

Ceteris Paribus 101: The Golden Market Paradigm–Flawed Market Paradigm Framework: Explaining why resource allocation can never be efficient under distorted flawed market paradigm prices, whether in linear or circular markets?

By

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Abstract

If prices reflect non-true costs, they should be expected to lead to a misallocation of resources. If prices reflect true costs we know we should expect them to lead to an efficient resource allocation. If prices do not reflect true costs, then we should not expect them to lead to efficient margins. If prices reflect true costs, we know we should expect efficient margins to hold at the equilibrium point. If prices are distorted, we have a flawed paradigm, linear or circular. If prices are not distorted, we have a golden paradigm. If price distortions exist, we have flawed paradigm sustainability gaps; and if flawed paradigm sustainability gaps exist we have Pareto improvement boundless at play between the flawed paradigm equilibrium point and the golden paradigm equilibrium point. The above discussion highlights the fact that it is not the shape of the market that determines that the nature of resource use efficiency, but the true nature of market prices as any market shape under price distortions should be expected to lead to an inefficient allocation of resources. And this means that we can visualize upwards and downwards trends in optimality thinking whether we look at the flawed paradigm-golden paradigm sustainability framework from the point of view of distortion creation or distortion elimination or from the point of view of cost externalization or cost internalization, opening the door to the idea of optimal golden paradigm theory and theorems, which take us beyond business as usual thinking. And this raises the question: **Why resource allocation can never be efficient under distorted flawed market paradigm prices, whether in linear or circular markets?** Among the goals of this paper is to provide an answer to this question both analytically and graphically.

Relevant concepts

1) **Resource use efficiency (RUE)**, the improving of productivity or efficiency of particular resources within an existing production system.

2) **Full resource allocation efficiency (FRAE)**, the condition where market prices reflect the full costs of production, allowing all resources to be efficiently allocated, and hence be efficiently used.

3) **Partial resource allocation efficiency (PRAE)**, the condition where market prices do not reflect the full costs of production, allowing resources whose costs are included in prices to be efficiently allocated while resources whose costs remain excluded are inefficiently allocated.

4) **The resource use allocation efficiency principle (TRUAEP)**, a system can improve the efficiency of selected resources while remaining partially efficient overall if some production costs remain outside the pricing mechanism.

5) **Pareto optimality (PO)**, the situation where no component can be made better off without affecting other components.

6) **Full Pareto optimality (FPO)**, the condition where there are no Pareto improvement opportunities available reflecting the existence of full resource allocation efficiency.

7) **Partial Pareto optimality (PPO)**, the condition where no Pareto improvements are available among the components recognized by the pricing mechanism, reflecting the existence of partial resource allocation efficiency.

8) **The Pareto optimality principle (TPOP)**, A system can achieve partial Pareto optimality for selected components while still generating Pareto optimality gaps when excluded production costs prevent full cost reflection in prices.

9) **Sustainability gap (SG)**, the different between full cost pricing and partial cost pricing

10) **Maximum sustainability gap (MSG)**, the situation when all costs of production are left out of the pricing mechanism of the market as there is full cost externalization.

11) **Partial sustainability gap (PSG)**, the situation when not all costs of production are left out of the pricing mechanism of the market as there is partial cost externalization.

12) **The sustainability gap principle (TSGP)**, a system can expand the partial sustainability gap position of selected resources(e.g. economic, non-economic) while still expanding further sustainability gaps or Pareto optimality gaps if some production costs remain outside the pricing mechanism.

Goals of this paper

1) To state the Golden Market Paradigm–Flawed Market Paradigm Framework; 2) to use this framework to explain why resource allocation can never be efficient under distorted flawed market prices, whether in linear or circular markets; and 3) To apply this framework to

traditional market thinking and use this application of the framework to explain why resource allocation can never be efficient under distorted traditional market prices, whether in linear or circular markets

Methodology

First, the terminology used is given. Second, the nature of golden paradigms is described. Third, the nature of flawed paradigms is highlighted. Fourth, the golden paradigm-Flawed paradigm framework is introduced. Fifth, the golden paradigm –Linear flawed paradigm framework is presented. Sixth, the golden paradigm-Circular flawed paradigm framework is pointed out. Seventh, the golden paradigm-Linear flawed paradigm under assumed reality is described. Eighth, the golden paradigm-Circular flawed paradigm under assumed reality is stressed. Ninth, the golden paradigm-Linear traditional market framework under reality is summarized. Tenth, the golden paradigm-Linear traditional market framework under assumed reality is shared. Eleventh, the golden paradigm-Circular traditional market framework under reality is given. Twelfth, the golden paradigm-Circular traditional market framework under assumed reality is presented. Thirteenth, the question at hand is addressed from the angle of distorted flawed paradigm prices, whether they are linear or circular markets. Fourteenth, the question at hand is addressed from the angle of distorted traditional market paradigm prices, whether they are linear or circular markets. Fifteenth, the reality and assumed reality under which golden paradigms, flawed paradigms, and traditional market paradigms, whether linear or circular are mapped. Sixteenth, the reality and assumed reality under which system gaps, like sustainability gaps, Pareto optimality gaps, resource use efficiency gaps and pricing gaps operate are mapped too and implication indicated. And eighteenth, some relevant conclusions are articulated.

Terminology

P = Price

Q = Quantify

D = Demand

RUE = Resource use efficiency

GOP = Golden paradigm

FLP = Flawed paradigm

GOPMS = Golden paradigm market supply

GOP = Golden paradigm

FLP = Flawed paradigm GOPMQ = Golden paradigm market quantity
 GOPMP = Golden paradigm market price FLPMQ = Flawed paradigm market quantity FLPMP = Flawed paradigm market price
 FLPSG = Flawed paradigm sustainability gap
 NFLPSG = No flawed paradigm sustainability gap
 FLPPOG = Flawed paradigm Pareto optimality gap
 FLPRUEG = Flawed paradigm resource use efficiency gap
 FLPPG = Flawed paradigm pricing gap
 FPO = Full Pareto optimality PPO = Partial Pareto optimality
 RUE = Resource use efficiency RAE = Resource allocation efficiency
 FRUE = Full resource use efficiency PRUE = Partial resource use efficiency
 FRAE = Full resource allocation efficiency
 PRAE = Partial resource allocation efficiency
 FRUE = FRAE PRUE = PRAE
 PD = Price distortion NPD = No price distortion
 LPD = Linear price distortion CPD = Circular price distortion
 FCP = Full cost pricing NFCP = No full cost pricing
 PCP = Partial cost pricing SG = Sustainability gap
 NSG = No sustainability gap FLCP = Full linear cost pricing
 NFLCP = No full linear cost pricing FCCP = Full circular cost pricing
 NFCCP = No full circular cost pricing LFLP = Linear flawed paradigm
 LFLPMP = Linear flawed paradigm market price
 LFLPMS = Linear flawed paradigm market supply
 LFLPMQ = Linear flawed paradigm market quantity
 LFLPSG = Linear flawed paradigm sustainability gap

LFLPPOG = Linear flawed paradigm Pareto optimality gap

LFLPRUEG = Linear flawed paradigm resource use efficiency gap

LFLPPG = Linear flawed paradigm pricing gap CFLP = Circular flawed paradigm

CFLPMP = Circular flawed paradigm market price

CFLPMS = Circular flawed paradigm market supply

CFLPMQ = Circular flawed paradigm market quantity

CFLPSG = Circular flawed paradigm sustainability gap

CFLPPOG = Circular flawed paradigm Pareto optimality gap

CFLPRUEG = Circular flawed paradigm resource use efficiency gap

CFLPPG = Circular flawed paradigm pricing gap COPD = Corrected price distortion

COLPD = Corrected linear price distortion COCPD = Corrected circular price distortion

