsible impact on system stability(RR), that responsible system stability(RR) has a responsible impact on population dynamics(RT), and finally, that responsible population dynamics(RT) have a responsible impact on market dynamics(RM); and ii) the negative loop(-) means that irresponsible market dynamics(IM) have an irresponsible impact on population dynamics(IT); that irresponsible population dynamics(IT) have an irresponsible impact on system stability(IR), that irresponsible system stability(IR) has an irresponsible impact on population dynamics(IT), and finally, that irresponsible population dynamics(IT) have an irresponsible impact on market dynamics(IM).

The market dynamics-system stability framework under population dynamics neutrality assumptions

If we assume or we believe by fact that population dynamics(T) have nothing to do with market dynamics(M), then the structure in Figure 6 above takes the form of the one in Figure 9 below:

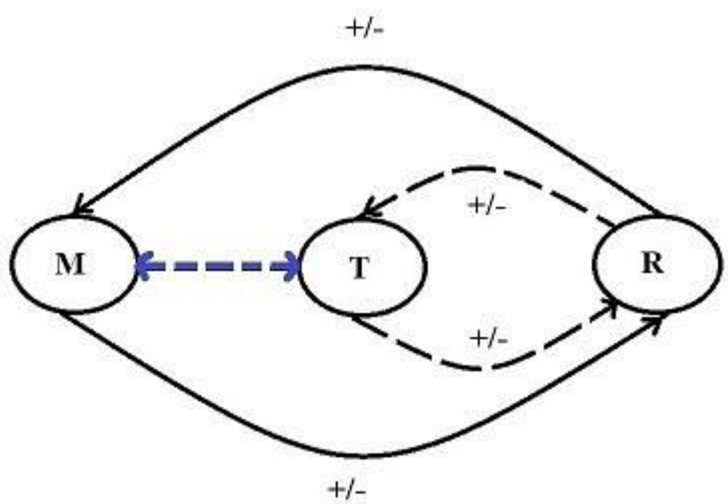

Figure 9 The United Nations Market Dynamics-system stability framework

Figure 9 above tells us that market dynamics(M) can have even negative impacts on system stability; and yet it still has no impact on the nature of population dynamics. Figure 9 above shows the M-R framework under population dynamics neutrality assumptions, which summarizes from this point of view the responsible/irresponsible market framework being used by the United Nations in support of sustainable development goal 12(UN 2020).

The responsible market dynamics-responsible system stability framework

If the behavior of markets(M) is responsible(RM) then markets operate on the positive loop(+) as then they have a responsible impact on system stability(RR), as indicated in Figure 10 below:

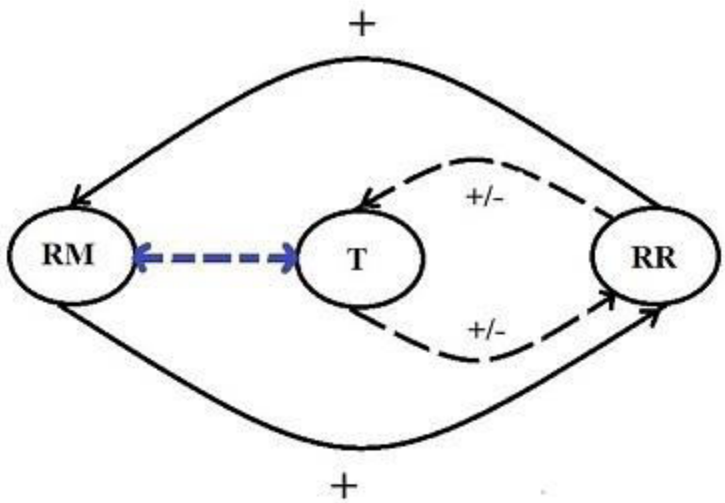

Figure 10 The responsible market dynamics and responsible system stability framework(RM-RR framework) under population dynamics neutrality assumption

Figure 10 above tells us that even when the market behaves responsible(RM) reflecting all costs associated with production, it has no impact on the nature of population dynamics(T). And this means that Figure 10 above captures the belief on which programs like the United Nations program's responsible production and responsible consumption are based as it assumes that responsible market dynamics(RR) have no influence on the nature of population dynamics.

