

Louvain School of Management

Performance effects of economic synergies

Literature review

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Abstract

Creating profitable economic synergies is the quest of a lot of managers nowadays. Diversifying to other businesses is a complex phenomenon that managers often miscalculate.

This paper is a literature review that will discuss the different forms of economic synergies that exist. It states the necessity of market failures. It provides theoretical concepts on the importance of resources of a firm and how it leads to the creation of value. Then the relation between the diversification and the performances of firms is analyzed. The aspect of anti-synergies and the related costs is developed as well as the biases that might influence the choices of the managers.

The last part of the work has for objective the redaction of guidelines for managers. It is represented as a decision tree that integrates the different theoretical parts. This tree helps the decision makers ask themselves the important questions to make sure they realise profitable economic synergies for their firm.

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1 Introduction

Throughout history, humans have always traded with each other. In the past, people were craftsmen or farmers, they were each specialists in their field and everyone brought his own product on the market.

The industrial era modified this exchange system with the introduction of what we now know as a company. At the beginning, companies were also specialised in a small amount of products in order to have efficient production lines and low production costs.

Today when thinking about what represents a big company, most people will think of multinational companies, acting all over the world. But what can a company do when it has reached his objectives in terms of geographical coverage, and there is still room for more activities ? Most companies will answer this question through diversification to other businesses.

By trying to enter new businesses, companies realised that having multiple activities under the same organizational structure allows to reduce some costs and, as a result, earn more money.

This leads to to definition of the economic synergy. A synergy occurs when complementary things add up to become a whole that is worth more than the sum of its parts, following the saying $1 + 1 > 2$. It is through diversification that firms of today can achieve synergies that will create value for them and for their stockholders.

Synergies can take different forms because of the many reasons and opportunities that exist to diversify. Some of the reasons might not be sufficient for the synergy to have a positive impact on the company. The resources and skills of the company play a central role in these decisions.

Some decisions made by the managers of the companies can also be discussed because of the under-evaluation of some costs, or by the fact that these decisions can be biased.

This paper is a literature review that will discuss the different aspects of the economic synergies. The objective is to see more clearly what comes into play and to establish a scheme of the different decisions that a manager has to make to achieve profitable economic synergies.

2 Types of synergy

2.1 4 main types of synergy

According to Ahuja and Novelli (2017), when a firm is diversified, it can benefit from different types of synergy. Based on different types of **mechanisms** underlying the diversification-performance relationship, there are 4 broad categories of synergies :

- Horizontal operating synergies
- Vertical operating synergies
- Strategic synergies
- Financial synergies

Each of these synergy types of synergies has sub-mechanisms that have potential positive impacts for the firm.

Horizontal operating synergies

To understand these synergies, the concept of horizontal operations is important. These operations involve the collaboration with other firms and business units working at the same level in the production line. Horizontal operating synergies have for objective to benefit from sharing resources, assets and activities across businesses.

Ahuja and Novelli (2017) said that sub-mechanisms beyond horizontal operating synergies are multiple. The cost side manifests itself through **economies of scale and scope**.

Economies of scale are economies due to the reduction in the unit cost of a product by a firm when the decision is to increase the quantity of the production. On the other hand, economies of scope are directly related to synergies because it comes from **joint productions**. However, it also concerns the reduction of unit cost. They arise when a business produces a wider range of products rather than specialise in one product.

There is a last sub-mechanism, called **economies of learning**, which allow a reduction of the production cost. Indeed, the sharing of knowledge and skills allow to increase learning capabilities of production. There is then improvements in the production domain creating this kind of economies. If a business unit is advanced in R&D, it can transfer the acquired knowledge to related businesses.

Vertical operating synergies

Vertical operating synergies are very different from horizontal ones because, according to Ahuja and Novelli (2017), vertical operating synergies emerge when a cooperation is achieved through the production line. It is due to the **vertical integration**. A firm integrate in its own activity one of its suppliers or one of its customers. The desired consequences of integrating the successive stages of a **value chain** in the same company are multiple.

First, it allows to counter opportunism of suppliers and buyers that would have a market power on the firm if there wasn't any vertical operating synergy.

Second, the coordination allows improvements of the quality of the ultimate product and to reduce production costs. More precisely, according to Jones and Hill (1988), the main economic benefits is **economies of integration**. They have different origins. On one hand, such economies come from a lower economic cost in the production because internalization allows the firm to invest in specialized assets. On the other hand, they also come from the elimination of the possibility of **resource misallocation** due to a lack of information.

However, Jones and Hill (1988) specified in their article that vertical operating synergies are able to gain benefits from other types of economies. To understand it, **task interdependence** between sub-units must be taken into account. In vertical integration, the interdependence is sequentially pooled. For example, economies of internal capital markets, that can basically be understood in terms of market failure in the external capital market, can be one of the benefits of vertical operating synergies. This is possible because these economies are based upon sequential interdependence between divisions such as economies of integration.

Finally, it allows to eliminate the *transaction costs* that are, according to Hill and Hoskisson (1987), the costs of drafting and monitoring contingent claims contracts to ensure harmonious trading relationships between partners. However, transaction costs are also the costs of opportunistic action by one of the trading partners.

Strategic synergies

Ahuja and Novelli (2017) stated that *strategic synergies* are about coordination with other markets, from there come 2 situations.

The first situation is for firms willing to do implicit coordination with its competitors to have a **mutual forbearance**, and even increase barriers to entry. Indeed, according to Li and Greenwood (2004), close correspondence in market structures raises the possibility of collusion between firms because it en-

ables them to avoid the full rigors of competition by practicing mutual forbearance. So this forbearance provides advantages such as giving the opportunity for firms to dampen the effects of market forces or to blunt the intensity of competition behavior.

However, as explained by Li and Greenwood (2004), firms have to be careful because they may lack the organizational capability to formulate and implement a strategy of forbearance. This capability means that the firm must have appropriate intra-organizational mechanisms in place both to facilitate coordination across business units and to reward cooperative effort by business unit executives. Furthermore, firms need to know in advance who their competitors are but also to know how those firms might behave if faced with aggressive competition or implicit offers to collude.

Finally, forbearance can be riskier when information overload occurs due to an excessive number of rivals many battlefields. In that case, this is more difficult to gain reliable intelligence.

The other situation, coming from the coordination with other markets, concerns firms with multiple businesses. Indeed, these firms can use **cross-subsidization**. This is the situation in which profits from one activity of the firm, are used for another of its activity that is in need of money to have an advantage on the market.

Finally, strategic synergies can also be useful to increase in size and reputation.

Financial synergies

As explained in Ahuja and Novelli (2017), *financial synergies* emerge when there is a co-location of 2 businesses and their correspondent **cash-flows** and decision-making activities. The main goals of such synergies are multiple.

One of them is to reduce the risk of the firm if the cash-flows of the individual businesses are **negatively correlated**. Then, the firm is able to realise cash-flow presenting less risks.

Another goal is to make **information economies**. It means that firms could be run as internal capital market with headquarters that can have access to the accounts of each individual businesses. That process allows to make the efficiency much stronger. This efficiency is felt especially in the deployment of capital unlike entities that are outside the corporation.

Other aspects exists but this type of synergies will not be seen in depth in this work.

2.2 6 forms of synergy

Goold and Campbell (1998) listed, in 2 articles, the different types of synergy benefits. This list is used to help managers to focus on opportunities that would have been overlooked. Then, business synergies

can be classified under 6 headings according to benefits they can create.

Shared know-how

A synergy can be represented through the sharing of resources, knowledge, skills, and *know-how*. For example, it may involve pooling knowledge about how to succeed in specific geographical regions or leveraging expertise in functional areas. The know-how may be written in manuals and procedures in order to be read and applied, but it is actually less formally documented. **Value** can be created by exposing a group of persons to another one with a way of thinking and a way of doing things different.