TM = Traditional market

TMP = Traditional market price

TMQ = Traditional market quantity

TMS = Traditional market supply

TMPOG = Traditional market Pareto optimality gap

TMSG = Traditional market sustainability gap

TMRUEG = Traditional market resource use efficiency gap

TMPPG = Traditional market pricing gap

CTM = Circular traditional market

CTMP = Circular traditional market price

CTMQ = Circular traditional market quantity

CTMS = Circular traditional market supply

CTMPOG = Circular traditional market Pareto optimality gap

CTMSG = Circular traditional market sustainability gap

CTMRUEG = Circular traditional market resource use efficiency gap

CTMPG = Circular traditional market pricing gap

DMP = Distorted market price

PO = Pareto optimality

NDMP = No distorted market price

POG = Pareto optimality gap

LPOG = Linear Pareto optimality gap CPOG = Circular Pareto optimality gap

LPPO = Linear partial Pareto optimality CPOP = Circular partial Pareto optimality

LPRUE = Linear partial resource use efficiency CPRUE = Circular partial resource use efficiency

LPCP = Linear partial cost pricing CPCP = Circular partial cost pricing

TMPCP = Traditional market partial cost pricing TMPRUE = Traditional market partial resource use efficiency

TMPPPO = Traditional market partial Pareto optimality CTMPCP = Circular traditional market partial cost pricing

CTMPRUE = Circular traditional market partial resource use efficiency

CTMPPPO = Circular traditional market partial Pareto optimality

SGPNA = Sustainability gap production neutrality assumptions

NSGPNA = No sustainability gap production neutrality assumptions

POGPNA = Pareto optimality gap production neutrality assumptions

NPOGPNA = No Pareto optimality gap production neutrality assumptions

The nature of golden market paradigms

Golden market paradigms are those based on full cost pricing or true cost pricing; and hence, their prices include all production costs or they reflect the true opportunity cost of production, a situation described in Figure 1 below:

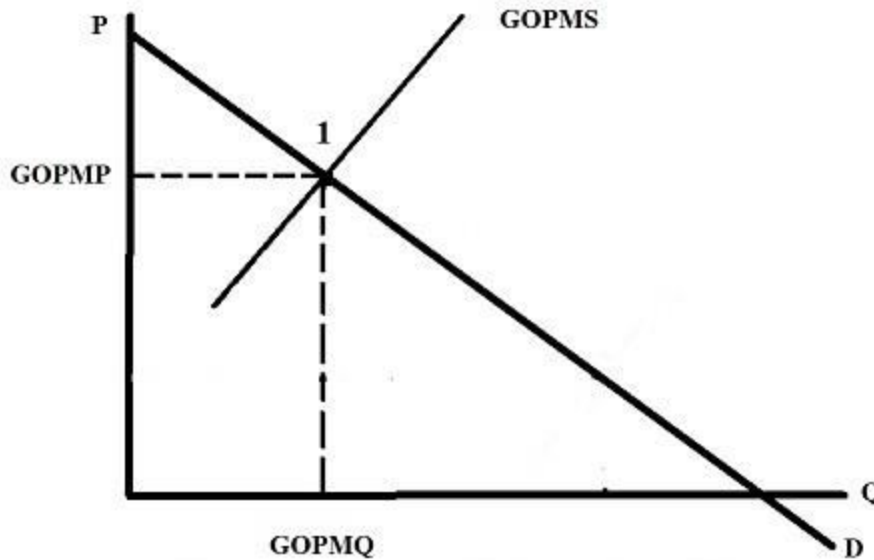


Figure 1 The structure of the golden market paradigm

Figure 1 above states the structure of the golden market paradigm (GOP), where at point 1 there are no price distortions (NPD) as it is a full cost pricing point, which means that at point 1 there is full Pareto optimality (FPO). In other words, golden market paradigms (GOP) display full Pareto optimality.

At point 1 in Figure 1 above we have a golden market paradigm point, where the market is cleared by the golden market price GOPMP that cuts supply GOPMS and demand D and the quantity produced and consumed is GOPMQ. At this point there is full Pareto optimality (FPO) as there are no sustainability gaps ($SG = 0$) in reality when all costs are accounted for, and hence, there is here a fully efficient allocation of all resources, and there is no room for any resource misuse. Hence, Figure 1 above summarizes the optimal golden market paradigm theory as at point 1 there is full Pareto optimality (FPO).

Implication 1

Golden paradigms are those where there are no price distortions in the pricing mechanism, and therefore, they operate under full Pareto optimality, which drives full resource use efficiency.

The nature of flawed market paradigms

. Flawed market paradigms are those not based on full cost pricing or those based on non-true cost pricing; and hence, their prices do not include all production costs or they do not reflect the true opportunity cost of production, a situation detailed in Figure 2 below:

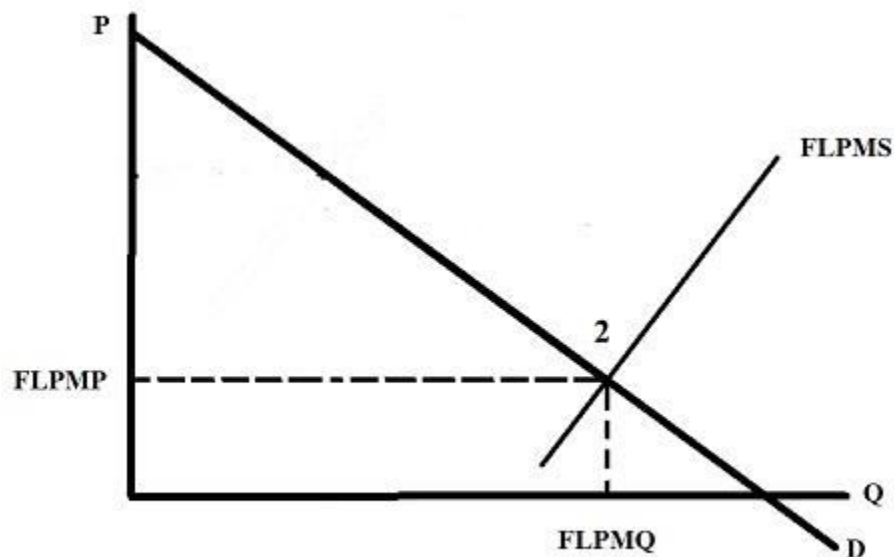


Figure 2 The structure of the flawed market paradigm

Figure 2 above represents the structure of the flawed market paradigm, where at point 2 there are price distortions (PD) as it is a partial cost pricing point, which means that at point 2 there is partial Pareto optimality (PPO). In different terms, flawed market paradigms (FLP) display partial Pareto optimality (PPO).

At point 2 in Figure 1 above we have a flawed market paradigm point, where the market is cleared by the flawed market price FLPMP that cuts supply GOPMS and demand D and the quantity produced and consumed is FLPMQ. At this point there is partial Pareto optimality (PPO) as there are sustainability gaps ($SG > 0$) in reality but they are assumed away, and hence, there is here a partial efficient allocation of all resources, and there is room for any resource misuse. Therefore, Figure 2 above summarizes the optimal flawed market paradigm theory as at point 2 there is partial Pareto optimality (PPO).

Implication 2

Flawed paradigms are those where there are price distortions in the pricing mechanism, and therefore, they operate under partial Pareto optimality, which drives resource use inefficiency.

The golden market paradigm-Flawed market paradigm framework

If we link the golden market (GOP) component with the flawed market (FLP) component we create a sustainability gap framework that goes from full sustainability (FS) to partial sustainability (PS) as indicated in Figure 3 below:

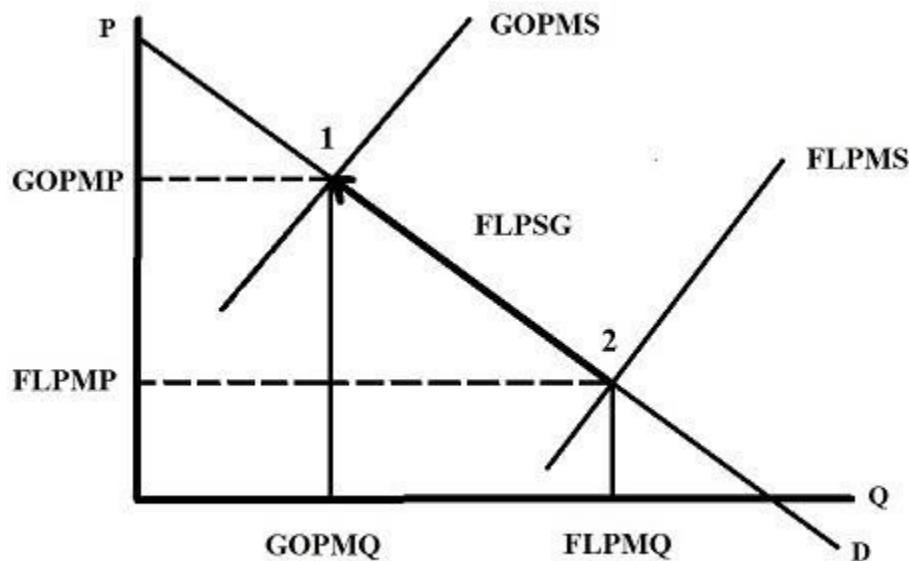


Figure 3 The golden market paradigm-Flawed market paradigm framework under reality

