

# Incompatibility Hypothesis: Graphical and Mathematical Explanations

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## To cite this article

Martin Kaschny, Daniel Ruppert, Alexander Bitzhoefer, Kai Andre Doniges. Incompatibility Hypothesis: Graphical and Mathematical Explanations. *American Journal of Business, Economics and Management*. Vol. 3, No. 4, 2015, pp. 177-184.

## Abstract

The purpose of this article is to demonstrate that there are certain circumstances in markets with a hyperbola-shaped demand function that support Porter's incompatibility hypothesis. Functions that are shaped like hyperbolas are present in markets characterised by strongly differentiated (meaning pricy) products while at the same time a wide range of very low-priced products is available. The methodology is such that the turnover function is derived from the demand function which resembles the shape of a hyperbola. This does not lead to – in contrast to what has been taught so far – a reverse U-shape but a wavelike turnover function characterised by a U-shaped valley. This effect, caused by the price elasticity of demand, should contribute - in connection with economies of scale - to the phenomenon of being “stuck in the middle” in markets where a similar demand function is present. The value of the paper is that a phenomenon caused by the price elasticity of the demand is shown, which may help explain the occurrence of the effect of being stuck in the middle. The practical implications of the article lie in the fact that there is indication that the obvious strategic positioning of enterprises and the consequences for price policy may gain a better understanding to indicate that mathematical effects deriving from the price elasticity of demand may also contribute to the effect of “being stuck in the middle”. This is demonstrated by the broken-rational demand curve resp. demand function and shows why the shift from a cost leadership strategy to a differentiation strategy – or vice versa - may be difficult.

## Keywords

Incompatibility Hypothesis, Porter's Competitive Strategy, Price-Sales-Function, Strategy, Hybrid Strategy, Price Elasticity of Demand

## 1. Question and Procedure

Porter's incompatibility hypothesis states that enterprises with a clear focus on either cost leadership or differentiation or those that serve a niche market, show higher profitability. [13].

This hypothesis has stirred up some discussion in business management with people debating whether or not it is true and this article shall help understand the incompatibility hypothesis as such.

According to that, the hypothesis of the work is as follows: The nature of the demand function of a market can indeed impact whether Porter's incompatibility hypothesis is valid.

To substantiate this, the following chapter (2) initially outlines the three competitive strategies by Porter and the hybrid strategy, while chapter 3 takes a closer look at the phenomenon of being “stuck-in-the-middle” addressing the

reasons that speak for and against the incompatibility hypothesis.

Chapter 4 displays an example that shows the price elasticity of the demand function resp. price-sales function in favour of the incompatibility hypothesis explanation in graphs. Findings are summarised in chapter 5.

## 2. Porter's Competitive Strategies

### 2.1. Classification and Concept

From a business point of view we can distinguish three strategic levels. The corporate strategy focuses on the general alignment of a company while the business unit strategy focuses on the strategic alignment of business divisions. The functional strategies help implement the business unit/division strategy. This article focuses on – in line with Porter's incompatibility hypothesis – the medium tier, the business unit strategies [18].

According to Porter there are three generic types of competitive strategies on a business unit level aimed at outperforming other businesses in the industry through competitive edge:

- overall cost leadership
- differentiation
- focus [13].

The awareness of which strategy is generally pursued makes it easier to identify the three associated requirements and risks [13].

The effect of competitive strategies becomes more obvious when considering the term competitive advantage: cost and differentiation advantages are understood as a business's competitive advantage which increases profitability or market share. [5].

To get an idea about competitive advantage, the focus must be on the formula for profit (profit = quantity x price – costs), where three key levers to increase profit and thus profitability are shown: Higher profits can be generated first by selling larger product quantities (X) or secondly through higher prices (P). (see figure 1). How high the price is that can be achieved in the market is primarily characterised by the factor differentiation which can be achieved e.g. through permanent high quality, design or image of a product.

Thirdly, profits can be increased by the reduction of costs (C). When costs are lower than those of the competitors a competitive advantage exists. Economies of scale or size-independent cost benefits are typical entry or mobility barriers that incorporate this competitive advantage.

Consequently, the competitive advantage has either a positive effect on the achievable sales price (differentiation advantage), on the cost structure (cost advantage) and/or the quantity of sold products.