Shared tangible resources

On the opposite of the shared know-how, Goold and Campbell (1998) distinguished *shared tangible resources*. The goal is to benefit from synergy by saving money thanks to sharing physical assets. An example would be to use a common manufacturing plant to create economies of scale and avoid the duplication of production effort.

Coordinated strategies

A synergy can also be beneficial through *coordinated strategies*. It can be beneficial for a company to align strategies of its different businesses. It can be useful to coordinate goals and responses of business units to counter competitive threats. For example, units can reduce competition between them by allocating markets or they can also coordinate reactions to shared competitors. However, it's tough to achieve because a right balance autonomy of the business units and the corporate intervention has to be found.

Vertical integration

Another form that synergies can take is by *vertical integration*. Vertical integration involves coordinating the flow of products from one unit to another. That phenomenon will lead to a **decrease of inventory costs**. Moreover, it will allow to increase speed product development and improve capacity utilisation, market access and price realisation.

Pooled negotiating power

Synergies can also be represented by a *pooled negotiating power*. It means to have a better control on the suppliers behaviour. Combining the purchases make it possible to have a better impact and leverage over

suppliers. The pooled negotiating power is not limited to business units and firms but it can be a **joint negotiation** between different stakeholders such as universities, governments, customers, etc.

Combined business creation

The last benefit of economic synergies is the *combined business creation*, involving new businesses. Different units can combine their know-how, combine one of their activities with one of the other units or make internal joint ventures or alliances between units **to form a new unit**. By doing so, creating a business unit becomes easier.

These 6 categories were identified by Goold and Campbell (2000) to facilitate the classification of the potential different types of benefits that arise in a strategy of synergy. However, it is important to know that this is not the only way to classify synergy benefits. The advantage of this list is that it can **trigger fresh thinking** and it may help to prevent systematic blind spots. For example, it can prevent managers from focusing too much on shared know-how and shared tangible resources and not considering other sources of benefits that can be significant.

Goold and Campbell (2000) proposed 3 prompts that can help to reveal unexploited potential.

The first one is a rough **modelling of value chain overlaps**. Indeed, linkage opportunities can work for businesses with value chains that overlap. Coordinating purchases, sharing premises and sales forces are beneficial between these businesses and can rapidly yield a broad sizing of the benefits available.

Another valuable prompt is to **do interviews, focus groups or questionnaires** designed to draw out consensus from business unit and parent managers. Every point of view deserves to be heard and if a manager agrees that there is a worthwhile benefits to go for, then it is necessary to consider his point of view.

The last one is to **identify initiatives** that are being strongly championed by individual managers. That action well executed provides a shortcut to identifying priority opportunity areas. Indeed, if a manager puts himself in unpleasant situation just because he thinks there is a worthwhile opportunity, it is usually worth taking notice.

3 Market Failures

Bator (1958) stated that the modern welfare economics is governed by the **duality theorem** that says there is a correspondence between **market performance** and **Pareto efficiency**. But the duality can fail and lead to a phenomenon called a *market failure*. A market failure is a situation in which there is an inefficient distribution and allocation of goods and services in the free market. It occurs when the supply is not equal to the demand.

3.1 Types of market failures

Bator (1958) categorized the 3 main market failures that are due to 3 different causes : information asymmetry, externalities and public goods.

Information asymmetry

Information asymmetry occurs when every actor on the market does not have the same information. Information on the price or the quality of the product can be unevenly distributed through the sellers, suppliers, etc. That problem might involve an **incompatibility** between the price and the quality of the product such that the Pareto-efficient allocation is no longer respected.

Externalities

Externalities occur when the actions of an economic agent have a positive or negative impact on the well-being of other agents **without monetary compensation**. There is no incitement to continue the activity with positive impact and to stop the activity with negative impact. The allocation of the resources is thus inefficient.

Public goods

The last cause of market failure refers to the problem of public goods. *Public goods* are non-competitive and non-exclusive goods. These can be defined as follows : "each individual's consumption of such a good leads to no subtractions from any other individual's consumption of that good"¹. There is no market possible for that kind of goods because producers cannot obtain payment for these.

By combining the conditions put forward by Williamson (1975) and Jones and Hill (1988), several main factors producing difficulties in transaction are obtained. If these factors are grouped into condi-

¹P. A. Samuelson, *Review of Economics and Statistics*, 1955.

tions, the number of conditions is limited to 3. If one or more of these conditions aren't respected, a market failure occurs :

- Bounded rationality in an environment which is characterized by high levels of uncertainty or complexity
- Information impactedness
- Opportunistic behaviour in a circumstance in which there are small number

Dundas and Richardson (1980) stated that market failures can be distributed in 2 classes. This is due to the fact they can appear in only 2 types of market.

First, market failures can appear in **individual product markets** and give birth to single product firm. It happens because markets fail to bring together sellers and buyers to make transactions in which complex products are involved easier. Furthermore, there is also a factor of uncertainty, directly bounded to the first condition cited above, that may prevent transactions from occurring. This factor is particularly valid for innovations and products required in the future that does not exist presently. All of that gives rise to related product firms that internalize transactions.

The second type of market that may also fail is the **capital market** and leads to the emergence of the unrelated product firms, this will not be discussed in this paper.

After explaining the different types of market failures existing, a focus on 2 of the 4 types of firms that arise thanks to this phenomenon is made : the single product firm and the related product firm.

3.2 The single product firm

Dundas and Richardson (1980) said that a *single product firm* is a firm whose strategy is to offer a single product by concentrating all its activity on this product. It appears when **a firm internalizes transactions in a more efficient way than they are purchased**. This internalisation allows to avoid transaction costs.

However, continuing to grow after exploiting the market failure is not always an easy job. It depends on the type of market the firm is in and the ease of entry. Dundas and Richardson (1980) stated that 3 fundamental options exist for a single product firm to continue to grow as a function of the skills of the executive group :

- If it is technically oriented, the goal is to create a product that the market cannot offer.
- If it is market based, the goal is to sell products at a lower cost than others in the market.

- If it is financial, the goal is to find a way to allocate transactions more efficiently than the market allocation system.

3.3 The related product firm

According to Dundas and Richardson (1980), the point of differentiation of the *related product firm*, compared to the other ones, is the relation between all the core skills of the firm. Unlike the unrelated product strategy, the related product strategy is based on **innovation** by doing research and development. It allows firms to integrate innovation functions into its ongoing activities. This integration allows the firm to avoid the problem of the market which is the output of R&D failing because of bounded rationality and information impactedness.

For Rumelt (1974), the most performing type of firm was the related product firm that limited the scope of their diversification.

4 Resources and skills

According to Collis and Montgomery (1998), if a firm wants to create profitable and viable synergies, it has to evaluate all the *resources* it has. Resources are literally everything that a company possesses : all its assets and skills. It includes *tangible assets* (products, factories, warehouses,...) and *intangible assets* (brand name, relationship with customers,...). Resources can be general or very specific and this will determine the type of synergy that the company will be likely to do.

Creating good synergies requires a good corporate strategy which has different aspects, represented in Figure 1. This diagram explains that a good strategy occurs when managers consider things as a whole and not just the sums of its parts. Resources that are managed correctly according to the businesses of a company will result in a **competitive advantage**.

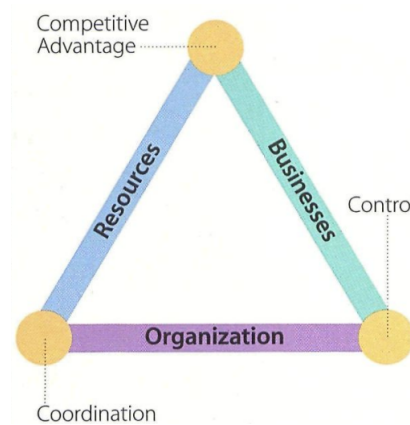


Figure 1: The triangle of corporate strategy. (Collis and Montgomery (1998))

4.1 Types of resources

Barney and Hesterly (2015) talked about the different types of resources that are involved in a firm. They agreed with the definition of Collis and Montgomery (1998) that resources include tangible and intangible assets. They added the notion of **capabilities** to this concept.