Figure 3 above summarizes the nature of the golden market paradigm-Flawed market paradigm framework under reality. Notice that the continuous arrow from point 2 to point 1 means that there is no sustainability gap production neutrality assumptions (NSGPNA) at play here, so flawed market paradigms cannot expand without generating sustainability gaps (SG). Therefore in Figure 3 above at point 2 we cannot assume that there are not sustainability gaps as sustainability gaps exists ($SG > 0$). As the flawed market paradigm sustainability gap (FLPSG) comes from price distortions, then it is in essence a flawed paradigm Pareto optimality gap (FLPPOG) so that $FLPSG = FLPPOG$, which cannot be assumed away. In other terms since at point 1 there is full cost pricing (FCP) and at point 2 there is no full cost pricing (NFCP), their difference is the sustainability gap (FLPSG) separating flawed paradigms (FLP) from golden paradigms (GOP), which happens to be the flawed paradigm pareto optimality gap (FLPPOG) since $FLPSG = FLPPOG$.

Hence, Figure 3 above highlights that there is a flawed paradigm sustainability gap (FLPSG) separating the flawed market paradigm (FLP) at point 2 from golden market paradigms at point 1 as shown by the arrow from point 2 to point 1, which explains several things: i) it explains why the quantity produced and consumed in flawed markets is higher ($FLPMQ > GOPMQ$); ii) it explains why prices in flawed markets are lower ($FLPMP < GOPMP$); and iii) it

explains why there is misuse of resources in flawed markets and there is no misuse of resources in golden markets. Figure 3 above also allows us to see the following: i) that at point 1 there are no sustainability gaps ($SG = 0$). In different terms, at point 1 there is full true cost pricing (FCP) so there are no Pareto improvements situations as no component can be made better off without affecting another component; and ii) that at point 2 there are sustainability gaps ($SG > 0$). Therefore, at point 2 there are price distortions (PD), there is no full cost pricing (NFCP). So the flawed market paradigm sustainability gap (FLPSG) is the difference between the distorted price at point 2 or the FLPMP and the full cost market price (FCP) at point 1 or the golden paradigm market price (GOPMP) so that $FLPSG = FCP - NFCP = GOPMP - FLPMP$. And this means that the market price distortion (PD) leads to the flawed paradigm sustainability gap (FLPSG), which encourage a move towards full unsustainability and towards resource misuse, which can be expressed in the following chain format if seen as a move from golden market pricing to flawed market paradigm pricing in Figure 3 above:

PD → FLPSG → Full unsustainability and resource misuse

Note that here all the resources whose cost are not fully accounted for will be misused.

However, if we look at the situation in Figure 3 above as a price correction move (COPD) then the price correction move can be expressed in the following chain format as a move from partial cost pricing/flawed paradigm pricing to full cost pricing/golden paradigm pricing; and hence a move to no flawed market paradigm sustainability gaps (NFLPSG) and full market efficiency:

COPD → NFLPSG → Full sustainability and full resource use efficiency

Note that all the resources are efficiently used here as all costs are fully accounted for.

Finally it can be said that at point 2 there is a flawed market paradigm (FLP) as it reflects partial cost pricing (PCP), and hence there are here resource use distortions or misuses as it is not a golden paradigm (GOP). In other words, when there are flawed market paradigms or paradigms based on partial cost pricing such as in the case of the economy only market, linear or circular, there will be resource misused, specially of non-economic resources such as social and environmental resources (Muñoz 2026a), but when we have golden paradigms under full costing they will lead to no misuse of resources as there is full resource use efficiency such as in the case of true sustainability markets since there are no true sustainability gaps in golden paradigms (Muñoz 2026b). If we had a linear or circular flawed red socialism market or a linear or circular deep environmental market at point 2, then there would be misused of the resources whose costs are left out of the pricing mechanism in those markets. Finally, it can be highlighted here that the distance between point 1 and point 2 can be seen as a space where you can envision or contemplate the existence of positive and negative sustainability gap dynamics or Pareto

optimality gap dynamics or cost pricing gap dynamics or pricing gap dynamics, positive if the dynamics move the market system towards the golden paradigm structure and negative if the dynamics move the market system away from the golden paradigm structure. The idea of the golden paradigm-flawed paradigm framework has been applied recently to the case when the golden paradigm is the true sustainability paradigm and the flawed paradigm is the linear and circular traditional market paradigm to show they work under assumed full resource use efficiency while expanding sustainability gaps (Muñoz 2026c).

Implication 3:

The situation in Figure 3 above applies to all golden paradigms and flawed paradigms that operate under no externality neutrality assumptions, be it linear or circular. Among other things this tells us that resource allocation can never be fully efficient under flawed paradigm market prices as the price distortions under which flawed paradigms work lead to resource misuse, and the accumulation of pressures from such price distortions will lead the flawed paradigm towards full unsustainability.

The Golden paradigm-Linear flawed paradigm framework

If we assume that the flawed market paradigm (FLP) in Figure 3 above is a linear flawed market paradigm (LFLP) so that the $FLPMP = LFLPMP$, the $FLPMQ = LFLPMQ$, and the $FLPMS = LFLPMS$, then we have the situation summarized in Figure 4 below:

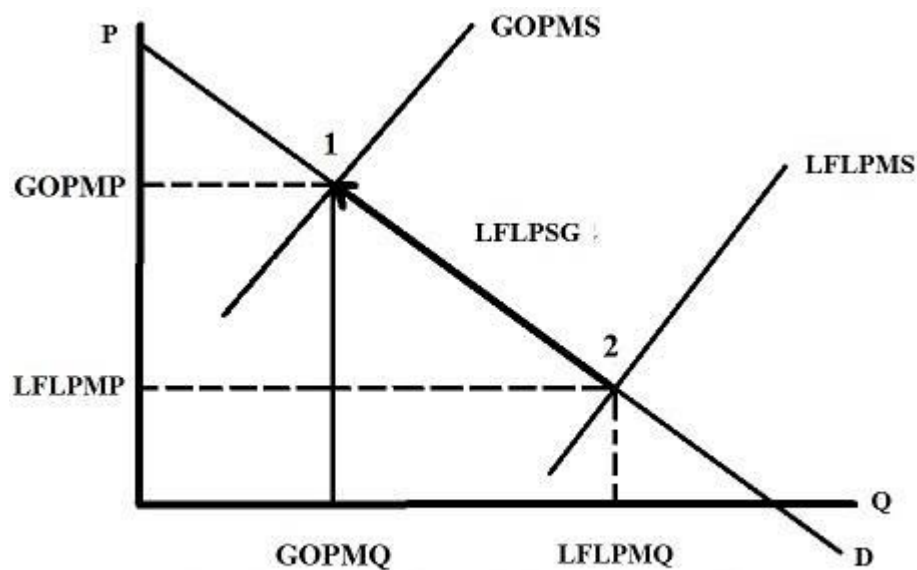


Figure 4 The golden market paradigm-Linear flawed market paradigm framework under reality

Figure 4 above describes the golden market paradigm-Linear flawed market paradigm framework. Notice that the continuous arrow from point 2 to point 1 means that there is no sustainability gap production neutrality assumption (NSGPNA) at play here. Therefore, linear flawed markets cannot expand without producing sustainability gaps (SG), so in Figure 4 above at point 2 we cannot assume that there are not sustainability gaps as sustainability gaps exists ($SG > 0$). As the linear flawed market paradigm sustainability gap (LFLPSG) comes from linear price distortions(LPD), then it is in essence a linear flawed market paradigm Pareto optimality gap (LFLPPOG) so that $LFLPSG = LFLPPOG$, which cannot be assumed away.