The following diagram shows that the three key levers that can be derived from the profit formula are associated with three competitive strategies set out below: Differentiation strategy, strategy of cost leadership and hybrid strategy.

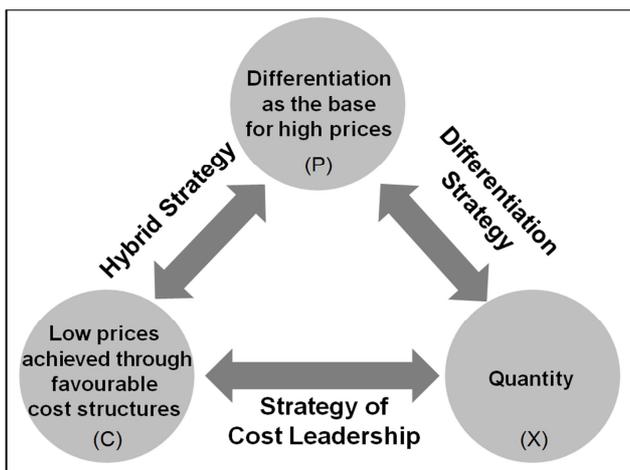


Fig. 1. Triangle of fundamental competitive strategies (Source: Author's diagram).

If one of the above mentioned competitive strategies is pursued, the primary focus lies on two of the three monetary

influential factors like costs (C), price (P) or quantity (X), while the third – in the illustration as the opposite factor – attracts some attention, is, however, subordinate to the other two factors.

Figure 1 looks altogether at three fundamental strategies: The first fundamental strategy is cost leadership outlined in the following chapter 2.2.1. In this case, attempts are made to sell large volumes through a favourable cost structure resp. favourable prices aimed at the generation of high profits. Low costs are the precondition for low prices. Here, the main competitive advantage is low costs. Other aspects are subject to the low cost principle, when in doubt.

The second strategy is differentiation, which is described in more detail in chapter 2.2.2. It aims at selling sufficiently large volumes at relatively high prices. The attractiveness of products – and therefore the ability to achieve high prices – takes priority over the third criterion costs.

The incompatibility hypothesis refers to the above mentioned two basic strategies differentiation and comprehensive cost leadership stating how difficult they are to reconcile with one another. (Chapter 3.1).

With the third fundamental strategy, the hybrid strategy (2.2.4), a distinguished meaning high quality product shall be offered at a comparably low price. According to Michel E. Porter, a combination of both these basic strategies will lead to low profitability (cf. Chapter 3, Incompatibility Hypothesis). Nevertheless, we will show you along the lines of this project that there are situations where a hybrid strategy seems obvious.

The incompatibility hypothesis does not apply to the strategic concentration on focal areas resp. niches.

The strategies comprehensive cost leadership, differentiation and niche strategy are explained in greater detail in the following – according to a classification defined by Porter.

## 2.2. Generic Competitive Strategies

### 2.2.1. Cost Leadership

The competitive strategy of cost leadership aims at outperforming any competitors by realising a cost advantage. The objective is to permanently offer products at lower costs than competitors. [13]. The underlying cost advantage can for example, be achieved by an economies of learning effect or by economies of scale. Particularly to achieve economies of scale, a large, relative market share plays a key role, since this allows higher product quantities, which in turn leads to lower costs per unit [13].

Although the strategy of cost leadership focuses on low-cost criteria like adequate service and quality, other standards that are expected in the market must not be neglected. The focus where competitive advantages can be identified lies, however, on cost edge and not on performance characteristics. [13].

### 2.2.2. Differentiation

The objective of the differentiation strategy on the other hand, involves the development of a unique product or service

that cannot be readily replaced [13]. This uniqueness can manifest itself for example, in high quality products, a must-have brand or superior service level.

Higher prices can be achieved and/or market shares tapped when customers are very loyal and therefore insensitive to price. As part of the application of the differentiation strategy, it is crucially important to make the product or service differences perceivable to the customer so that the additional benefit offered to the customer is reflected in higher yields. [7]. Porter mentions aspects like design, brand name or technology as examples for a differentiation based on superior products. Examples of a differentiation of customer benefits based on improved customer relationships are factors like after-sales-service or dealership network. Ideally, enterprises should distinguish themselves at various levels. [13].