They defined the capabilities as a subset of a firm's resources, tangible and intangible, that allow the firm to take full advantage of its other resources. **Both** resources and capabilities are necessary to develop good corporate strategies. For example, good and efficient teamwork among the managers will allow a firm to mobilize its resources in the best places whereas poor management skills, even with better resources, will not allow the firm to create as much value from its resources.

Then, Barney and Hesterly (2015) proposed a classification into 4 categories for the resources and capabilities of a firm.

The *physical resources* include all the physical technology of a firm. In this category, they included the plant, the equipment, the geographic location and the access to raw materials of the firm. As an example, for a firm such as Q8, the physical resources are all their drilling sites, refining sites and gas stations, including all the equipment, plus the access they have to oil reservoirs and the geographic location of the countries that they are implanted in for their activities.

The *financial resources* include all the sources of money of the firm : shareholders, bondholders, banks, cash from entrepreneurs and earnings that the firm made in its history and reinvested in itself.

The *human resources* relate to the people working in the firm. The training, judgment, intelligence, experience, relationships and insight of **individual** managers and workers are all human resources of a firm. An ambitious and ingenious entrepreneur can be of the utmost importance for a firm to develop new strategies but each worker, not just senior managers, is a resource for the firm ; persuasive sales forces, smiling and polite receptionists, ...

The last type of resources mentioned by Barney & Hesterly are the *organizational resources*. It also implies characteristics of individuals, but focuses on the ability to work as **groups** of individuals. This includes the reporting structure of a firm, its planning, control and coordination systems, culture and reputation, relationships with other groups and inside the firm. For an example in the construction sector, the workers on a construction site can help on a job that was not their initial task, to help their colleagues and make sure the schedule is respected. This represents good organizational resources.

4.2 Competitive advantage : A resource-based view

Peteraf (1993) said that having a good knowledge and management of his resources leads to a competitive advantage. She proposed 4 conditions that must be satisfied in order to achieve this.

Resource heterogeneity

Peteraf insisted on the fact that the assets and capabilities underlying production must be *heterogeneous* across firms in the same market. Not all the firms of a market have similar technologies, procedures, skilled staff, etc. This creates different levels of **efficiency** which makes some firms superior to others in terms of production. Firms with the superior resources will of course earn rents. The law of the market will naturally provide a competitive advantage to firms with superior, inimitable resources.

Peteraf assumed that firms with superior resources have a **lower average production cost** than other firms. The price of the product is determined by the law of supply and demand and high prices will encourage new, less efficient, firms to enter the market. The efficient firms will then earn rents due to

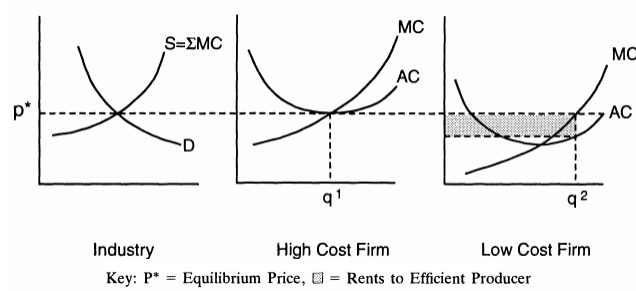


Figure 2: Scarcity rents with heterogeneous factors. (Peteraf (1993))

this heterogeneity of the resources. For example, a firm that develops a new manufacturing process using new technology that other firms cannot acquire, will earn more rents than its competitors.

Ex post limits to competition

The second condition mentioned by Peteraf (1993) is ex post limits to competition. If the heterogeneity cannot be maintained on the long-term, the rents will most likely go down and the competitive advantage will be lost. Ex post limits assure that after a firm has gained a superior position in the market, there must be forces that limit competition for those rents. Peteraf identified 2 of those forces : **imperfect imitability** and **imperfect substitutability**. These isolating mechanisms preserve the condition of heterogeneity, it represents the ability to protect a resource from imitation and substitution.

A firm could protect itself from having its valuable products imitated by manufacturing a key component that is only compatible with its own components or production line.

Imperfect mobility

The next condition reported by Peteraf is imperfect mobility. Resources that cannot be traded are said to be **perfectly immobile**, other resources can be described as **imperfectly mobile**. Peteraf defined them as resources that could be traded but that are far more useful for the company that uses them compared to other firms.

These resources are not interesting to trade because they are **firm-specific**, they would have no equivalent uses in other firms. Resources can also be imperfectly mobile because the **transaction costs** that their transfer would generate are exceedingly high. It is through that characteristic "bound to a firm" that they create sustained advantage and generate rents.

Ex ante limits to competition

Imperfect resource mobility is not sufficient on its own. Peteraf (1993) said : "Prior to any firm's establishing a superior resource position, there must be **limited competition** for that position" . In order to maintain a superior position on a market for a company, there must be a barrier to entry for new firms that would want to enter this business. This way, there will be a limited competition for the position of leader.

For example, one cannot simply decide to enter the mining sector. The firm would first need to get the required infrastructure, personnel, technologies, etc. Then, it would have to acquire lands to start an exploitation, legal authorizations, customers, etc. Since these resources are limited, there is a solid competition that allows the leaders of the sector to maintain their advantage.

According to Peteraf (1993), these 4 conditions will grant the company a **sustainable competitive advantage**, as long as the market they might try to enter requires resources that match their **resources and capabilities**.

Barney and Hesterly (2015) stated that, if the objective is simply to outperform the other firms in its own industry, only the heterogeneity and the imperfect mobility of the resources are necessary.

4.3 The resource continuum

According to Collis and Montgomery (1998), the resources of a company range along a **continuum**. These resources go from very specialized at one end, to very general at the other. The degree of specialisation will determine the set of businesses that the company should compete in.

The location of a company resources on the continuum will also set the limits of what the company can do in terms of organizational design. Most managers want to achieve synergies or M&A² by comparing the similarity of their products with other businesses, to determine their **relatedness**. This is a common and costly mistake that can be avoided by focusing on the resources.

"Relatedness is about resources, not products."

Collis and Montgomery (1998).

Collis and Montgomery (1998) agreed to say that good synergies can be achieved with resources that are positioned anywhere on the continuum. The important action is to adapt the other components of your

²Merge and Acquisition

strategy to align on **the nature of resources**. The scope of businesses, the coordination mechanisms, the control systems and the size of the corporate office need to be appropriate, as represented in Figure 3.