Therefore, Figure 4 above points out that that there is a linear flawed paradigm sustainability gap (LFLPSG) separating the linear flawed paradigms (LFLP) at point 2 from the golden market paradigm(GOP) at point 1 as shown by the arrow from point 2 to point 1, which explains several things: i) it explains why the quantity produced and consumed in linear flawed markets is higher ($LFLPMQ > GOPMQ$); ii) it explains why prices in linear flawed markets are lower ($LFLPMP < GOPMP$); and iii) it explains why there is misuse of resources in linear flawed markets and no misuse of any resource in golden paradigm markets(GOP). Figure 4 above also allows us to see that at point 1 there are no sustainability gaps ($SG = 0$), and hence there are no Pareto improvements situations as no component can be made better off without affecting another component; and at point 2 there is a linear price distortion (LPD) as there is no full linear cost pricing (NFLCP), which means that resource misuse will happen if their costs are not fully accounted for. Hence the linear flawed market sustainability gap (LFLPSG) is the difference between the no full costing linear price (NFLCP) or linear flawed market price (LFLPMP) and the full cost market price (FCP) or golden paradigm market price (GOPMP) so that $LFLPSG = FCP - NFLCP = GOPMP - LFLPMP$. And this means that the linear flawed market price distortion (LPD) leads to the linear flawed market sustainability gap (LFLPSG), which encourage a move towards full unsustainability and resource misuse, a situation that can be expressed in the following chain format if seen as a move from golden market paradigm pricing to linear flawed market pricing in Figure 4 above:

LPD → LFLPSG → Full unsustainability and resource misuse

Note that here all the resources whose costs are not accounted for fully will be misused.

However, if we look at the situation in Figure 4 above as a flawed linear market price correction move (COLPD) then the price correction move can be expressed in the following chain format as a move from distorted linear market pricing to full cost pricing; and hence a move to no sustainability gaps (NSG since $SG = 0$) and full market efficiency:

COLPD → NSG → Full sustainability and full resource use efficiency

Note that all the resources are efficiently used here as all costs are accounted for.

Finally it can be said that at point 2 there is linear price distortions and hence, there are resource use distortions as resources whose costs are not fully accounted for are misused as this is a point under sustainability gaps ($SG > 0$).

Implication 4:

The situation in Figure 4 above applies to linear flawed markets that operate under no externality neutrality assumptions. Among other things this tells us that resource allocation can never be fully efficient under linear flawed paradigm market prices as the linear price distortions under which linear flawed paradigms work lead to resource misuse, and the accumulation of pressures from such linear price distortions will lead the linear flawed paradigm towards full unsustainability.

The Golden paradigm-Circular flawed paradigm framework

If we assume that the flawed market paradigm (FLP) in Figure 3 above is a circular flawed market paradigm (CFLP) so that the $FLPMP = CFLPMP$, the $FLPMQ = CFLPMQ$, and the $FLPMS = CFLPMS$, then we have the situation summarized in Figure 5 below:

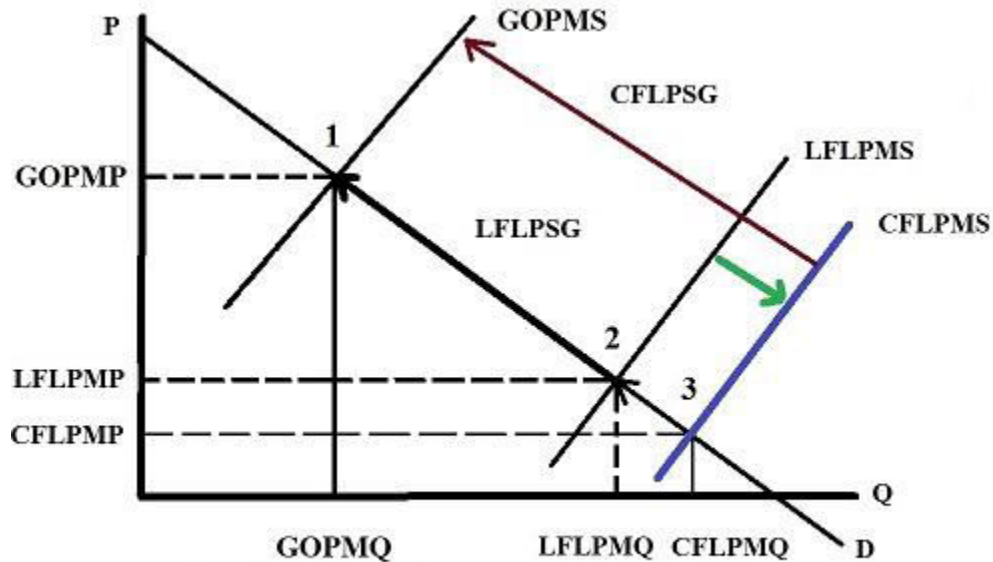


Figure 5 The golden market paradigm-Circular flawed market paradigm framework under reality

Figure 5 above shows the golden market paradigm-circular flawed market paradigm framework. Notice that the continuous arrow from point 3 to point 1 means that there is no sustainability gap production neutrality assumptions (NSGPNA) are at play. So circular flawed markets cannot expand without creating sustainability gaps (SG), so in Figure 5 above at point 3

we cannot assume that there are not sustainability gaps as sustainability gaps exists ($SG > 0$). As the circular flawed market paradigm sustainability gap (CFLPSG) comes from circular price distortions (CPD), then it is in essence a circular flawed market paradigm Pareto optimality gap (CFLPPOG) so that $CFLPSG = CFLPPOG$, which cannot be assumed away.

Then Figure 5 above points out that that there is a circular flawed paradigm sustainability gap (CFLPSG) separating the circular flawed paradigms (CFLP) at point 3 from the golden market paradigm (GOP) at point 1 as shown by the arrow from point 3 to point 1, which explains several things: i) it explains why the quantity produced and consumed in circular flawed markets is higher ($CFLPMQ > GOPMQ$); ii) it explains why prices in circular flawed markets are lower ($CFLPMP < GOPMP$); and iii) it explains why there is misuse of resources in circular flawed markets as focused in these markets is on improving resource use efficiency, not on full cost pricing, and there is no misuse of any resource in golden paradigm markets (GOP). Figure 5 above also permits us to see that at point 1 there are no sustainability gaps ($SG = 0$), and hence there are no Pareto improvements situations as no component can be made better off without affecting another component; and at point 3 there is a circular price distortion (CPD) as there is no full circular cost pricing (NFCCP). This means that resource misuse will happen if their costs are not fully accounted for. Hence the circular flawed market sustainability gap (CFLPSG) is the difference between the distorted circular price (NFCCP) or circular flawed market price (CFLPMP) and full cost pricing market price (FCP) or golden paradigm market price (GOPMP) so that $CFLPSG = FCP - NFCCP = GOPMP - CFLPMP$. And this indicates that the circular flawed market price distortion (CPD) leads to the circular flawed market sustainability gap (CFLPSG), which encourages a move towards full unsustainability and resource misuse, a situation that can be indicated in the following chain format if seen as a move from golden market paradigm pricing to circular flawed market pricing in Figure 5 above:

CPD → CFLPSG → Full unsustainability and resource misuse

Note that here all the resources whose costs are not accounted for fully will be misused.

However, if we look at the situation in Figure 5 above as a flawed circular market price correction move (COCPD) then the price correction move can be expressed in the following chain format as a move from distorted circular market pricing to full cost pricing in golden paradigms; and hence a move to no sustainability gaps (NSG since $SG = 0$) and full market efficiency:

COCPD → NSG → Full sustainability and full resource use efficiency

Note that all the resources are efficiently used here as all costs are accounted for.