In this strategy, enterprises therefore compete via the perceived customer benefit of their product or service and it is important to note that a business – despite the differentiation strategy – cannot lose sight of the costs. [18] [19]. However, the costs in this strategy are – contrary to performance characteristics – not a top priority [13].

**2.2.3. Concentration on Focal Areas**

The third generic competitive strategy mentioned by Porter lies in the concentration on niche markets. This can be a certain customer group, a certain part of a product range or a geographically zoned market. [13]. The focus within this niche can be on cost leadership strategy, differentiation strategy or both. The goal is to work more efficiently than competitors by concentrating on this market segment and hence dominate it. [13].

Some authors consider the niche strategy a special form of cost leadership and differentiation strategy and accordingly they do not view the niche strategy as a separate concept [10]. Figure 1, where this strategy is not mentioned, is along those lines. According to this article the consideration of niches is insofar significant as this hypothesis does not apply to niches. (Chapter 4.4). The findings of this work back up this statement insofar as they indicate that the incompatibility hypothesis does not apply when smaller quantities are involved.

The following diagram summarises the three generic competitive strategies defined by Porter:

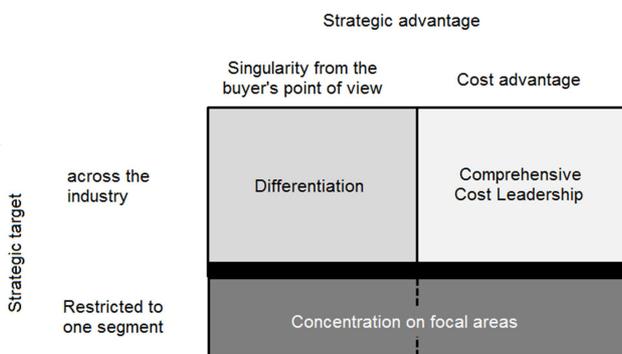


Fig. 2. The three generic competitive strategies (Source: Author's diagram [13]).

**2.2.4. Hybrid Strategy**

Hybrid strategies can be defined as a combination of differentiation and cost or price advantage over competitors. [9]. They are considered a substantial part of a market launch strategy. Following the successful market establishment, this strategy can evolve into another strategy [8]. There are empirical studies that are contrary to the incompatibility hypothesis [2].

At the same time it must be noted that, as part of a niche strategy according to Porter, the combination of differentiation and cost leadership – hence a hybrid strategy – can by all means be profitable [13]. Contradicting statements as to the validity of the hybrid strategy may be due to the fact that there are different methods of how to define a niche and views are different indeed as to how a niche should be defined.

**3. Incompatibility Hypothesis**

**3.1. Fundamental Statements**

The incompatibility hypothesis describes the fundamental incompatibility of differentiation and cost leadership strategy to achieve competitive edge. Accordingly, enterprises that neither exhibit a distinct differentiation nor a distinct cost leadership are “stuck in the middle” [13].

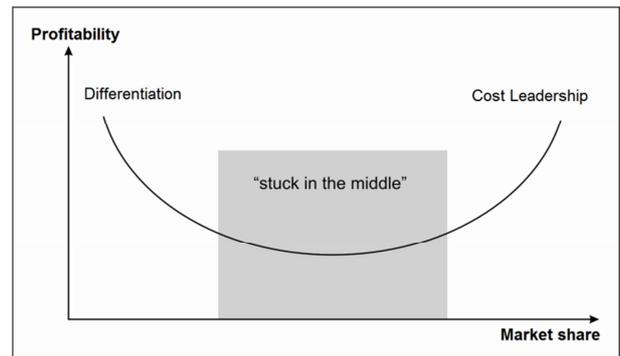


Fig. 3. Incompatibility Hypothesis (Source: Author's diagram [3]).

As shown in the diagram, there are two ways of how to achieve high profitability. Businesses either go for cost leadership which often requires a high market share to sell a high number of low-priced products or they seek differentiation which frequently involves a lower market share than that of cost leadership but at the same time they sell more expensive products of better quality. According to the incompatibility hypothesis, the strategy of cost leadership and the differentiation strategy are often seen as competing aims. Enterprises that pursue a mixture of both strategies run the risk of lower profitability. They are stuck in the middle. According to Porter, the incompatibility hypothesis does not apply to niche suppliers. Hence we are not talking about four but only three basic strategies [13].