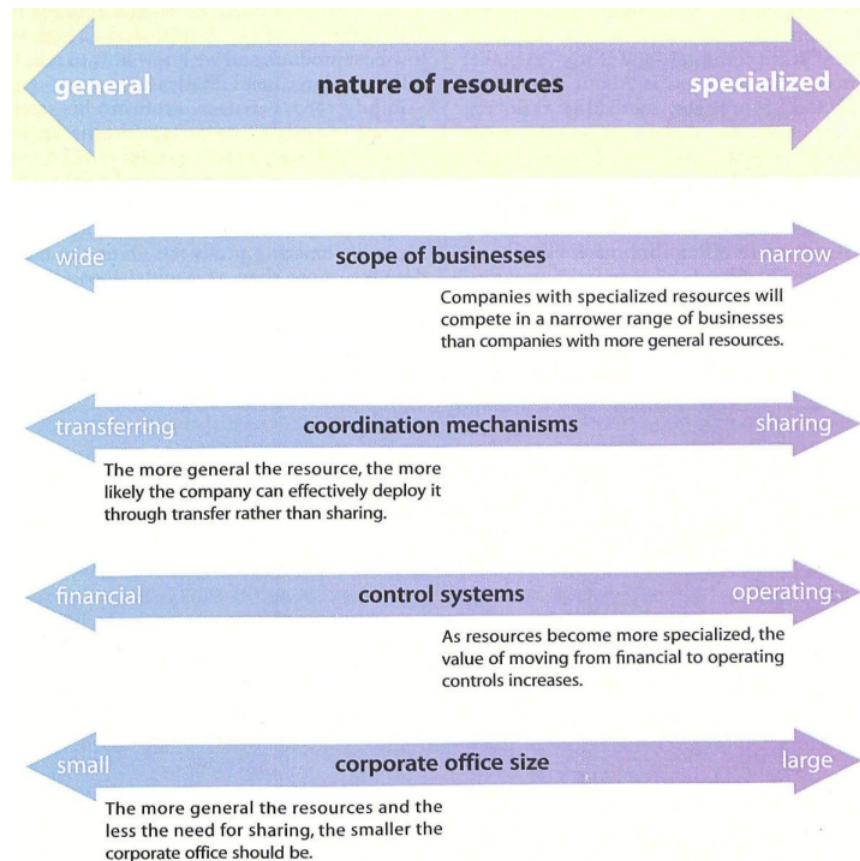


Figure 3: The resource continuum. (Collis and Montgomery (1998))

4.4 Complementarity and similarity

Zaheer et al. (2011) investigated on **merging and acquisitions**. The acquisition of a company by another one will reduce their overall value, as it was observed most of the time in the previous decades. And even though this well-known, managers still want to create synergies through acquisition and integration of companies. This mistake can be explained by the fact that managers often make their decisions based on similarity of the resources, but they should also consider the complementarity.

According to Zaheer et al. (2011), the *complementarity* between target and acquiring firms, which can be extended to economic synergies, exists if the resources of the 2 businesses **complete** each other. This is key to creating added value because complementary target brings unfamiliar elements to the acquirer.

Similarity of the resources concerns the **likeness** of technologies, operations, products, customers, distribution channels, etc. Similar resources will add up whereas complementarity will enhance the initial resources and create added value.

A common example would be a company that produces cars. If the managers want to create synergies, acquiring a different car company would not be the wisest choice because the target company cars will probably be different from the ones that the acquirer produces. A wiser choice would be getting in touch with the company that produces the engines of its cars to create vertical integration.

For Zaheer et al. (2011), **relatedness** not only includes similarity of the resources between 2 firms, it also includes the complementarity. Many think that complementarity is the most important factor for creating added shared value.

The point of Zaheer's work was to show that if the acquirer and target resources are very similar, it is more profitable to **integrate** the target firm to limit costs and to realise **economies of scale**, which is not what we consider economic synergies.

On the other hand, if resources are not similar but complementary, Zaheer said that the better choice is to work **with** the firm and to let it maintain its autonomy. Things become more complicated when some resources are similar and some other are complementary, as represented in Figure 4.

Similarity	High	High integration Low autonomy	High integration High autonomy desirable but limited by need for integration
	Low	Low integration Autonomy based on factors other than relatedness	Moderate and selective integration High autonomy
		Low	High
		Complementarity	

Figure 4: Taxonomy of Implementation strategy based on relatedness in M&A. (Zaheer et al. (2011))

This study is mostly directed towards Merging and Acquisitions of firms but the conclusions drawn by Zaheer et al. (2011) are useful to us in our resource analysis :

- The similarity of the resources between 2 businesses **does not** mean that associating them will create added value.
- Since non-M&A synergies grant autonomy to the 2 firms, the **complementarity** of the resources is the important thing to look at, regarding economic synergies.

4.5 Shared resources

For Collis and Montgomery (1998), using key resources where they are most useful is an important part of corporate strategy. They stated that the resources of a company can either be **transferred or shared** by the different business units of a firm.

First, they make the distinction between **public and private goods**. Public goods can be used in several businesses at the same time without conflict, a brand name, for example. Private goods are resources much more difficult to manage collectively and lead to conflict or competition between businesses, like the use of a warehouse.

Zaheer et al. (2011) said that the transfer of public goods can be done easily because there is no competition in their use. The problem with public good is their **preservation and development**. For instance, a Disney character used in movies, series, merchandising, etc. Who is responsible for the coherence of his story in the different universes ? It is important to control that one use does not damage the value of the good.

Private goods management requires more **coordination** because the action of one business will directly impact the other businesses, like the use of a shared sales force for a specific product.

The transfer and the share of resources within a company can create a lot of added value. If resources are not used to their full potential, they have **excess capacity** that could be used in other businesses to achieve synergies. This is the main topic of the next chapter.

5 Diversification and performance

Ahuja and Novelli (2017) defined *diversification* as the action of a company that will start the production of new products or services to access new markets. Many years ago, single product companies were leaders on their respective markets but today, only a small proportion of firms are still single product because of the many advantages that diversification can create.

Diversification is a way to make a firm grow **from the inside**. The opposite, growth from the outside, is achieved mainly through merging and acquisition of firms. Peteraf (1993) stated that diversification is the result of **excess capacity** of resources that can be used in areas where there is **market failure**. A firm could simply sell its unused resources and thus single business firms would be more efficient. Because of market failures, diversification can happen and be profitable for a firm.

Ahuja and Novelli (2017) also insisted on the fact that diversification is a multifaceted construct. A firm can be diversified in technologies but not in markets, for example.

5.1 Economies of scope

Teece (1980), Panzar and Willig (1981) studied the increase of the scope of firms and the resulting economies. *Economies of scope* are one of the major reasons that lead firms to diversification, it creates synergy by impacting the cost aspect of the production of a firm. It represents the economies realised when the production of one good reduces the cost of producing other related goods.

Teece (1980) said that economies of scope exist as long as the cost of joint production of outputs is smaller than the sum of the cost of the production of each output separately.

The main reason for this condition to be respected is the existence of **sharable inputs**. Panzar and Willig (1981) defined sharable inputs as inputs that, once procured for the production of one output, would be also available to aid in the production of other outputs. That includes productive capacity, indivisible equipment usable for different manufacturing processes, human resources applicable to the production of more than one output or any input that can be used in derived products.

Panzar and Willig (1981) also highlighted the fact that realising economies of scope has 2 major issues. The first is about the definition of a sharable input, how to identify them from just the description of the different technologies and how to estimate the possible economies of scope. The second concerns the vertical structures of firms and market for the services of sharable inputs.

Teece (1980) stated that 2 other factors are key in the creation of economies of scope : know-how and specialized and indivisible physical assets.

Know-how

Teece (1980) stated that know-how can be seen as an **intangible public good** of a firm, a resource that can be shared or transferred to create value. Through exploitation of this know-how, the **sharing of information** between the different users, a significant cost reduction can be achieved for the firm.

Know-how can also create value in a lot of different ways. It can be related to the technologies of a firm, the skills of the managers, internal structure, etc. The point of Teece was that shareable input on its own is not sufficient to create economies of scope. Valuable know-how, seen as a rare resource in this approach, is required by the market if the firms wants to be competitive. We see the clear link with the resource-based view described by Peteraf (1993), Barney and Hesterly (2015). The exploitation of this concept leads to synergies based on shared know-how, as explained in section 2.2.

Indivisibilities

An indivisible asset provides a foundation for economies of scope if it is used as input for 2 or more production processes.

Teece distinguished 2 types of indivisibilities. The first one involves the use of a physical asset. If large scale units are used at their design capacity and serve as inputs into 2 or more production units, **joint production** will produce economies of scope which will provide a lower average cost.