Finally it can be said that at point 3 there is circular price distortion (CPD), and hence, there are resource use distortions as resources whose costs are not fully accounted for are

misused as this is not a point of no sustainability gaps ($SG > 0$). If we look at the information in Figure 5 above as a move from linear flawed market thinking (LFLP) at point 2 to circular flawed market thinking (CFLP) at point 3, we see the following: i) The move from point 2 to point 3 increases size of the sustainability gap (SG) in the circular flawed market as $CFLPSG > LFLPSG$ by the distance from point 3 to point 2. and hence the market price distortions in circular traditional markets increases due to increasing resource use efficiency so $CPD > LPD$ as $CFLPMP < LFLPMP$; and ii) that increasing resource use efficiency leads other resource use distortions on top of the existing market price distortions which will drive even more misuse of some resources. Finally it can be said that at point 3 there is a circular price distortion (CPD), and therefore, there are resource use distortions as the resource use efficiency of specific resources is the goal in circular markets as this point 3 is not a point of full cost pricing since partial costing (PCP) is at play here.

Implication 5:

The situation in Figure 5 above applies to circular markets that operate under no externality neutrality assumptions. Among other things this tells us that resource allocation can never be fully efficient under circular flawed paradigm market prices as the circular price distortions under which circular flawed paradigms work lead to resource misuse, and the accumulation of pressures from such circular price distortions will lead the circular flawed paradigm towards full unsustainability.

The Golden paradigm-Linear flawed paradigm framework under assumed reality

If we assume that the linear sustainability gap $LFLPSG$ does not matter ($LFLPSG = 0$) or it can be assumed away through sustainability gap production neutrality assumptions (SGPNA), then Figure 4 above is transformed into Figure 6 below:

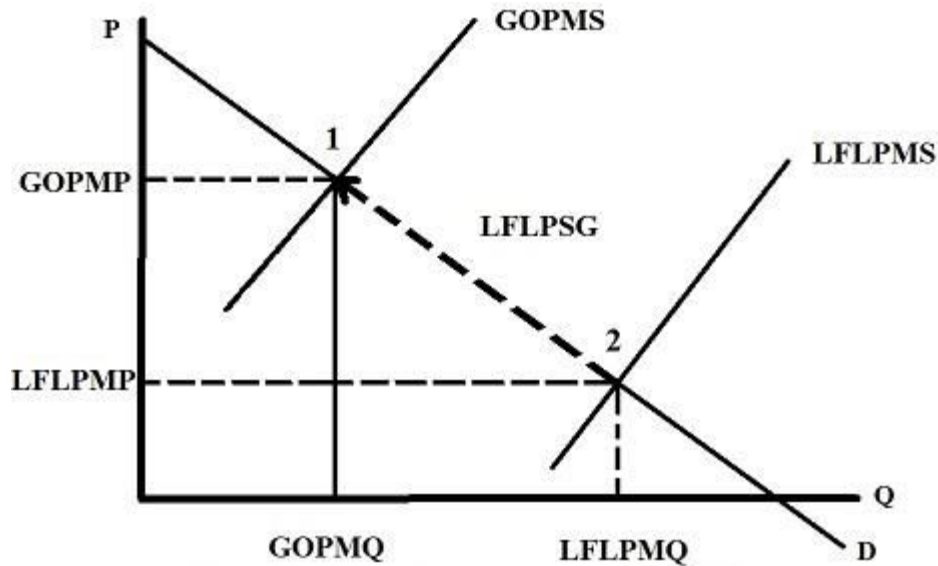


Figure 6 The golden market paradigm-The linear flawed market paradigm under assumed reality framework

Notice that the broken arrow from point 2 to point 1 means that sustainability gap production neutrality assumptions (SGPNA) are at play, so linear flawed markets can expand for ever without creating sustainability gaps (SG). Hence in Figure 6 above at point 2 we assume that there are not sustainability gaps ($SG = 0$), when there are ($SG > 0$). As the linear flawed market paradigm sustainability gap (LFLPSG) comes from linear price distortions, then it is in essence a linear flawed market paradigm Pareto optimality gap (LFLPPOG) so that $LFLPSG = LFLPPOG$, which is assumed away.

Figure 6 above shows that the linear flawed market at point 2 is assumed to be separated from golden paradigm pricing markets at point 1 as linear flawed markets are assumed to be able to expand without creating sustainability problems. This means that the linear flawed paradigm framework works if you assume that real sustainability gaps ($SG > 0$) do not exist as they are assumed away. This means that point 2 where the linear flawed market is located there is a no price distortion point by assumption only as its linear pricing mechanism is based on partial linear cost pricing, and hence, there are linear price distortions. The thinking goes that at point 2 there is full linear market pricing, but by assumption (AFLMP) or point 2 works under sustainability gap production neutrality assumptions (SGPNA) as at this point partial circular costing is at play, but it is assumed to be full cost pricing.

Implication 6:

The situation in Figure 6 above applies to liner flawed markets that operate under externality neutrality assumptions. Among other things this tells us that under linear flawed paradigm market thinking ruling at point 2 of Figure 6 above there is full resource use

efficiency, but this is by assumption only as we know pricing at point 2 is based on partial linear cost pricing, it is not full cost pricing.

The Golden paradigm-Circular flawed paradigm framework under assumed reality

If we assume that the circular sustainability gap CFLPSG does not matter ($\text{CFLPSG} = 0$) or it can be assumed away through sustainability gap production neutrality assumptions (SGPMA), then Figure 5 above is transformed into Figure 7 below:

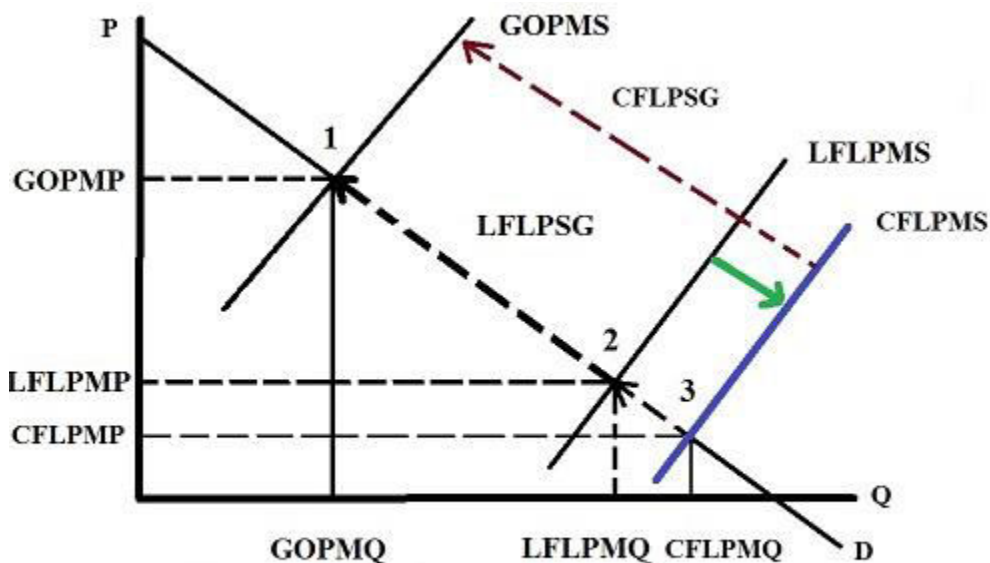


Figure 7 The golden market paradigm-The circular flawed market paradigm under assumed reality framework

Notice that the broken arrow from point 3 to point 1 means that sustainability gap production neutrality assumptions (SGPNA) are at play, so circular flawed markets can expand for ever too without creating sustainability gaps (SG). Hence in Figure 7 above at point 3 we assume that there are not sustainability gaps ($\text{SG} = 0$). As the circular flawed market paradigm sustainability gap (CFLPSG) comes from circular price distortions, then it is in essence a circular flawed market paradigm Pareto optimality gap (CFLPPOG) so that $\text{CFLPSG} = \text{CFLPPOG}$, which is assumed away.

Figure 7 above indicates that the circular flawed market at point 3 is assumed to be separated from golden paradigm pricing markets at point 1 as circular flawed markets are assumed to be able to expand without producing sustainability problems. In other words, the circular flawed paradigm framework works if you assume that real sustainability gaps ($\text{SG} > 0$) do not exist as they are assumed away. This means that point 3 where the circular flawed market

is located there is a no price distortion point by assumption only as its circular pricing mechanism is based on partial circular cost pricing (PCCP), and hence, there are circular price distortions. The thinking goes that at point 3 there is full circular market pricing, but by assumption (AFCMP) or point 3 works under sustainability gap production neutrality assumptions (SGPNA) as at this point partial circular costing is at play, but it is assumed to be full cost pricing.