**3.2. Substantiation of the Incompatibility Hypothesis**

Enterprises that are stuck in the middle are faced with the

problem that they are not strategically ideally positioned to achieve high profitability (see figure 2). They are bordered on two sides by competing enterprises that either go for differentiation or cost leadership. There is the danger of customers migrating to those businesses that are clearly positioned in the market: if customers look for – in terms of the minimalist principle – low-priced products, they choose products of cost leadership enterprises. If on the other hand customers look – according to the maximum return principle – for a specific product with strong technical features like a well-known brand or high product quality, they go for products offered by companies who pursue a differentiation strategy. Here the price plays only a minor role. [13].

Difficulties also arise for companies that intend to move from cost leadership to differentiation. Expenditures that are usually associated with a quality increase and image enhancement will only be recognised by the customer following a significant delay which means higher costs for Research and Development, design or purchase of primary pre-products or materials. These higher costs cannot – at least in the medium term – entirely be passed on to customers [12].

Enterprises that try to combine cost leadership and differentiation may fail as well on the grounds of customer's perception. Many customers are not willing to buy an obviously overpriced product of an otherwise low-cost brand. Accordingly, there is the risk of loss of profitability resp. the risk of being “stuck-in-the-middle” [12].

Moreover, supporters of cost leadership and differentiation often have different corporate cultures that don't go well together. Organisations that are “stuck-in-the-middle” often have a blurred vision of their corporate culture, which may entail a poor work atmosphere and high staff turnover. [13].

However, not every case of cost reduction means turning away from the competitive strategy differentiation if an enterprise does pursue the differentiation strategy. For example, more robust processes or better technology can help save costs without affecting the differentiation of the product or the organisation in the slightest. Yet, these strategies might clash outright when an enterprise that pursues the differentiation principle and competes with a cost leader implements cost savings at the expense of differentiation. Then any further cost reduction - which must not be confused with a cost advantage - could entail the abandonment of the originally pursued differentiation strategy which might jeopardize profitability in the long run. [13].

### **3.3. Criticising Porter's Incompatibility Hypothesis**

As far as the applicability of the incompatibility hypothesis is concerned, there has been severe criticism in literature.

One of those who criticises the incompatibility hypothesis is Fleck, who doubts - although he does not deny that there are businesses that fit the pattern defined by Porter (e. g. Cartier, RYANAIR) - that all enterprises can clearly be allocated to either differentiation or cost leadership. [8]. As an example, he mentions McDonald's where cost and differentiation benefits are realised at the same time. It is impossible to discern that

McDonald's would fail with their concept in their competitive environment – quite the contrary. [8]. “Fleck does not challenge Porter's accomplishments that lie in the classification scheme but attempts to design an advancement on the basis of Porter's model which remedies the model's weaknesses” [8].

Corsten and Will also criticise Porter's model with respect to the generalisation of the model. They criticise the empirical findings claiming that their sample size would be too small and that business industry relevance would be too narrow. [2].

Porter himself dares to qualify his incompatibility hypothesis: According to him there are industry sectors where the U-graph illustrated in figure 3 is not present. This was alleged to stem from the fact that there are markets where there is no differentiation but harsh price competition. Likewise, there are industry sectors where costs are of minor importance because of buyers' preferences or where the competition is so intense that a competitive edge can only be achieved through concentration. There are even industries in which cost advantages can be compatible with differentiation. According to Porter there is no clear relationship between profitability and market share, meaning that the definition of the industry would have to be fine-tuned to the individual enterprise which may also lead to the classification of competitive strategies being vague. [13].

### **3.4. Assessment of the Incompatibility Hypothesis**

Despite all the criticism that Porter's hypothesis has come in for, it is well known and quite popular. A likely reason for this may be the fact that – among other factors – it is easy to apply. Even though this model may not be true for all enterprises and industries, it may be helpful in certain markets to take a more clearly defined position from a strategic point of view. The present article aims to help identify those markets where Porter's thesis may be applied. Hence, the following will highlight the characteristics of a demand curve where the incompatibility hypothesis is more likely to be applicable.

## **4. Graphical Review of the Incompatibility Hypothesis**

So far the validity of the incompatibility hypothesis could only be empirically proven in parts [6]. The following is intended to highlight the characteristics of a demand curve where the substantiation of the incompatibility hypothesis makes sense.