The irresponsible market dynamics-responsible system stability framework

If the behavior of markets(M) is irresponsible(IM) then they operate on the negative loop(-) as then they have an irresponsible impact on system stability(IR), as detailed in Figure 11 below:

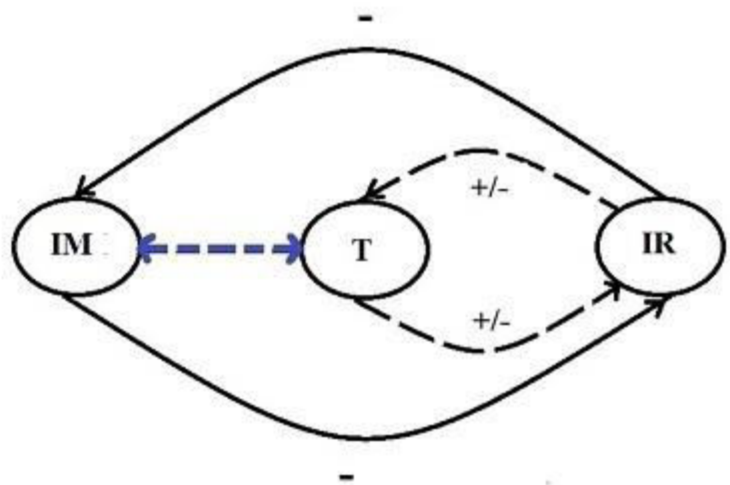

Figure 11 The irresponsible market dynamics and irresponsible system stability framework(IM-IR framework) under pupulation dynamics neutrality assumption

Figure 11 above highlights that even when the market behaves irresponsible(IM) not reflecting all costs associated with production, it has no impact too on the nature of population dynamics(T). And this means that the irresponsible production(IP) and irresponsible consumption(IC) problem that the United Nations is trying to solve with its responsible production(RP) and responsible consumption(RC) program has also no influence on the nature of population dynamics.

The market responsibility shift seems incomplete: *the need to go the way of responsible production and responsible consumption and away from irresponsible production and irresponsible consumption as the Brundtland Commission suggested implies the need to correct irresponsible market prices and move away that way from business as usual, without doing that the United Nations responsible production and responsible consumption is based in an irresponsible market price, which is a clear contradiction. Assuming that an irresponsible market price is responsible just to make production and consumption responsible does not work in reality as you cannot expect to make responsible production and consumption decisions under irresponsible market pricing. As the negative loop(-) shows, an irresponsible market price(IM) drives irresponsible market dynamics(IT) leading to irresponsible impacts on system stability(IR).*

The population dynamics-system stability framework under market dynamics neutrality assumptions

If we assume or we believe by fact that market dynamics(M) have nothing to do with population dynamics(T), then the structure in Figure 8 above takes the form of the one in Figure 12 below:

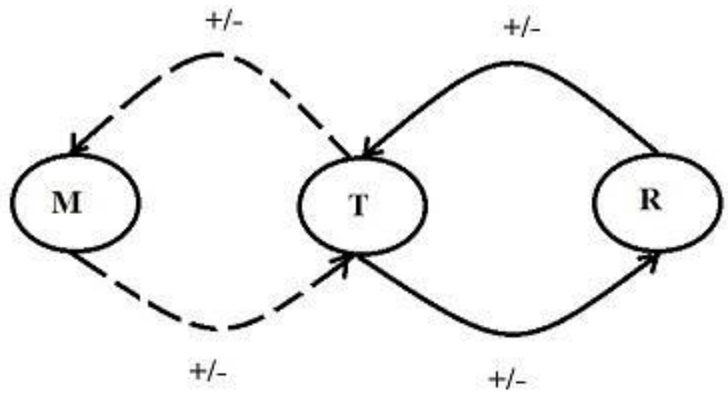

Figure 12 The population dynamics -system stability framework(T-R framework)

Figure 12 above points out that population dynamics can have even negative impacts on system stability; and it has still no impact on the nature of market dynamics. Figure 12 above shows the T-R framework under market dynamics neutrality assumptions.