Implication 7:

The situation in Figure 7 above applies to circular flawed markets that operate under externality neutrality assumptions. Among other things this tells us that under circular flawed paradigm market thinking ruling at point 3 of Figure 6 above there is full resource use efficiency, but this is by assumption only as we know pricing at point 3 is based on partial circular cost pricing, it is not full cost pricing.

The golden market paradigm-Linear traditional market paradigm framework under reality

As the traditional market idea (TM) of Adam Smith (Smith 1776) is a linear market idea under no full linear cost pricing (NFLCP), and hence under partial Pareto optimality (PPO) constraints, then it is in essence a linear flawed market paradigm(LFLP). So if we make the equality $LFLP = TM$, this means that $LFLPSG = LFLPPOG = TMSG = TMPOG$, $LFLPMS = TMS$, $LFLPMP = TMP$, $LFLPMQ = TMQ$, and hence Figure 4 above can be transformed into Figure 8 below in terms of the traditional market pareto optimality gap (TMPOG) to create the Golden market paradigm-the traditional market paradigm framework that captures reality:

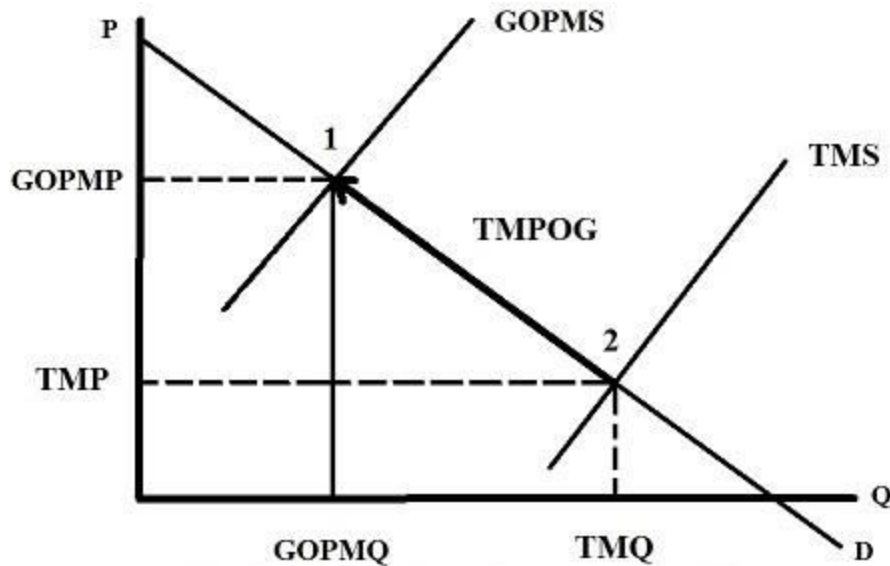


Figure 8 The golden market paradigm-The linear traditional market inspired by Adam Smith under reality framework

Figure 8 above captures the reality under which markets such as the traditional market (TM) of Adam Smith work. In reality at point 2 since there is no full cost pricing (NFCP) means that we have distorted market prices (DMP) and hence we have partial Pareto optimality conditions, which create Pareto improvements mechanism that drives the traditional market away from the golden paradigm (GOP) and in the direction of full unsustainability. An expansion from point 2 to the right expands the traditional market Pareto optimality gap (TMPOG) creating more unsustainable conditions. This is the situation the Brundtland Commission (WCED 1987) tried to address in 1987 through sustainable development thinking as they found observational evidence that traditional market thinking of Adam Smith (Smith 1776) and action had brought us into a world under critical social and environmental problems and unsustainability.

Implication 8

Under no Pareto optimality neutrality assumptions resource allocation in linear traditional markets can never be fully efficient because there is a traditional market Pareto optimality gap that drive the misuse of resource whose costs are not accounted for in the pricing mechanism of the traditional market.

The golden market paradigm-Linear traditional market paradigm framework under assumed reality

If we assume that the traditional market Pareto optimality gap (TMPOG) does not matter ($TMPOG = 0$) or it can be assumed away, we get the situation depicted in Figure 9 below:

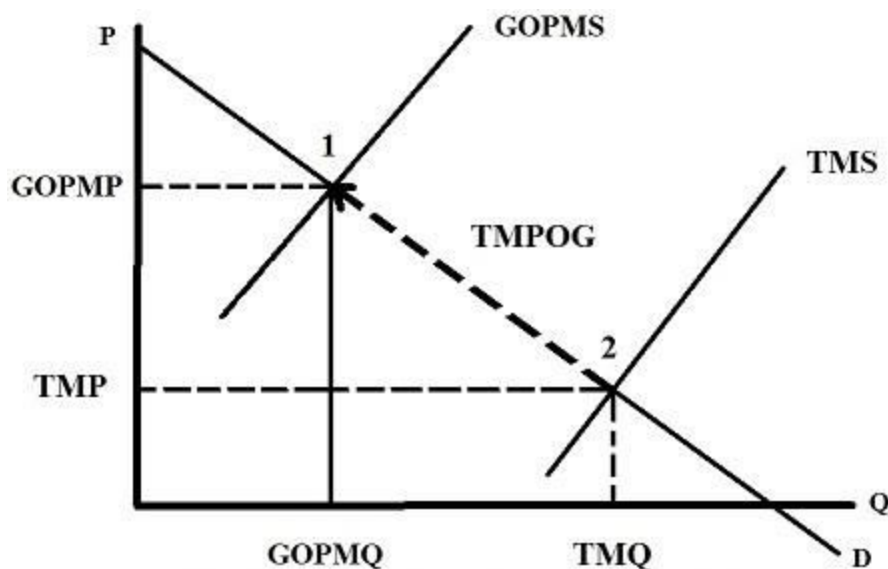


Figure 9 The golden market paradigm-The linear traditional market inspired by Adam Smith under assumed reality framework

Figure 9 above captures the assumed reality under which markets such as the traditional market (TM) of Adam Smith work. In reality at point 2 since there is no full cost pricing (NFCP) and this means that we have distorted market prices (DMP) and therefore, we have partial Pareto optimality conditions, which create Pareto improvements mechanism that drives the traditional market away from the golden paradigm (GOP) and in the direction of full unsustainability. An expansion from point 2 to the right expands the traditional market Pareto optimality gap (TMPOG) producing more unsustainable conditions, however this situation is assumed away. It is assumed that at point 2 there is full cost pricing (FCP), there is full Pareto optimality (FPO), there are no sustainability gaps ($SG = 0$), and there are no traditional Pareto optimality gap ($TMPOG = 0$), which means that at point 2 no full cost prices (NFCP) are taken as being full cost pricing (FCP) to be able to assume reality away.

Implication 9

Under Pareto optimality neutrality assumptions resource allocation in linear traditional markets a la Adam Smith is assumed to be fully efficient, but there is a traditional market Pareto optimality gap that drive the misuse of resource whose costs are not accounted for in the pricing mechanism of the traditional market and this situation is assumed away.

