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**Sustainability thoughts 148: Which are the paradigm evolutions routes available in the case perfect capitalism is brought down by binding socio-environmental sustainability gap pressures? What is the nature of the market structure associated with each of those routes?**

**By**

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**Abstract**

Markets that expand continuously under externality neutrality assumptions reach sooner or later a point of possible collapse when the assumptions turns out to be wrong as suddenly the threat that was assumed away at the beginning now becomes a binding current threat to the survival of the market, and this is true if we are dealing with environmental externality neutrality assumptions or with social externality neutrality assumption or with socio-environmental externality neutrality assumptions. When the market is under a binding threat, it can be saved if we take action to fix the relevant binding externality problem affecting it or it can be patched. If on the other hand, stakeholders failed to act to save it, the market will collapse and flip to inverse opposite models, perfectly or imperfectly or it will flip towards authoritarianism. The above holds true for any market including the traditional market, in this case the traditional market under binding socio-environmental externality threats. This paper focuses on the socio-environmental externality threat incrustated in the perfect traditional market model due to the socio-environmental externality neutrality assumption; and the failure to fix it or patch it to prevent the perfect traditional market model collapse when under binding socio-environmental externality threat. And this raises the questions, which are the paradigm evolutions routes

available in the case perfect capitalism is brought down by binding socio-environmental sustainability gap pressures? What is the nature of the market structure associated with each of those routes? Among the goals of this paper is to provide answers to these questions.

## **Key concepts**

Sustainability, perfect markets, imperfect markets, sustainability markets, externality management markets, sustainability gap, paradigm fix, paradigm patch, paradigm shift, perfect paradigm flip, imperfect paradigm flip, dominant paradigm, paradigm evolution, traditional market, sustainability market, socio-environmental externality based market, authoritarianism based market, perfect socio-environmental market, imperfect socio-environmental market.

## **Introduction**

### **a) Markets under externality neutrality assumptions**

Markets that expand continuously under externality neutrality assumptions reach sooner or later a point of possible collapse when the assumptions turns out to be wrong as suddenly the threat that was assumed away at the beginning now becomes a binding current threat to the survival of the market, and this is true if we are dealing with environmental externality neutrality assumptions or social externality neutrality assumption or socio-environmental externality neutrality assumptions. When the market is under a binding threat, it can be saved if we take action to fix the relevant binding externality problem affecting it or it can be patched. If on the other hand, stakeholders failed to act to save it, the market will collapse and flip to inverse opposite models, perfectly or imperfectly or will flip towards authoritarianism. It has been pointed out recently that when externality threats affecting the working of a market become binding threats the market affected has then five evolution routes available for action (Muñoz 2021a): i) The perfect paradigm shift route; ii) the imperfect paradigm shift route; iii) the perfect flip to the inverse opposite paradigm route; iv) the imperfect flip to the inverse opposite paradigm route; and v) the authoritarianism flip route.

### **b) The traditional markets under binding socio-environmental externality threat**

The above holds true for any market under binding externality threats including the traditional market, in this case the traditional market under binding socio-environmental externality threats.

#### **i) The structure of the traditional market under binding socio-environmental externality threats**

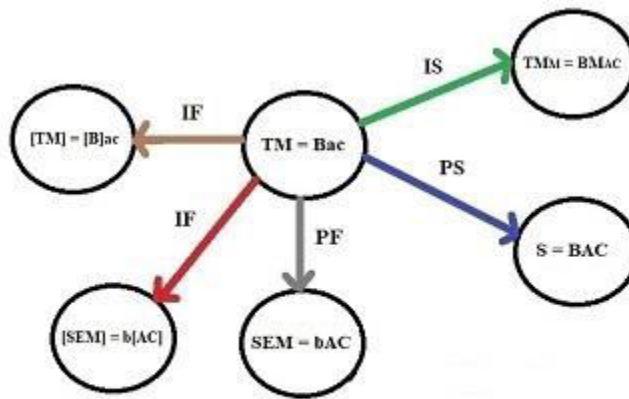
We know that Adam Smith’s traditional market(Smith 1776) is an economy only market(B); and when the traditional market(TM) is under a binding socio-environmental externality threat(ac), then the economy(B) is affected by a binding socio-environmental sustainability gap(BSESG); and therefore, the structure of the traditional market(TM) a la Adam Smith under binding socio-environmental externality threat can be stated as follows:

$$\mathbf{TM} = \mathbf{Bac} = \mathbf{B(BSESG)}, \text{ where } \mathbf{BSESG} = \mathbf{ac}$$