The second type involves indivisibilities involved with information, related to know-how. The acquisition of information will imply a set-up cost. This may be costs for research and development or simply the cost of collecting information.

Limits

Teece (1980), Panzar and Willig (1981) came to the conclusion that economies of scope that can be achieved through diversification are limited. Even though using and transferring the know-how into different businesses will not damage its value, **the cost of accessing** it will increase if too many different applications are attempted.

The human factor is very important to understand this limit. If the demand for sharing know-how in different businesses is too high, the people responsible for it will not be able to handle it. The willingness of diversification will then increase the costs of this transfer and limit economies of scope. This is why the diversification must be done to businesses that are close to the specialized business of the firm.

To sum up, Teece (1980) told us that diversification is most efficient to realise economies of scope in 2 cases :

- The production of 2 or more products is based on the same know-how, owned by the firm.
- An indivisible specialized asset is a shared input in the production of 2 or more products.

Panzar and Willing concluded their work by stating that diversified firms can emerge in a competitive environment by realising economies of scope only if their multiproduct cost function integrates both production and organizational cost.

5.2 Related and unrelated diversification

As stated by Collis and Montgomery (1998), relatedness is about resources, not products. More specifically, relatedness is about similarity and complementarity of the resources of 2 businesses. A *diversification discount* is observed when a firm enters a business that is too far from its own business (the business in which the firm is supposed to have a competitive advantage). This means that the firm would have realised a better profit by keeping the 2 business separated and realised market contracts, rather than trying to create synergy where there is no obvious relatedness.

Montgomery and Wernerfelt (1988) defined the notion of *distance between 2 businesses*. A business is considered the closest to another one (from a resource-based point of view) if diversifying to this business generates the highest rents, compared to other business. If a target business is less related to the original business of a firm, the bigger the "diversification distance" is. When the distance between the 2 businesses is big, the benefit of the diversification will be much smaller. But the relationship is not unique, it also depends on the type of resources that are implied in the diversification process.

Resources of a firm range along a continuum that goes from specific resources to general ones. According to Montgomery and Wernerfelt (1988), the diversification to a related business will be even more profitable if the required resources are **very specific and match the resources of our firm**. On the other hand, more general resources create less added value through diversification, but it also allows to enter more unrelated businesses. This is represented graphically on Figure 5.

For Montgomery, the more a firm will diversify, the bigger will be the distance with its resources and thus the larger will be the loss of marginal rents. The resources used for the diversification will then confer **less and less economies of scope**. If after all the wanted related diversifications, excess capacity remains, the firm can enter markets even more distant until marginal rents become subnormal.

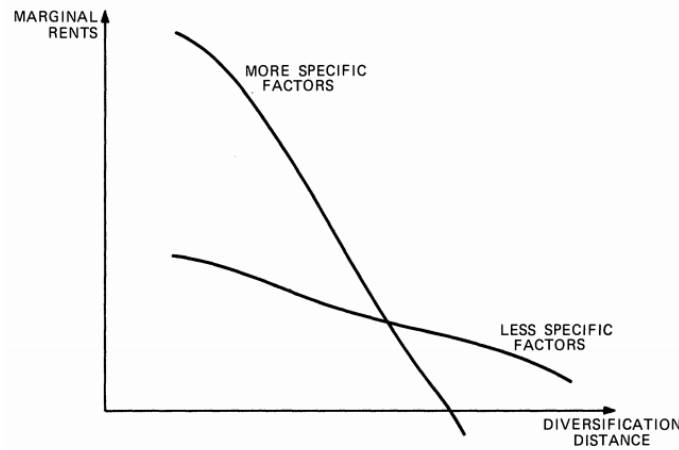


Figure 5: Relationship between diversification distance and marginal rents. (Montgomery and Wernerfelt (1988)).

Conglomerates

Diversifying to unrelated businesses is often realised in order to regroup business units under the same organizational structure, to ensure more financial safety and limit risks. These are the **financial synergies**, it can be an effective strategy but this work does not go over this type of synergy.

5.3 Diversification-performance relationship

There is a huge amount of factor that are relevant to try to establish the diversification-performance relationship of a firm. Profit margin, growth, economies of scope realised, return on investment, etc. as a function of number of products, of business units, relatedness of the diversification ? Trying to have a universal law would not be representative of how the firm manages its diversification because of the complexity of the phenomenon.

However, economists tried to understand the different **mechanisms** that link the diversification to the performance of the firm using different indicators.

The U-Shaped Relationship

Ahuja and Novelli (2017) tried to find a clear relation between the degree of diversification of a firm and its economic performance. They could not see a clear difference between the diversifying and the non-diversifying firm but they found out that **firms with predominantly related diversification grow significantly better than predominantly unrelated ones.**

They used the work of Zahavi and Lavie (2013) that showed the existence of a U-shaped curve as relationship between the product diversity and the sales growth. This U-shaped relationship can be

explained when looking at different phenomenon :

- First, the top left of the U : the firm produces only few products, narrow range of diversification.
- When the firm starts to diversify to other businesses, growth is reduced by the negative transfer effects.
- These negative effects are compensated by the economies of scope that are realised through diversification. The technological investments realised also have a positive impact on the firm performance.
- Finally the firm intra-industry diversification experience starts to accumulate which attenuates the profit made from technological investment.

The S-Shaped relationship

Ahuja and Novelli (2017) also went through Hashai's work (2015) that suggested that the relationship between intra-industry performance and diversification might actually have a S-shaped curve.

The first mechanisms are the same as in the U-shaped model. But when the firm keeps diversifying, Zahavi and Lavie stated that when the required technological investments are made, the marginal profits achieved through further investment are smaller and smaller due to the firm's intra-industry experience. Which implies the curve to end at the top right of the U.

Hashai, on the other hand, stated that further diversification will increase **adjustment and coordination costs**. These costs, that are explained in a subsequent chapter, will become significant and will cancel the benefits of realising new economies of scope. The performance will go down which gives this S-shaped form at the end of the curve.

Linear and curvilinear models

It is clear that diversification can significantly improve the performance of a firm. Palich et al. (2000) stated that refocusing a firm on diversification can improve its financial outcomes and they proposed different models for this relationship.

First a linear model, based on the fact that diversification and performance are **directly and positively linked**. His model has many hypothesis :

- Diversified firms can create and benefit from market power through actions on their competitors.
- Diversified firms can obtain more investment sources because they act in more sectors than single business firms. Their capital comes from internal and external sources which offers more flexibility.

- The head office has more market information to make better choices in its utilisation of resources.
- A diversified firm can make more use of its unused resources through other businesses.
- Diversification create positive portfolio effects that reduce the global risk of the firm.

All these elements leads to believe that diversification is only a beneficial action and that it will only impact positively the performance of a firm. But there are some inconsistencies that led Palich et al. (2000) to look for alternative models.

They proposed the inverted-U model that integrates the fact that **diversification is not always associated with the same performance improvement** and he integrated the notion of relatedness in his model.

The related diversifiers can thrive because of the economies of scope realised and by exploiting the synergies between the different operating units. They can also share resources and improve their rents by grouping projects. The different models are represented in Figure 6.