The golden market paradigm-Circular traditional market paradigm framework under reality

As the circular traditional market idea (CTM) inspired by the European Union is a circular market idea under no full circular cost pricing (NFCCP), and hence under partial Pareto optimality (PPO) constraints, then it is in essence a circular flawed market paradigm (CFLP), so if we make the equality CFLP = CTM, this means that CFLPSG = CFLPPOG = CTMSG = CTMPOG, that CFLPMS = CTMS, that CFLPMP = CTMP, and that CFLPMQ = CTMQ, and hence Figure 5 above can be transformed in Figure 10 below in terms of the circular traditional market Pareto optimality gap (CTMPOG) to create the Golden market paradigm-the circular traditional market paradigm framework that captures reality:

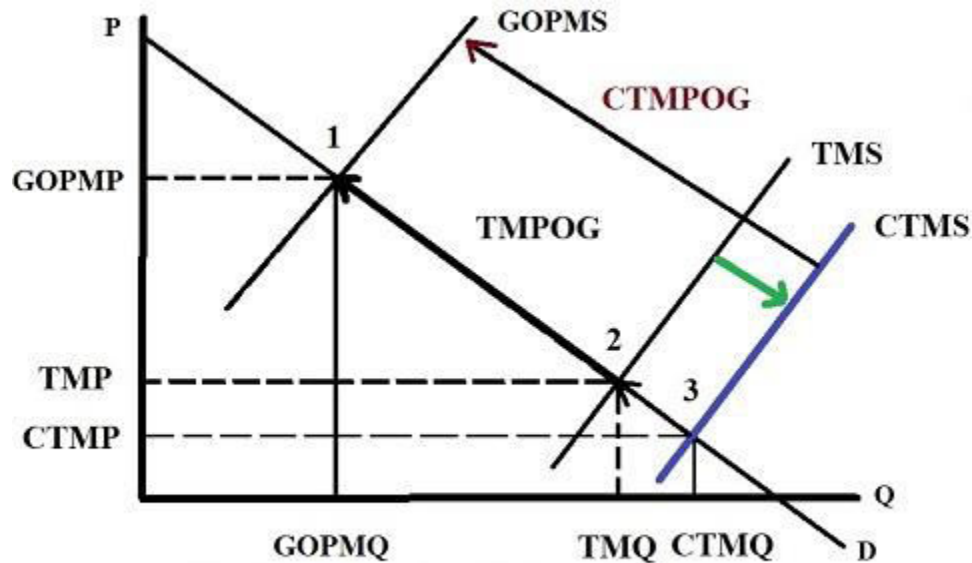


Figure 10 The golden market paradigm-Circular traditional market inspired by the European Union under reality framework

Figure 10 above captures the reality under which markets such as the circular traditional market (CTM) promoted by the European Union work. In reality at point 3 since there is no full cost pricing (NFCCP) this means that we have distorted market prices (DMP) and partial Pareto optimality conditions (PPO) which create Pareto improvements mechanism that drives the circular traditional market (CTM) away from the golden paradigm (GOP) and in the direction of full unsustainability. An expansion from point 3 to the right expands the circular traditional market Pareto optimality gap (CTMPOG) generating more unsustainable conditions. It has been pointed out that a move from point 2 to point 3 improves economic resource use efficiency but the expanded sustainability gap or expanded Pareto optimality gap would make critical problems such as socio-environmental problems still present in circular market thinking become a third blunder in terms of development thinking (Muñoz 2025) as addressing economic resource use inefficiency will put pressures on the system gaps driving socio-environmental problems.

Implication 10

Under no Pareto optimality neutrality assumptions full resource allocation in circular traditional markets can never be fully efficient because there is a circular traditional market Pareto optimality gap that drive the misuse of resource whose costs are not accounted for in the pricing mechanism of the circular traditional market.

The golden market paradigm-Circular traditional market paradigm framework under assumed reality

If we assume that the circular traditional market Pareto optimality gap (CTMPOG) does not matter ($CTMPOG = 0$) or it can be assumed away as researchers and politicians in the European Union have done (WB 2022; OECD 2025) to justify a move from linear thinking to circular thinking or a move from no full resource use efficiency to a world still under no full resource use efficiency and socio-environmental problems, we get the situation depicted in Figure 11 below:

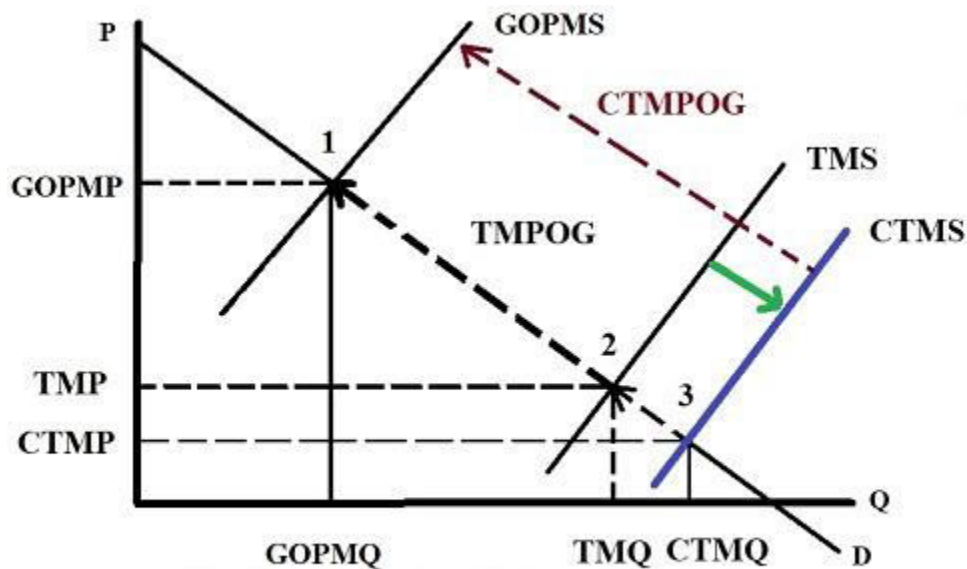


Figure 11 The golden market paradigm-Circular traditional market inspired by the European Union under assumed reality framework

Figure 11 above captures the assumed reality under which markets such as the circular traditional market (CTM) promoted by the European Union work. In reality at point 3 since there is no full cost pricing (NFCP) this means that we have distorted market prices (DMP) and partial Pareto optimality (PPO) conditions, which create Pareto improvements mechanism that drives the circular traditional market away from the golden paradigm (GOP) and in the direction of full unsustainability. An expansion from point 3 to the right expands the circular traditional market Pareto optimality gap (CTMPOG) creating more unsustainable conditions, however this is

assumed away. It is assumed that at point 3 there is full cost pricing (FCP), there is full Pareto optimality (FPO), there are no sustainability gaps ($SG = 0$), and there are no circular traditional Pareto optimality gap ($CTMPOG = 0$), which means that at point 3 no full cost prices (NFCP) are taken as being full cost pricing (FCP) to be able to assume reality away.

Implication 11

Under Pareto optimality neutrality assumptions resource allocation in circular traditional markets is assumed to be fully efficient, but there is a circular market Pareto optimality gap that drive the misuse of resource whose costs are not accounted for in the pricing mechanism of the circular traditional market, and this situation is assumed away.

Addressing the research question at hand from the flawed market paradigm thinking angle

Explaining why resource allocation can never be efficient under distorted flawed market paradigm prices, whether in linear or circular Markets

No flawed market paradigm under distorted market prices, be it linear or circular, should be expected to lead to full resource use efficiency as price distortions generate sustainability gaps or Pareto optimality gaps, which drive the misused of resources whose cost are left out of the flawed market pricing mechanism. Therefore, full resource use efficiency under distorted flawed paradigm market prices, be it linear or circular, can only take place in these markets if we assume that a real sustainability gap or a real Pareto optimality gap does not exist.

Addressing the research question at hand from the traditional market paradigm thinking angle

Explaining why resource allocation can never be efficient under distorted traditional market paradigm prices, whether in linear or circular Markets

No traditional market paradigm under distorted market prices, be it linear or circular, should be expected to lead to full resource use efficiency as traditional price distortions generate traditional market sustainability gaps or traditional market Pareto optimality gaps, which drive the misused of resources whose cost are left out of the traditional market pricing mechanism. Hence, full resource use efficiency under distorted traditional market paradigm prices, be it linear or circular, can only take place in these markets if we assume that a real traditional market sustainability gap or a real traditional market Pareto optimality gap does not exist.