The expression above simply says that the traditional market(TM) is being affected by an embedded and binding socio-environmental sustainability gap(BSESG) affecting the working of the dominant economy(B). Paradigm evolution theory and sustainability thinking(Muñoz 2019) indicates that a binding sustainability gap leads to paradigm evolution, before or after paradigm death, in this holds true too in the case the traditional market under a binding socio-environmental sustainability gap(BSESG).

**ii) The paradigm evolution routes available to the traditional market when under binding socio-environmental externality threats**

All evolution routes available to the traditional market when under binding socio-environmental externality or sustainability gaps(BSESG = ac) have been highlighted recently(Muñoz 2021b) as shown in Figure 1 below:



**Figure 1** The pure capitalism market(TM) under binding socio-environmental sustainability gap pressures (ac)

Based on Figure 1 above and following the arrows from right to left we can see that that the traditional market or pure capitalism (TM = Bac) when under binding socio-environmental sustainability threats(BSESG = ac) has five evolution paths available for action as the general evolution model indicates: 1) it can go the socio-environmental externality management route  $TM_M = BM_{AC}$  as indicated by the green arrow; 2) it can go the sustainability market route  $S = BAC$  as indicated by the blue arrow; 3) it can go the perfect socio-environmental market route  $SEM = bAC$  as indicated by the grey arrow; 4) it can go the imperfect socio-environmental

market route  $[SEM] = b[AC]$  as indicated by the red arrow; and 5) it can go the authoritarianism flip route  $[TM] = [B]ac$  as indicated by the brown arrow.

### iii) The ways to save capitalism a la traditional market from binding socio-environmental externality threats

If we decide to take action to save capitalism from the binding socio-environmental externality threat ( $BSESG = ac$ ) by ensuring that the economic component remains in full dominant form ( $B$ ) while we take full or partial socio-environmental action, then we have two paradigm evolution routes that we can follow according to Figure 1 above: 1) a perfect shift from traditional markets  $TM = Bac$  to sustainability markets  $S = BAC$  after fully fixing the binding socio-environmental sustainability gap ( $BSESG = ac$ ); and 2) an imperfect shift from traditional markets  $TM = Bac$  to socio-environmental externality management markets  $TM_M = BM_{AC}$  after simply patching the binding socio-environmental sustainability gap ( $BSESG = ac$ ), a situation that was shared graphically quite recently (Muñoz 2021b) as indicated in Figure 2 below:

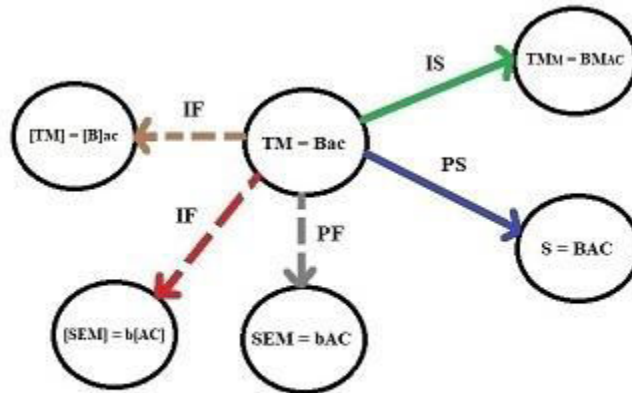


Figure 2 The pure capitalism market(TM) evolution when keeping its component dominance structure intact when it is saved.