### **4.1. Main Factors Influencing the Incompatibility Hypothesis**

As illustrated in figure 2, the incompatibility hypothesis describes the relationship between market share and profitability or profit of a business. The profit is roughly defined as the difference between revenue and costs which reflects that quantity and price as well as the factor costs have

an impact on profit und therefore on the validity of the incompatibility hypothesis: Revenue may only be generated when there is sufficient demand. As a second determinant of the profit, costs form a key influential factor here. Scale and learning curve effects have to be named as an essential source of competitive resp. cost advantages for organisations with a high market share. These positive effects are more difficult to realise for small than for large scale enterprises. Nevertheless, the favourable cost structure of small enterprises (e.g. lower fixed costs) can have a positive impact on their profit.

On the other hand, large enterprises usually have the chance to benefit from so-called economies of scale. These economies of scale result from money saved when selling large quantities. As a general rule the higher the quantity, the greater the economies of scale. Typical examples are bulk discounts that go along with the purchase or volume-related higher total costs that can lead to lower marginal costs with increasing production volumes. Likewise, the learning curve effects suggest high profitability for vendors with a high absolute quantity of products that has been produced in the course of the years. Due to the high production output, the learning progress of the workforce is faster. As highlighted in chapter 2.1.1 this tends to reduce error rate and costs and increases the efficiency of the business. Although these cost advantages are primarily generated for organisations with bulk production, those that do not belong to the group of mass suppliers but pursue the differentiation strategy also benefit from learning curve effects.

All these factors are reflected in the cost functions of the enterprises and particularly the economies of scale can substantiate the thesis of differentiation and cost leadership as being incompatible.

The above statements primarily refer to effects on the supplier side. The following chapters explicitly address the influential factors on the profit on the demand side resp. significance of the incompatibility hypothesis.

## 4.2. Impact of the Demand Curve

In addition to costs, revenue is the major determinant for the profit level and therefore for the profitability of the enterprise. To determine the amount of revenue, prices as well as sales volumes must be known. This information is provided by the demand curve. It describes the correlation between the price of a product and the quantity of products that can be sold at this price. Conversely, it also allows to set the price of a specified production volume with which a specified quantity of products can be sold.

If the price is very high, usually only a small quantity of products can be sold while a low price basically allows high sales volumes. This real-life situation usually leads to the demand curve to drop or have a negative slope. While in literature demand curves are often assumed as linear for reasons of simplification, demand curves that do actually exist are on the other hand far more complex [15]: as an approximation to reality, demand functions resp. demand curves as shown in figure 3 – are frequently also illustrated as curved functions - which shows that demand curves in the left

or inelastic area climb rather steeply or inelastically. This means that even major price changes only have a small impact on demand (low price elasticity). This effect is reasonable if a small number of market players demand a product – almost regardless of its price and this is conceivable when a product is very important due to its subjectively perceived benefit.

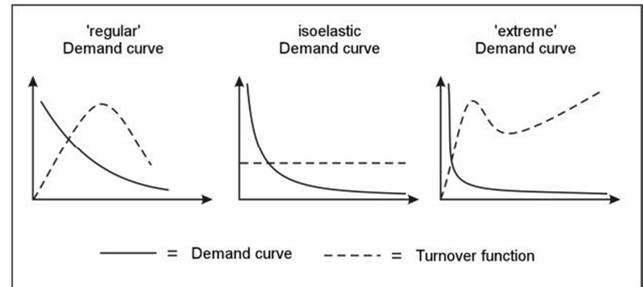


Fig. 4. Turnover functions subject to different demand curves (Source: Author's diagram).

Then again, in the elastic area of the demand curve on the right, a very high (negative) price elasticity can be assumed. In this field with extremely low prices and high quantities there tend to be homogenous, highly standardised volume products. Since these goods show a much lower variation in product characteristics, demand is more dependent on the price which leads to a situation where a small price change entails a disproportionate quantity change.

A typical example of a market, where the described situation could arise is the watch market. This market is on the one hand very strongly differentiated which means that the odd watch in the six-digit range is sold. At the same time there is a vast number of watches that cost less than 100 euros or even less than 10 euros. Consequently, the corresponding long-term demand function may tend to be shaped like a hyperbola which does not result in the inverted U-shaped long-term demand function typically found in the text books but a wave-like turnover function. Looking at products of a rather homogenous nature like commodities, this effect is not evident.