Mapping reality and assumed reality in which golden market paradigms, flawed market paradigms, and traditional market paradigms, linear or circular, work

Table 1 Mapping reality and assumed reality in the framework

Full cost pricing (FCP)	No full cost pricing (NFCP)
Golden market paradigms (GOP) circular	Flawed market paradigms, linear or circular
	Traditional markets, linear and circular
REALITY THINKING	ASSUMED REALITY THINKING
Price distortions (PD) exist away	Price distortions are assumed
Sustainability gaps (SG) exist away	Sustainability gaps are assumed
Pareto optimality gaps (POG) exists assumed away	Pareto optimality gaps are
Distorted price signals at work price signals	Assumed undistorted analytical
Full efficient allocation of resources resources	No full efficient allocation of
Not implied full allocation	Implied full allocation

-

Observed critical problems such as
External system unsustainability
Or socio-environmental problems
Which are endogenous issues here

Not observed critical problems such as
External system unsustainability
Or socio-environmental problems,
Which are exogenous issues here

No price distortion neutrality assumption

Price distortion neutrality assumption

No sustainability gap production
Neutrality assumptions

Sustainability gap production
Neutrality assumptions

No Pareto optimality gap production
Neutrality assumptions at play

Pareto optimality gap production
Neutrality assumptions at play

Overview of gaps in flawed paradigms, linear and circular flawed paradigms, and in linear and circular traditional market paradigms under assumed reality and reality

Table 2 Mapping reality and assumed reality in terms of system gaps

Flawed paradigm gaps

FLPSG = GOPMP - FLPMP

FLPPOG = FPO - PPO

FLPRUEG = FRUE - PRUE

FLPPG = FCP – PCP

If gaps are assumed away there is full resource use efficiency in flawed markets; if not, then resource allocation cannot be fully Pareto efficient whenever prices fail to reflect full costs as it is the case in these markets.

Linear flawed paradigm gaps

$$\text{LFLPSG} = \text{GOPMP} - \text{LFLPMP}$$

$$\text{LFLPPOG} = \text{FPO} - \text{LPPO}$$

$$\text{LFLPRUEG} = \text{FRUE} - \text{LPRUE}$$

$$\text{LFLPPG} = \text{FCP} - \text{LPCP}$$

If gaps are assumed away there is full resource use efficiency in linear flawed markets; if not, then resource allocation cannot be fully Pareto efficient whenever prices fail to reflect full costs as it is the case in these markets.

Circular flawed paradigm gaps

$$\text{CFLPSG} = \text{GOPMP} - \text{CFLPMP}$$

$$\text{CFLPPOG} = \text{FPO} - \text{CPPO}$$

$$\text{CFLPRUEG} = \text{FRUE} - \text{CPRUE}$$

$$\text{CFLPPG} = \text{FCP} - \text{CPCP}$$

If gaps are assumed away there is full resource use efficiency in circular flawed markets; if not, then resource allocation cannot be fully Pareto efficient whenever prices fail to reflect full costs as it is the case in these markets.

Traditional market paradigm gaps

$$\text{TMSG} = \text{GOPMP} - \text{TMP}$$

$$\text{TMPOG} = \text{FPO} - \text{TMPPO}$$

$$\text{TMRUEG} = \text{FRUE} - \text{TMPRUE}$$

$$\text{TMPG} = \text{FCP} - \text{TMPCP}$$

If gaps are assumed away there is full resource use efficiency in traditional markets; if not, then resource allocation cannot be fully Pareto efficient whenever prices fail to reflect full costs as it is the case in these markets.

Circular traditional market paradigm gaps

$$\text{CTMSG} = \text{GOPMP} - \text{CTMP}$$

$$\text{CTMPOG} = \text{FPO} - \text{CTMPPO}$$

$$\text{CTMRUEG} = \text{FRUE} - \text{CTMPRUE}$$

$$\text{CTMPG} = \text{FCP} - \text{CTMPCP}$$

If gaps are assumed away there is full resource use efficiency in circular traditional markets; if not, then resource allocation cannot be fully Pareto efficient whenever prices fail to reflect full costs as it is the case in these markets.

Table 3 The main implications of the paper expressed as a two-way linked chain of cost pricing dynamics

Partial cost pricing → sustainability gap → Pareto optimality gap → partial resource allocation efficiency

↕

↕

↕

↕

Full cost pricing → no sustainability gap → No Pareto optimality gap → full resource allocation efficiency

Where ↓ = Correction pathway and ↑ = Distortion pathway

If a system moves from full cost pricing toward partial cost pricing, it generates partial resource allocation efficiency conditions. Conversely, if a system moves from partial cost pricing

toward full cost pricing through market price corrections, it generates full resource allocation efficiency conditions

Conclusions

First, it was highlighted that under golden markets there are no sustainability gaps and hence there is full Pareto optimality, which means that there is full efficient allocation of resources in these markets. Second, it was pointed out that under flawed markets there is partial Pareto optimality as there is a sustainability gap or a Pareto optimality gap separating it from golden paradigms, and therefore, there is no full efficient allocation of resources here as the resources whose costs are not reflected in the pricing mechanism of flawed markets are inefficiently used, and those resources whose costs are accounted are efficiently used. Third, it was indicated that linking the golden market paradigm with the flawed market paradigm creates a framework where there is a sustainability gap continuum, and hence, there is a Pareto optimality continuum that goes from full sustainability to partial sustainability or from full to partial Pareto optimality respectively, where the difference between the partial sustainability point and the full sustainability point is the sustainability gap or where the difference between full Pareto optimality point and partial Pareto optimality point is the Pareto optimality gap. Fourth, it was pointed out that under no sustainability gap assumptions or no Pareto optimality gap assumptions this continuum reflects observed reality. Fifth, it was stressed that linear flawed market paradigms as well as linear traditional markets like the traditional market inspired by Adam Smith are partial cost pricing market which should be expected to promote the misuse of resources under reality, the misuse of those resources whose linear costs are not fully accounted for in the linear market price mechanism. However, under assumed reality linear flawed market paradigms including the linear Adam Smith's traditional market model work. And Sixth, it was indicated too that the circular flawed market paradigms and circular traditional markets inspired by the European Union are also partial cost pricing market which should be expected to promote the misuse of resources under reality, the misuse of those resources whose costs are not fully accounted for in the circular market price mechanism as only resources with full circular cost accounting will be efficiently used.

In general, it can be said that i) Under golden market paradigm market prices or full cost pricing, prices reflect all production costs, allowing no sustainability gaps or not Pareto optimality gaps, and hence allowing full Pareto optimality, and the resulting efficient allocation of all resources; ii) Under flawed paradigm market prices or partial cost pricing, only the costs included in the pricing mechanism guide efficient allocation, creating sustainability gap or a Pareto optimality gaps, and hence driving partial resource allocation efficiency; iii) The linear and circular flawed market paradigms and the traditional linear and traditional circular markets

can be interpreted as partial cost pricing systems whenever production cost in general or non-economic production costs in particular respectively remain outside the pricing mechanism; iv) The answer to whether distorted flawed market paradigm prices or distorted traditional market prices can allocate resources efficiently depends on the analytical assumptions adopted: under sustainability gap neutrality assumptions or Pareto optimality gap neutrality assumptions, the answer is yes, all those distorted markets can efficiently allocate all resources by assumption; when those assumptions are relaxed, the answer no longer follows; v) The proposed golden paradigm-flawed paradigm framework and its application to traditional market thinking distinguishes between conclusions that hold under observed pricing structures and conclusions that hold only under neutrality assumptions, providing a common analytical framework for comparing full cost, linear flawed, circular flawed, linear traditional, and circular traditional market thinking; vi) Sixth, the general framework presented in this paper shows that analytical conclusions about sustainability gaps and Pareto optimality gaps and market efficiency are conditional on the pricing structure assumed. Distinguishing between observed reality and assumed reality provides a general consistent basis for evaluating flawed paradigms, linear or circular and traditional linear and traditional circular market models under a common sustainability, Pareto optimality, and cost pricing continuum based framework; vii) Seventh, overall the paper introduces a general theory of golden paradigms and flawed paradigms, link it to specific forms of flawed paradigms, linear and circular flawed paradigms, which are then applied to well-known component specific paradigms, the Adam Smith's traditional market and the EU circular market; and finally, viii) Eighth, the paper introduces a general analytical framework in which: a) Golden paradigms represent full-cost pricing; b) Flawed paradigms represent partial-cost pricing; c) Linear and circular markets are treated as special cases of flawed paradigms; d) Traditional and circular market models can be analyzed within a single pricing-based framework; and e) hence, the general analytical framework shift the focus from market form analysis to price-structure analysis.

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