Figure 2 above clearly conveys by means of continuous arrows that there are two ways of saving capitalism from binding socio-environmental externality threats ( $BSESG = ac$ ): i) a perfect shift (PS) as indicated by the blue arrow from traditional markets ( $TM = Bac$ ) to sustainability markets ( $S = BAC$ ) after fully internalizing socio-environmental concerns, closing that way the binding socio-environmental sustainability gap ( $BSESG = ac \dashrightarrow AC$ ); and ii) an imperfect shift (IS) as indicated by the green arrow from traditional markets ( $TM = Bac$ ) to socio-environmental externality management markets ( $TM_M = BM_{AC}$ ), where the binding sustainability gap ( $BSESG = ac$ ) is not fully fixed, it is just patched since  $BSESG = ac \dashrightarrow M_{AC}$ , where full fix cost  $AC > M_{AC}$ , which means that the binding socio-environmental sustainability gap is still opened or remains opened when the market is under socio-environmental externality management. Notice that either of those solutions to save capitalism would be consistent with the urgent call made in 1987 by the Brundtland Commission (WCED 1987) to make economic development more responsible both in social and environmental terms at the same time as they

address fully the call, one aims at a full fix and the other aims at patching the socio-environmental externality problem; and therefore, the environmentally friendly actions taken in 2012 by the United Nations Commission on Environment and Development (UNCSD 2012a; UNCSD 2012b) took place outside socio-environmental concerns.

### **c) The scope of this paper**

Notice also that the consequence of failing to save capitalism a la traditional market from binding socio-environmental externality threats as indicated by the broken arrows in Figure 2 above means a move away from pure capitalism as we know it as then full economic dominance is lost as the perfect traditional market collapses. Hence, this paper focuses on the socio-environmental externality threat incrustated in the perfect traditional market model due to its socio-environmental externality neutrality assumption and the failure to fix it or to patch it to prevent the collapse of the perfect traditional market model when under binding socio-environmental externality threats. And this raises the questions, which are the paradigm evolutions routes available in the case perfect capitalism is brought down by binding socio-environmental sustainability gap pressures? What is the nature of the market structure associated with each of those routes? Among the goals of this paper is to provide answers to these questions.

### **Goals of this paper**

a) To point out that if the traditional market collapses because no corrective socio-environmental action is taken or action takes place too late the system moves away from capitalism as we know it; and b) To highlight graphically and analytically all paradigm evolution routes available after the perfect traditional market paradigm collapses.

### **Methodology**

First, the terminology used in this paper is shared. Second, operational concepts, types of market structures and model evolution rules are listed. Third, the paradigm evolution options to capitalism when it fails under binging socio-environmental externality threats are pointed out graphically. Fourth, the structure and characteristics of each paradigm evolution route away from capitalism as we know it are listed. And finally seventh, some food for thoughts and relevant conclusions are provided.

### **Terminology**

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M1 = Perfect market M1                      [M1] = Imperfect market M  
 [M1] = Authoritarian market M1         $M_{M1}$  = M1 under externality management  
 PS = Perfect shift                              IS = Imperfect shift  
 PF = Perfect paradigm flip                IF = Imperfect paradigm flip  
 M = Perfect lower level market M       N = Perfect lower level market N  
 L = Perfect higher level market L        [ ] = Authoritarianism  
 [M] = Market M under authoritarianism    [N] = Market N under authoritarianism  
 TM = The perfect traditional market      [TM] = Market under dictatorship  
 RM = The perfect red market               $TM_M$  = Market under externality management  
 DS = The perfect social market          [DS] = Social market under dictatorship  
 S = The perfect sustainability market      SEM = the perfect socio-environmental market  
 [SEM] = Socio-environmental market under dictatorship  
 SESG = Socio-environmental sustainability gap  
 BSESG = Binding socio-environmental sustainability gap

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## **Operational concepts, types of market structures and model evolution rules**

### **a) Operational concepts**

- 1) Perfect market**, *a market where there is dominant component equality and freedom*
- 2) Imperfect market**, *a market where there is component equality, but not freedom*
- 3) Perfect paradigm shift**, *a shift from a perfect market to a higher level perfect market*
- 4) Paradigm management**, *the handling of cost externalization through externality management*
- 5) Paradigm flip**, *a flip to the inverse opposite paradigm*
- 6) Perfect paradigm flip**, *a flip to the perfect inverse opposite paradigm*

7) **Imperfect paradigm flip**, a flip to the imperfect inverse opposite paradigm

8) **Authoritarian market**, an imperfect market

9) **Sustainability market**, the perfect market where there is full co-component equality and freedom

10) **Externality management market**, the market where there is partial co-component equality, but no freedom.