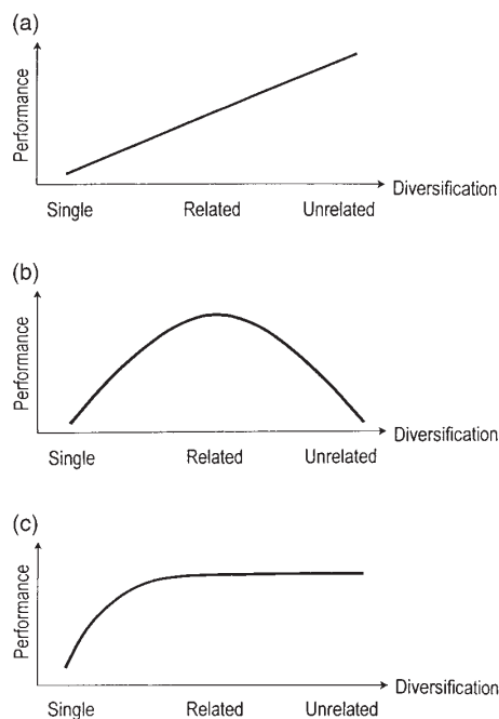


Figure 6: (a) Linear, (b) Inverted-U and (c) Intermediate models.(Palich et al. (2000))

The **intermediate model** brings up the fact that related diversification is superior that unrelated because there is a better resource use than leads to better global performance. But is also integrates the notion of coordination and transaction costs than tend to significantly increase when a firm diversifies to less related businesses.

But Palish also stated that related diversification has some negative aspects. The activities necessary to exploit related diversification require solid organization than can lower the benefits. These costs come from the high degree of cooperation necessary, the intra-firm exchanges, the lack of communication, etc.

It also integrates the fact that unrelated strategies can lead to unique advantages coming from **financial synergies**.

Sources of endogeneity

The different models stated above are hard to interpret because of the many external effects mentioned. But another source of errors can be pointed in these models, problems coming from the model itself called **endogeneity problems**.

Bascle (2008) focused on endogeneity problems in regression method, particularly bivariate linear regression method :

$$Y_i = \beta_0 + \beta_I X_i + u_i$$

Where Y is the dependent variable, the slope parameters β_0 and β_I respectively the intercept and the slope, X the independent variable and u_i the disturbance term.

Bascle identified 3 instances where endogeneity can occur :

- Errors-in-variables

Errors-in-variables problems come up when the true value of a regressor X is **unobserved** and becomes an error ridden variable $X_i^* = X_i + e_i$, thus including e_i the measurement error.

- Omitted variables

Bascle defined the omitted variables bias as the most commonly encountered problem in social and behavioural sciences. This bias exists when a variable affecting the dependent variable is **correlated** with one or more explanatory variables and that this variable is not present in the regression model.

Regarding synergies, an example would be a firm that tries to link its future profits to the diversification to new businesses, without integrating in the model the size and the growth of the different sectors, simply by comparing the technology similarities.

- Simultaneous causality

The last source of endogeneity identified by Bascle is the simultaneous causality between the dependent variable and the regressor(s), when sources **both have an influence on each other**. The simultaneous causality will cause X_i and u_i to be correlated, the coefficients β will then be biased or inconsistent.

This can happen in diversification-performance relationship because the diversification choices will impact the performance of the firm but on the other hand, the economic performance will affect the decision of managers to focus on a business or to diversify to others.

Bascle finally mentioned that sources of endogeneity can cumulate. This makes the calculation of estimators using regression problem very unpredictable and hard to solve. This makes the diversification-performance relationship an even more complex phenomenon.

5.4 Considerations of investors

According to the responses of the survey that conducted McCahery et al. (2015), large diversifying mergers and acquisition strategies are considered to be a warning trigger by 82 % of the investors they interrogated.

Investors expectations regarding managers are the **creation of value**. Synergies that create the most value for a firm are the ones that diversify to the most related businesses. The investors are not hostile to **related diversification** because it creates synergies that they **cannot achieve** by simply investing in single business firms.

This is explained by the fact that firms have different types of resources that can all be similar or complementary to other business. Whereas an investor resources, mainly financial resources, decision-making and analytical skills, do not create the same synergies through the stock market.

On the other hand, Kavadis and Castañer (2014) underlined the fact that investors can diversify to unrelated businesses more easily than it is for firms. Investors do not need the firm to diversify itself to other businesses, it represents a risk for them. Some would even prefer receiving dividends rather than seeing the profit of the firm invested in diversification.

Investors are not interested in unrelated diversification because they can achieve the same objectives by diversifying their **stock portfolios** on the equity markets. It makes sure that it is done according to **their** diversification choices.

Creating synergies for a firm has a lot of costs, this is to be discussed in the next section. Investors can diversify their businesses without such coordination costs, transfer costs, etc. Regardless of the relatedness of the resources.

The only thing that investors will reward is related diversification that leads to **synergies with added value**. Even if the synergy has a cost, it will be profitable as long as the **net benefits** are positive. Compensating strategies are also accepted if the balance is positive, it was the case for the board of directors of General Electrics in 2002 (e.g., Bascle (2016)).

6 Anti-synergies

According to Goold and Campbell (2000), **anti-synergies** or synergy killers are all the phenomenon that prevent the synergy to be fully effective and optimal. In other words, these are **impediments**. Anti-synergies are the costs related to an initiative of synergy, the substantial costs due to the management of several businesses. The higher these costs are, the less value the synergy has. Imagine a firm wants to realise a synergy and managers anticipated a **gross benefit** of 100€. If the costs associated with that synergy are 100€, then the **net benefit** of such a synergy would be 0€. In that way, the opportunity of a synergy shouldn't be taken. It is the net benefits that need to be considered to decide if a synergy is profitable or not.

6.1 Different types of anti-synergies

Anti-synergies are multiple and so, they can be divided in different categories. By bringing together the articles of Goold and Campbell (2000) and Ahuja and Novelli (2017), an exhaustive list of the different existing types of anti-synergies, with its definition, is realised :

- **Coordination costs** : *coordination costs* are the unavoidable costs coming from the necessary coordination to share resources across businesses.
- **Opportunity costs of the resources** : When a synergy occurs, resources need to be allocated among activities. A resource is used after that a choice has been made about it. So, this choice might not be optimal. Therefore, it implies *opportunity costs* due to a better foregone opportunity.
- **Administrative costs** : Also called bureaucratic costs, *administrative costs* tend to cause loss of scale and of efficiency due to captive customers or suppliers. These costs arise from administrative inefficiencies that increase in organizational size and complexity.
- **Adaptation costs** : *Adaptation costs* are due to the necessity to adapt resources and routines that already are employed in a business, to new ones.
- **Learning and absorptive capacity costs** : These costs are the consequence of a need to understand in new contexts.
- **Compromise costs** : *Compromise costs* originate when there is a lowering of the performance obtained in a specific use of a resource. This is due to the simultaneous attempt to maximize its joint performance across all uses.

- **Contagion costs** : *Contagion costs* are the costs that emerge when the decline in value of a brand implies the decline in value of the same brand for other product categories.
- **Conflict costs** : *Conflict costs* are related to the non-optimization of the investment decisions but also to the inefficient allocation of capital among different units. That inefficiency is due to the internal power struggles generated by diversification.
- **Information and control costs** : *Information and control costs* arise from the inefficiencies that are experienced when the increasing difference across businesses leads to limitations in information processing and in setting up dedicated control mechanisms.
- **Inhibiting corporate strategy** : This phenomenon appears when there is a lack of clarity about corporate priorities leading to managers to be too cautious about their collaboration.
- **Infighting between the barons** : Battles between senior managers may happen in some companies. They are due to different ways of thinking and it can have a massive negative impact on cooperation.
- **A culture of secrecy** : That phenomenon emerge when information, in secretive companies, is given out reluctantly. It is from fear of competitor espionage or it is a result of resisting corporate information requests and interference.
- **Domineering corporate staff** : When the corporate staff has domineering attitude, business managers does not want to listen to their ideas and advice. This lack of communication and solidarity implies a resistance to the good conduct of a synergy.
- **Misaligned incentives** : That problem comes from bonus systems and promotions criteria that aren't well defined to incite business managers to collaborate with other business units in a synergy.
- **Inadequate performance pressure** : It takes shape when employees and business units are under a too excessive pressure or when they are insulated from performance pressure, leading to a weakening of collaboration because the mindset of employees is not appropriate for synergy.
- **Mistrust** : Well intentioned initiatives and synergy interventions may be blocked if relations between business units are corrupted. This corruption appears if the businesses believe that their sister units are out to take advantage of them, or are always unwilling to go out of their way to help.