## 4.3. Function Equation of a Demand Curve

The progress of a demand curve substantiated in the chapter above is well reflected in the following function:

$$\text{Price(Sales)} = y(x) = A + \frac{B}{1 + \left(\frac{x}{x_0}\right)^n} \quad (1)$$

$x$  = Quantity

$p$  = Price

$U$  = Turnover

True is:  $U = x \cdot p$

The curve described by the demand is no actual hyperbola but a somewhat different broken-rational curve. The formulation of the function was however stimulated by the function of a hyperbola. The approximation to hyperbolas is an accepted way of describing the demand curve. [11].

In the above described function A is the minimum price

assuming a very high quantity of sales while  $(A+B)$  form the prohibitive price at which no more turnover is generated. By means of the calibration parameter  $x_0$  the demand curve can be adjusted to the required scale. The exponent  $n$  significantly influences the gradient of the function and hence allows the depiction of different price elasticities. By means of these parameters the demand curve can be adapted individually to different markets and therefore it can display both differentiated goods in the inelastic range as well as less differentiated goods in the elastic range. [17]

#### 4.4. Moving from the Demand Curve to the Turnover Function

The multiplication of the demand curve outlined in the chapter above with the quantity of sales results in a turnover function. Turnover functions are often displayed in literature in form of parabolas pointing downwards as can be seen in the front part of the turnover function, displayed in figure 5 (section a and b). Due to the broken-rational demand function that has been laid down, the turnover function displayed below makes a U-shaped move in the rear part of the function (section c and d) expressing the possibility of demand curves resp. elasticities that substantiate the incompatibility hypothesis.

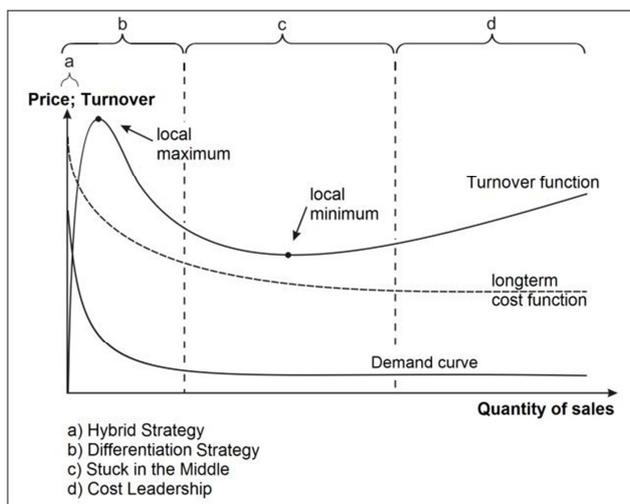


Fig. 5. Turnover function with “extreme” hyperbola-shaped demand curve and plausible competitive strategy (Source: Author’s diagram).

Figure 5 shows that the turnover function initially rises with the sales quantity, forms a local maximum and then makes a U-shaped curve. Consequently, four different areas can be distinguished.

In the first front section (a + b) there is the traditional shape of a U turned upside down in which the local maximum of this section of the turnover function represents the point where the elasticity of the demand function is  $-1$ .

Particularly in the front section of “a” where costs exceed turnover, a hybrid strategy makes sense. By combining favourable prices and distinct differentiation features, the required minimum market share which is necessary to operate profitably can be achieved more quickly. Literature recognises

that hybrid strategies, as mentioned above, may prove reasonable when entering markets. [8].

The first section of the turnover function “a” set out above may also be applicable to young markets that show a comparatively low level of development and where all suppliers equally sell low quantities. Indeed, in developing markets it can be observed that cost leaders and differentiation strategists have not defined and positioned themselves clearly enough [12].

In the front of the second field of the function (“b”) there are enterprises that have already passed the break-even-point and therefore generate profits. Typically, enterprises with differentiated products have established themselves in this field.

“C” is typical of a “stuck-in-the-middle” situation in which the local minimum represents that point where the elasticity of the demand function is  $+1$ .