11) **Imperfect paradigm shift**, a shift from a perfect market to a higher level imperfect market

## b) Type of market structures

Given the dummy market models  $M_1 = Xy$  and  $M_2 = xY$ , the following can be said about different market structures:

### 1) Perfect markets

There is dominant component equality and freedom

$M_1 = Xy = A$  dominant component X perfect market

$M_2 = xY = A$  dominant component Y perfect market

### 2) Imperfect markets

There is dominant component equality, but no freedom, they are dictatorship based markets

$[M_1] = [X]y = A$  dominant component X imperfect market

$[M_2] = x[Y] = A$  dominant component Y imperfect market

### 3) Externality management market

They are ongoing government intervention based markets

$M_{M1} = XY_M = A$  dominant component X externality Y management market

$M_{M2} = X_MY = A$  dominant component Y externality X management market

### 4) The sustainability market

The perfect market where there is full co-component equality and freedom

$S = M_1.M_2 = (Xy)(xY) = XY$

Details about paradigm merging rules and paradigm shift rules can be found in the publication about paradigm evolution and sustainability thinking (Muñoz 2019).

**c) Model evolution rules**

***i) Perfect paradigm shift***

The externality gap affecting the market, y or x, is fully closed and internalized

**PS**

$$M_1 = Xy \text{-----} \rightarrow M_3 = XY$$

**PS**

$$M_2 = xY \text{-----} \rightarrow M_3 = XY$$

***ii) Imperfect paradigm shift or imperfect dominated component flip***

The externality gap affecting the market, y or x, is patched and managed as an externality problem

**IS**

$$M_1 = Xy \text{-----} \rightarrow M_4 = XM_Y$$

**IS**

$$M_2 = xY \text{-----} \rightarrow M_5 = M_XY$$

***iii) Perfect paradigm flip***

Paradigms flip to the perfect inverse opposite model

**PF**

$$M_1 = Xy \text{-----} \rightarrow M_2 = Xy$$

**PF**

$$M_2 = xY \text{-----} \rightarrow M_1 = Xy$$

***iv) Imperfect paradigm flip***

Paradigms flip to the imperfect inverse opposite model

**IF**



$$M_1 = Xy \text{-----} \rightarrow M_6 = x[Y]$$

IF

$$M_2 = xY \text{-----} \rightarrow M_7 = [X]y$$

### The structure of paradigm evolution routes after the fall of capitalism

When capitalism cannot be saved or no action is taken to save it when under binding socio-environmental externality threats it collapses, losing its full economic dominant status, partially or totally in the process, a situation that can be indicated graphically if we break the blue arrow towards the perfect sustainability market and if we break the green arrow towards the imperfect shift to socio-environmental externality management markets as well as by placing now continuous arrows on each possible paradigm flip in Figure 2 above. Making the changes indicated above on Figure 2 in the introduction leads to the structure of paradigm evolution routes available after the fall of capitalism as shown in Figure 3 below:

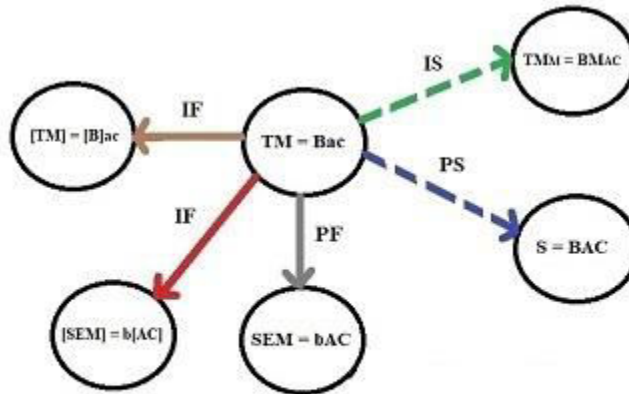


Figure 3 The pure capitalism market(TM) under binding socio-environmental sustainability gap pressures(ac) when it is not saved