The responsible population dynamics-responsible system stability framework

If the behavior of populations(T) is responsible(RT) so they operates on the positive loop(+) as then they have a responsible impact on system stability(RR), as indicated in Figure 13 below:

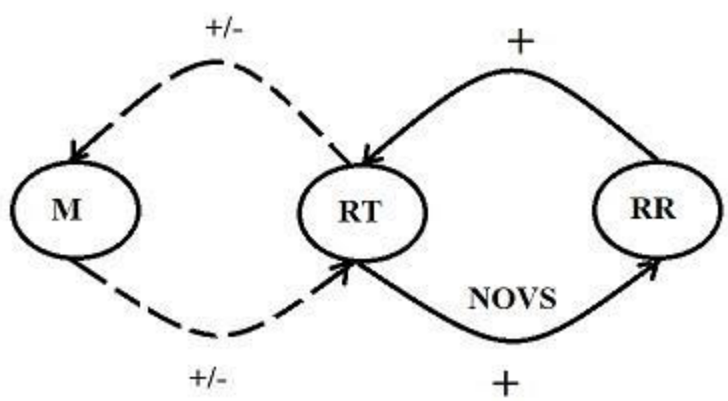

Figure 13 The responsible population dynamics-responsible system stability framework (RT-RR framework)

Figure 13 above stresses that even when the populations behaves responsible(RT) as they do not overshoot(NOVS) as populations stay below the carrying capacity of the system, it has no impact on the nature of market dynamics dynamics(M). And this means that even if we correct irresponsible population dynamics and make them responsible, still it will have no impact on the nature of market dynamics.

The irresponsible population dynamics-irresponsible system stability framework

If the behavior of populations(T) is irresponsible(IM), then they operate on the negative loop(-) as then they have an irresponsible impact on system stability(IR), as detailed in Figure 14 below:

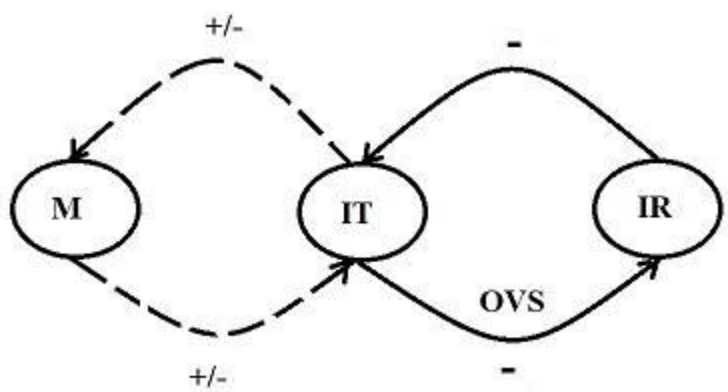

Figure 14 The irresponsible population dynamics and irresponsible system stability framework(IT-IR framework) under market dynamics neutrality assumptions

Figure 14 above shows that even when the populations behaves irresponsible(IT) as they overshoot(OVS), operating at or beyond the carrying capacity of the system; and hence, it has an irresponsible impact(IR) on system stability, yet it still has no impact too on the nature of market dynamics(M). And this means that even negative loop frameworks like the ecological overshoot framework where the overpopulation problem appears out of nowhere as the root cause of environmental problems still over population has no influence on the nature of market dynamics.