Depending on the progress of the long-term – and therefore also short-term – cost function the likelihood increases that – depending on the cost situation – vendors will exit the market: The overall costs of a business must be lower than the turnover, at least in the medium and long term. In the central section of the turnover function (“c” in figure 5) the turnover is lower than in the entire section on the right or that section that is immediately in front of the local minimum of the function. Those businesses that have positioned themselves in this “stuck-in-the-middle” area are at an increased risk of their overall costs exceeding sales revenues.

The distances between the long-term turnover function and the long-term cost function (profits) show that those businesses that have positioned themselves in the central part of the function have a lower return on sales than those that have clearly distinguished themselves as cost leaders or differentiation supporters. If overall costs exceed turnovers on a permanent basis, the enterprises in question are likely to exit the market.

Cost leaders have typically established themselves in the fourth section “d”. The incompatibility hypothesis applies here, too: Price reduction leads to a significant increase of sold volumes due to the strong price elasticity in demand which means that lower sales are overcompensated per piece.

The validity of the incompatibility hypothesis is backed up in the third section of the turnover function by the fact that due to the higher quantities, economies of scale can be realised at a greater extent than in the front part of the function.

#### 4.5. Example

In the previous chapter, a demand curve was shown as an example which – at least in theory – contributes to the “stuck-in-the-middle” situation. Going back to the broken-rational function outlined above we would now like to demonstrate a demand curve that shows elasticities which have become evident in reality. In the example we go back to a range of elasticities in a field which has been defined for passenger flights. The intention is to highlight that – under the outlined conditions - the elasticities deviate significantly from  $-1$  but in reality existing elasticities may lead to the described

U shaped turnover function.

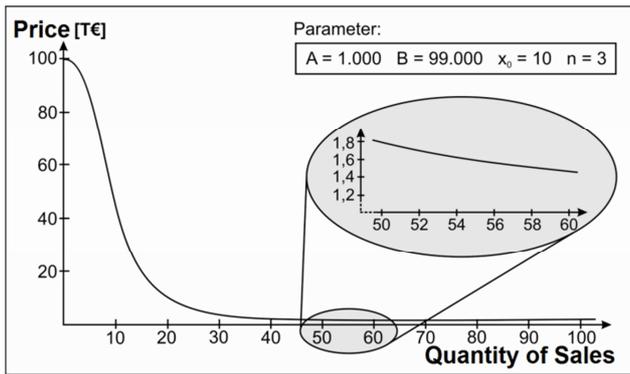


Fig. 6. Demand curve of a hypothetical market example (Source: Author's diagram).

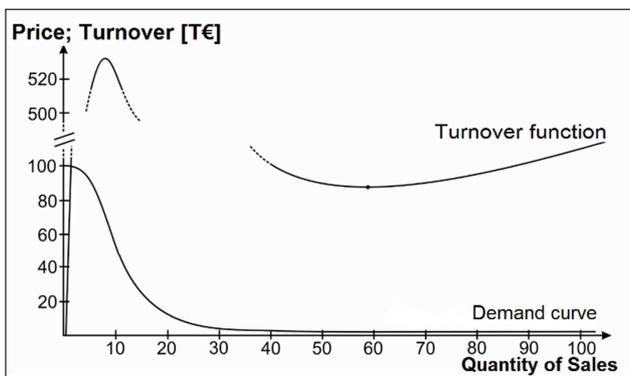


Fig. 7. Turnover function of the hypothetical market example (Source: Author's diagram).

In the unrealistic, less price-sensitive part of the demand curve outlined in figure 6 specialised and individual products have been positioned for a small circle of customers. In the passenger flight market this kind of specific air travel is more likely to be inquired by businesses or wealthy individuals. The fact, that the demand curve, due to the given function equation, remains flat in a small part at the beginning and then drops dramatically may be neglected, as explained in chapter 4.4.

In the elastic part of the demand curve there are standardised products for the mass market. Charter flights are likely to be positioned in this section of the demand curve in the air travel sector. The enlarged section in figure 6 shows the dropping demand curve. Price elasticities can be derived from the associated value table:

Table 1. Value table for the demand curve of a hypothetical market example.