Based on Figure 3 above when capitalism(TM = Bac) cannot be saved as indicated by the broken arrows it collapses and flips towards the perfect socio-environmental market SEM = bAC or towards the imperfect socio-environmental market [SEM] = b[AC] or towards an authoritarianism based market [TM] = [B]ac as indicated by the continuous arrows. Therefore, when the perfect traditional market paradigm collapses economic dominance B is lost fully or partially as we move away from the world of capitalism as we know it. Notice that the perfect socio-environmental market SEM = bAC is a market where there is socio-environmental equality and freedom; and that the imperfect socio-environmental market [SEM] = b[AC] is a market where there is socio-environmental equality, but no freedom.

## The nature of the market structure associated with each of paradigm flip routes away from perfect capitalism

### i) The perfect socio-environmental market flip

The flip from pure capitalism  $TM = Bac$  to perfect socio-environmental markets  $SEM = bAC$  is a perfect flip(PF) from an economy dominant model(B) to a society and environment dominant model(AC), which can be stated as below:

**PF**

$TM = Bac$  -----→  $SEM = bAC$

Notice that this is a flip from a perfect market to an inverse opposite perfect market; and therefore, a flip from economic dominance to socio-environmental dominance. A flip from thinking that the society and the environment(ac) exist to meet economic goals to the thinking that the economy(b) exists to meet socio-environmental goals.

### ii) The imperfect socio-environmental market flip

The flip from pure capitalism  $TM = Bac$  to imperfect socio-environmental markets  $[SEM] = b[AC]$  is an imperfect flip(IF) from an economy dominant model(B) to an imperfect society and environment dominant model([AC]), which can be indicated as below:

**IF**

$TM = Bac$  -----→  $[SEM] = b[AC]$

Notice that this is a flip from a perfect market to an inverse opposite imperfect market, and therefore, a flip from free market to an inverse opposite non-free market. A flip from the thinking economic component equality and freedom to the imperfect inverse thinking socio-environmental component equality without freedom.

### iii) The flip towards market authoritarianism

The flip from pure capitalism  $TM = Bac$  to authoritarianism based markets  $[TM] = [B]ac$  is an imperfect flip(IF) from a perfect dominant economy model(B) to an imperfect economy model([B]), which can be stated as follows:

**IF**

$TM = Bac$  -----→  $[TM] = [B]ac$

Notice that this is a flip from a perfect market to an imperfect market; and therefore, this a flip from a free economy market to a non-free economy market. A flip from the thinking

economic component equality and freedom to the thinking economic component equality without freedom.

### **Main implication:**

In a world of capitalism under which binding socio-environmental sustainability gaps matter as indicated above, the fall of capitalism due to binding socio-environmental externalities leaves 3 possible evolution routes to move away from capitalism as usual: the flip to perfect socio-environmental markets, the flip to imperfect socio-environmental markets, and the flip to economic authoritarianism.

### **Food for thoughts**

1) Is socio-environmental component equality a necessary and sufficient condition for the existence of true perfect socio-environmental markets? I think no, what do you think?; 2) Is the socio-environmental market a partial co-dominance market? I think yes, what do you think?; and 3) Does the perfect traditional market requires a component equality neutrality assumption in order to exist? I think yes, what do you think?

### **Conclusions**

1) It was stressed that if proper socio-environmental externality action is taken to address this binding threat, the traditional market can be saved through a full fix or a patched; 2) It was pointed out that if not proper socio-environmental externality action is taken or if it is taken too late, the traditional market will collapse; and the system moves away from capitalism as we know it; and 3) It was highlighted that after the capitalism market collapse, the full dominance of the economy is lost, partially or totally as the system flips towards perfect socio-environmental markets or imperfect socio-environmental markets or towards dictatorship based traditional markets.

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