All the elements listed above are the costs, or the phenomenon that induce costs, will reduce the net value of an economic synergy. However, by applying the **MECE³ criterion**, we have noticed that some of these elements are redundant and aren't respecting this MECE approach, so a merge of some of them is done to respect this criterion. The categories of anti-synergies are presented below.

6.2 Coordination costs

The first broad category of anti-synergy is the coordination costs. They are the unavoidable costs coming from the necessary coordination to share resources across businesses. However, these costs have multiple origins. Zhou (2011) defined the notion coordination costs as not being a simple transfer of resources but an **ongoing process of joint decisions** and investments to exploit synergies. Coordination is composed of elements such as communication, information processing, and joint decision making.

If a manager wants to realise a synergy, the objective is to limit these costs as much as possible. In order to do so, Zhou (2011) stated that the firm must absolutely manage the **interdependence** between the different existing business lines of the firm. Interdependence refers to 2 or more activities bounded by nature and not just by the firm. So, coordination costs will be more important for firms doing related diversification because there are more interdependencies. Moreover, that type of costs is a function of the complexity of business lines : the more complex, the higher the coordination costs.

Zhou (2011) and Goold and Campbell (2000) allowed to gather some anti-synergies listed above in this category.

The first element included in coordination costs is **opportunity costs** because coordinating with another business might lead to the loss of opportunities.

A second type of costs would be the **administrative costs** which appear from the administrative inefficiencies during coordination.

Adaptation costs and **learning and absorptive capacity costs** can also be defined as coordination costs because coordination makes new contexts that need to be understood, and resources and routines need to be adapted to new businesses.

Compromise costs are also bounded to coordination from the moment they are due to the simultaneous attempt to maximize its joint performance across all uses.

Finally come **contagion costs** which arise from coordinating strategies across markets.

³"Mutually Exclusive and Collectively Exhaustive"

The second part of anti-synergies that aren't cost in a direct way are regrouped. They are more seen as "problems" in the companies that will induce costs and then will decrease the value of a synergy. Some of these elements will induce coordination costs. According to MECE criterion, these elements are be regrouped from the point that they can be seen as coordination costs as well.

Inhibiting corporate strategy

Inhibiting corporate strategy is the first problem leading to coordination costs. As cited by Goold and Campbell (2000), the most common way in which the corporate level strategy can work against synergy is through lack of clarity about corporate priorities. This inevitably leads managers to be cautious in an excessive way about with whom they collaborate and when. If managers in the businesses are unsure whether the corporate parent expects them to be coordinating their technical efforts or looking for cost savings in marketing, the uncertainty can leave them paralysed.

Infighting between the barons

A second element that might induce coordination costs is infighting between the barons. Indeed, battles between senior managers in some companies can have a big negative impact on cooperation. They are about differences in corporate strategy or management philosophy. Those battles can lead to lost opportunities and the cooperation is then stifled.

Culture of secrecy

Coordination costs can also arise from a culture of secrecy in a company. Indeed, any company keeping that culture of secrecy has a cooperation more complicated and then less developed. Whatever the cause, it leads to a reduction of synergy. To overcome this issue, an investment is necessary to eliminate the source of the problem.

Domineering corporate staff

A Domineering and insensitive attitude of the corporate staff implies a lack of cooperation and of listening from business managers. Indeed, they will automatically reject ideas proposed by the corporate staff to improve linkages. To make possible an improvement, investing money to restructure and change mentalities is unavoidable.

Mistrust

The last origin of coordination costs listed here is the phenomenon of mistrust. Goold and Campbell (2000) explained that this shouldn't be taken lightly because mistrust within an enterprise undermines drastically cooperation. Particular problems tend to appear if the parent is suspected of having a hidden agenda, since all initiatives will be scrutinised for ulterior motives, and interpreted in the worst possible way.

Goold and Campbell (2000) stated that there was a last thing that may induce coordination costs, it's about **business unit definition**. It's sometimes necessary to redefine links between business units and what is done in it to achieve a synergy. That redefinition will cause costs. For example, if a new European unit is set up out of previously separate national units, things are now managed within a single entity. Internalising the linkages in this way allow to have a single general manager for the combined business and coordination between separate businesses will always be much less effective than coordination under a single management. The general manager will make decisions on trade-offs between the sub-units. It is therefore primordial to identify the synergies that are never likely to be realised with the current business unit definitions.

6.3 Misaligned incentives

In many companies, bonus systems and promotion criteria depend on the results managers achieve in their own businesses, and give no credit for contributions to other businesses or the corporate whole. This personal incentive system makes the cooperation more difficult for business managers because they do not have enough motivation to involve themselves in other businesses. Furthermore, this problem is particularly applicable in a case of synergy because synergy may involves a sacrifice by one unit to help others. There is no compensation for the loser. Goold and Campbell (2000) explained that they have encountered situations that prevented managers from helping colleagues in other businesses, even though there was a clear group benefit available. An investment to structure a deal that rewards all the units involved would be a solution. However, it requires money and so it makes increases the coordination costs.

6.4 Inadequate performance pressure

According to Goold and Campbell (2000), having a good performance pressure in a company is far from being an easy task. Within companies, performance pressure on some employees can be excessive because they are hounded by close-to-impossible targets. It can lead to become inward-looking. If targets are set too high and business unit performance is paramount, managers often concentrate exclusively on things within their own immediate control. In that way, oppressive targets weaken the spirit of collaboration. On the extreme opposite, business units can be insulated from performance pressures. So the basic drive of enlightened self-interest, on which so many beneficial sharing initiatives depend, will be weakened. As Goold and Campbell (2000) explained, when synergy thrives, senior managers keep up the pressure for constant improvement but if the parent insulates businesses from such pressures, the businesses are less likely to seek out mutually rewarding synergies.

7 Biases

When a synergy becomes something reachable for a firm, corporate executives may consider the synergy as an emotional imperative. They assume that the synergy can exist and must be achieved. The accomplishment of the synergy is so important for managers that they forget to estimate the situation with objectivity. This distortion of mind is called a *bias*. As explained by Goold and Campbell (2000), it prevents the parent from taking a balanced view of the advantages and disadvantages of product range rationalisation. Goold and Campbell (1998) stated that there are 4 types of bias :

- Synergy bias
- Parenting bias
- Skills bias
- Upside bias

7.1 Synergy bias

The first bias is quite common. Synergy bias leads corporate executives to **overestimate the benefits at the expense of the cost**. Indeed, as explained in section 6, there are important costs that shouldn't be neglected. Executives feel the need to create synergies to give meaning to their business and work life. Goold and Campbell (1998) stated that executives feel they ought to be creating a synergy. They want to accomplish something by finding opportunities and binding the businesses into a big united family through synergies. Otherwise, corporate executives fear they would be left without a meaningful role in their organisation. All of that leads decision-makers to desperately seek synergies and take unwise decisions.

7.2 Parenting bias

Parenting bias is embodied through the way corporate managers think. They assume that unit managers are selfish and reticent to work with one another because they especially care about their own business and want to maintain their authority alive. It leads executives to conclude that the **intervention of the parent** is inevitable to the good achieving of the synergy. According to Goold and Campbell (2000), this assumption is wrong. The unit manager would refuse a synergy only if he has good reasons. Moreover, this bias leads corporate manager to interfere excessively, which may cause more harm than good. The parenting bias dooms many synergy programs.