Price [T€]	Sales Quantity
100,000	0
99,900	1
89,000	5
50,500	10
12,000	20
1,786	50
1,193	80
1,099	100

If the price rises from 1.099 to 1.193 euro, demand will probably decline by 20 %. This corresponds to a price

elasticity of -2,5. Such elasticities can also be observed in the underlying market in reality [1,4,14,16].<sup>1</sup> Based on the demand curve outlined above, the following turnover function arises:

If the parameters of the demand curve displayed in figure 7 are transferred to the formula from chapter 4.5, this will result in a local minimum of the turnover function at this point  $x = 58,037$ . This is also reflected in the graphical display of the turnover function. If the parameters taken as examples here actually become reality, enterprises ranging in the “medium” price level will generate a lower turnover than supporters of the differentiation or cost leadership strategy. They are consequently – if a long-term cost function is assumed for all suppliers in the underlying market – “stuck in the middle”. Given the circumstances outlined above, Porter’s incompatibility hypothesis can hence be confirmed.

The above scenario is also reflected in the corporate profits of European passenger flight operators: The cost leader RYANAIR and the differentiator Lufthansa show a comparatively high return on sales. Organisations like Air Berlin, Easy Net or German Wings, that are stuck in the middle on the other hand have a significantly lower return on sales.

## 5. Limitations of the Study and Further Outlook

The limits of the study lie partly in the fact that only a theoretical example indicates how – as a result of a wave-shaped or u-shaped long-term turnover function – it can contribute to the situation “stuck in the middle”. The costs have been indicated by means of a typical long-term cost function. The limitation of the analysis lies in the fact that, as a rule, the demand function cannot be readily determined in markets.

Likewise, the study does not view the supply function. Only through the supply function the parts of the demand function that are actually relevant would clearly emerge.

Future studies might analyse those factors that further characterise markets that are included in the incompatibility hypothesis.

The demand function outlined above was inspired by a hyperbola. Further investigations in specific markets might analyse to what extent demand functions of certain markets actually resemble the shape of a hyperbola and whether the globalisation promotes a trend toward hyperbola-shaped demand functions.

A closer look might also be taken at the fact to what extent the awareness of the positioning of an enterprise has in one of the four described fields as shown in figure 5, where more specific statements can be made with respect to the further strategic development resp. growth of the operation. In this

<sup>1</sup> In a meta-analysis of Brons et al. the lowest price elasticity of demand for passenger air travel was - 3.20 the highest was positive at 0,21; [1]

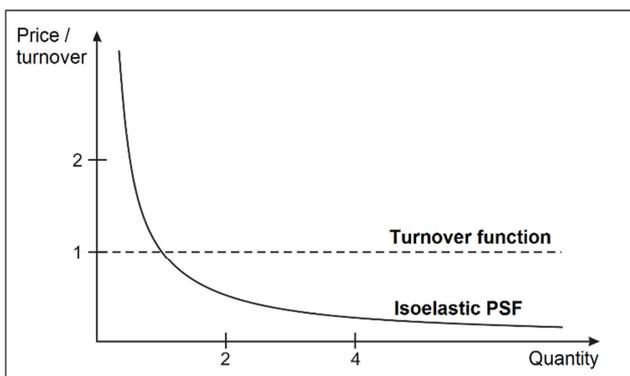
context, thought should be given to what extent the described circumstances can also be used as strategic tools. Additionally, the rules concerning the pricing policy could be substantiated, if a specific strategic position is in place.

## 6. Summary

According to the “incompatibility hypothesis” one can derive that the strategies of cost leadership and differentiation are in principle incompatible when elementary characteristics of a hyperbola-shaped demand function are present.

According to this thesis, enterprises that do not clearly opt for one of the two strategies, are caught between two worlds which will lead to lower profitability. There are many factors that plead for the significance of Porter’s incompatibility hypothesis including the economies of scale on the side of the cost leaders taken as an example but also competitive edge leading to increased customer loyalty on the side of the differentiators. This work shows that the outlined demand patterns resp. the described elasticities support the validity of the concept of the incompatibility hypothesis.

The borderline case where the described leverage of turnovers is not evident is an isoelastic demand curve with a consistent price elasticity of the demand from - 1.



**Fig. 8.** Borderline case isoelastic demand curve (Source: Author’s diagram).

If the debate about the validity of the incompatibility hypothesis of a specific market is initiated, price elasticities should also be considered.

Nevertheless, hybrid competitive strategies may make sense when entering a market or pursuing a growth strategy as it contributes to quick market penetration to benefit for example, from economies of scales in the long run.

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