The population responsibility shift seems unclear: *The need to address the irresponsible population dynamics problem took more relevance once the Brundtland Commission mentioned in 1987 that the traditional development model that had assumed social, environmental, and population externality neutrality had led to over production, over consumption and over population based sustainability problems that needed to be addressed. The population responsibility shift from responsible to irresponsible or from irresponsible to responsible is not clear as irresponsible population dynamics framework like the ecological overshoot framework are not linked with what makes responsible population dynamics to go irresponsible and what would make irresponsible population dynamics to go responsibly as it is disconnected with the idea of irresponsible market dynamics, we know that the traditional market price only accounts for the economic costs of production so it has been an irresponsible market price since the* *beginning in social and/or environmental terms as it does not account for those costs of production.*

The impact of assuming that dependent variables are independent

As shown above, if the nature of population dynamics is dependent on the nature of market dynamics to explain why populations overshoot or do not overshoot or to explain from where in the long term the overpopulation problem or extreme irresponsible population dynamics problem comes from then dependent variables must be taken as dependent variables; and hence, if dependent variables are taken as independent variables doing this distorts the view of how system stability problems can be addressed systematically from root cause to consequence to impact on system stability as then you create a compartmentalized way to solve a problem which is inconsistent with the actual nature of the problem. In 1776 when Adam Smith(Smith 1776) envisioned his perfect market theory and model there was no over production, no overconsumption, and no overpopulation problem, by 1987 when the Brundtland Commission published the report "Our Common Future"(WCED 1987) there was an over production, over consumption, and overpopulation problem causing extreme development unsustainability; and as both the irresponsible market and irresponsible system stability framework(IM-IR framework) or the irresponsible market, irresponsible population dynamics and irresponsible system stability framework(IM-IT-IR framework) highlight this can only happen when a system is under a long term influence of irresponsible market prices as the traditional market price has been a distorted market price from the beginning as it only reflects the economic costs of production: .

Food for thoughts

1) Would not reflecting all the cost of production leads to irresponsible market pricing? I think Yes, what do you think?; 2) Should we expect over population dynamics affect market dynamics? I think Yes, what do you think?; 3) Should we expect green population dynamics to overshoot? I think No, what do you think?; 4) Should we expect dwarf green markets to still encourage irresponsible population behavior? I think yes, what do you think?; and 5) If the IM-IT- IR frameworks is the way to go, can we solve the system stability issue by addressing only the root cause/irresponsible market dynamics or dealing only with the consequence/irresponsible population dynamics? I think No, what do you think?

Conclusions

First it was pointed out that when applying the general system stability theory to market dynamics and population dynamics as independent variables it shows that they lead to two different ways of addressing the same system stability issue in a compartmentalized manner. Second, when applying the theory to market dynamics and population dynamics as dependent variables it leads to only one systematic way to address the system stability issue. Third, the general nature of the market dynamics and system stability framework(M-R framework) was stressed under population dynamics neutrality assumptions as well as its responsible(RM-RM framework) and irresponsible(IM-IR framework) structures. Fourth, the general nature of the population dynamics and system stability framework(T-R framework) was indicated when under market dynamics neutrality assumptions as well as its responsible(RT-RR framework) and irresponsible(IT-IR framework) structures. And finally, fifth, it was highlighted that if dependent variables are taken as dependent variables the general framework shows that doing this leads to a distorted tool kit to address system stability issue as this is a systematic issue that needs a systematic solution as a non-systematic solution does not fit the actual nature of the problem.

In general, it was shown that the general system stability theory under independent variable responsibility introduced here can be applied to traditional market dynamics(M), population dynamics(T) and system stability frameworks(R) to highlight that when they are taken as independent variables they lead to a distorted view of how to solve system stability issues if in fact they are dependent variables. If population dynamics is a variable depending on the nature of market dynamics then the general system stability theory suggest the implementation of a systematic solution where the nature of population dynamics are taken as a consequences of the nature of market dynamics as the only root cause of system stability problems in the M-T-R framework is market dynamics.

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