7.3 Skills bias

The *skills bias* is based on the assumption that the necessary know-how to achieve synergy will be available within the organisation when it actually isn't. Corporate managers overestimate the skills possessed by the firm. There is a lack of personal relationships, operating knowledge, technological skills or other skills required to achieve the synergy and a successful collaboration. Actually, it is also related to the parenting bias because when a corporate manager thinks he has to intervene to make synergy happen, he will underestimate skills gap and will think they can be filled. That bias is actually also quite common and prevents lots of synergies from happening as desired. Another reason why this bias is happening so often is that senior managers have more difficulties to recognize their lack of capabilities needed for the synergy. They are rigid in the way of doing things since they have done it for a very long time. So, learning unfamiliar skills is harder than managers think.

7.4 Upside bias

The last bias is the *upside bias*. To fully understand it, Goold and Campbell (2000) introduced the concept of *knock-on effects*. These effects are the **unforeseen consequences** of an initiative of synergy. It can be beneficial or disastrous and can impact different factors like motivation, feasibility and success rate of the operation. The bias is represented by a trend of executives to focus too much on the potential benefits and positive knock-on effects that they forget about downsides. This bias is naturally bounded to the synergy bias given that the problem is of the same nature.

8 Decision tree

In this section, the goal is to build a decision tree that will include the theoretical concepts. We first identify the different steps that are needed to properly realise a profitable synergy.

Initial conditions

As a first step, the most important criterion concerns the presence of a failure in the target market (section 3). If there is one, synergy opportunities arise. Market failure is necessary because without it, market contracts will be more efficient and profitable.

The second condition is the existence of excess capacity in the firm. There must be tangible resources available in order to diversify to new businesses. If there isn't, the firm must first look for solutions to develop its resources, like an investment in new infrastructure.

Synergy and benefit opportunities

If the two conditions are met, the firm sees existing synergy opportunities on the market. A clear definition of the desired synergy is required. The firm must identify its resources and skills that are implied in the diversification choice.

The firm must then identify the similarity and the complementarity of its resources (section 4.4) with the target business requirements to determine precisely the type of synergy attempted (section 2). How related are the resources (section 5.2), how specific (section 4.3), can the resources be shared (section 4.5), can the firm maintain a competitive advantage in this business (section 4.2) ?

This step is crucial to determine the benefits created by the economies of scope realised (section 5.1).

Internal analysis

An internal analysis of the firm is needed to see if there is any element which may cause a decrease in value of the synergy.

The firm has to focus on the net benefits. So, the firm must identify the reduction of the net value created by the potential anti-synergies and estimate all the related costs (section 6).

The presence of bias must imperatively be verified (section 7). If the mind of corporate executives is biased, there is a lack of objectivity that may have big negative consequences on the net value of the synergy. An external point of view can be useful in this identification.

The firm must also be sure that its specific know-how in the business is used at its full potential.

And finally, to verify if the synergy is well defined for all stakeholders, every impacted business unit, is primordial to assure the same vision of the synergy for every member concerned and that extra costs aren't omitted.

Net benefits estimation

Once all the costs and benefits are clearly identified, a final question remains: **Are the costs related to the synergy lesser than the gross benefit that the synergy may create ?** If the answer is positive, the synergy is profitable for the firm and must then be realised. Organizational modifications are necessary to integrate this new activity in the initial structure of the firm.

Finally, a potential restructuration can be necessary if business units need to be redefined due to the synergy. Internal modifications can also occur if the firm identified problems that already existed in its processes. So, this verification process also allows new initiatives and improvements inside the firm.

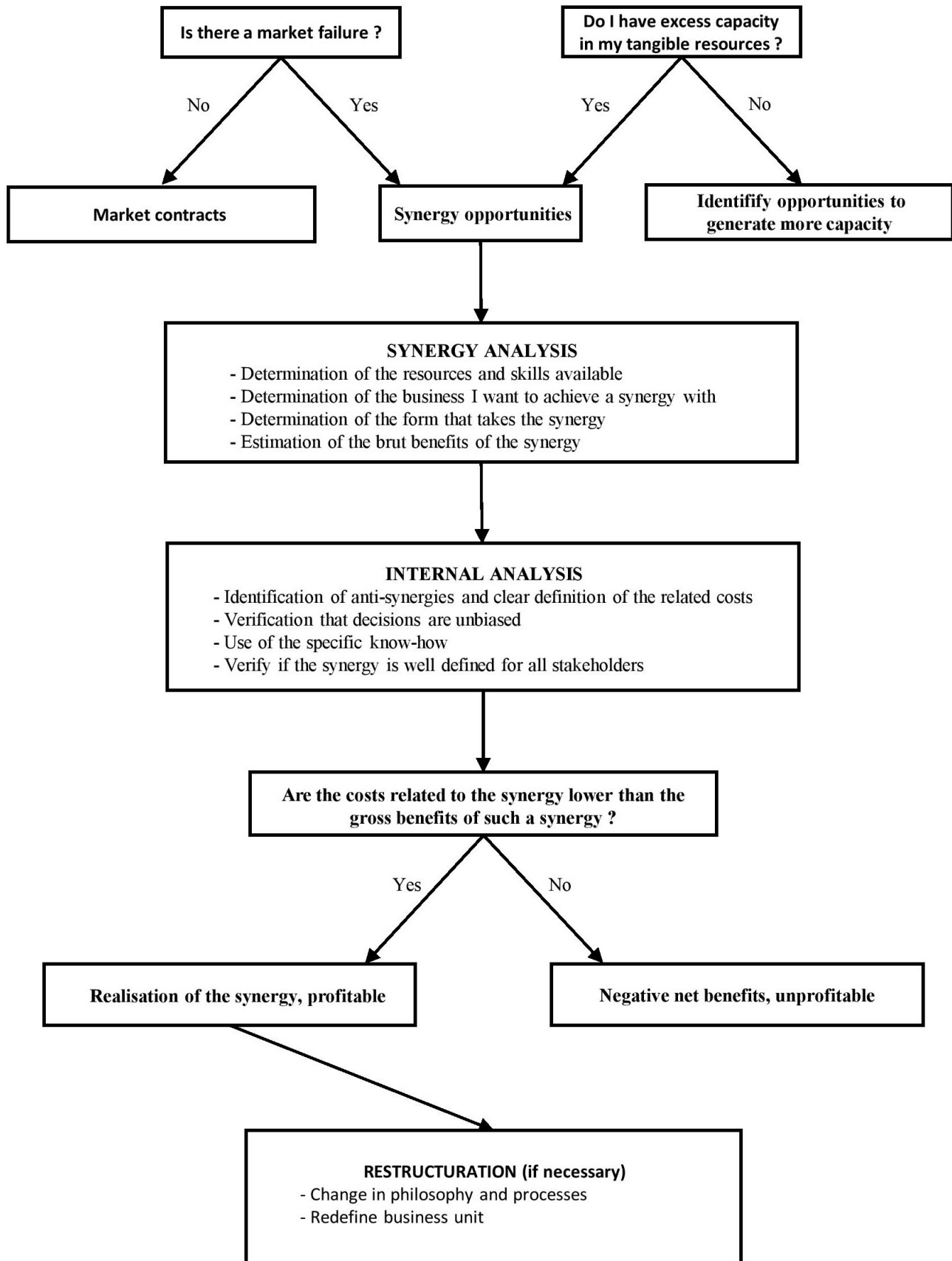


Figure 7: Decision tree

9 Discussion and conclusion

In this paper, the concept of economic synergy and its different components are explained. First by explaining the different ways in which synergy may occur, but also the different forms that a synergy and the related benefits can take.

Then, the notion of market failure is defined and the relationship with economic synergies for different types of firms is clarified. The following step for a manager is having a good knowledge of the resources and skills of the firm. Tangible and intangible ones, how the resources can be exploited, how similar or complementary with other businesses.

After that, the topic of diversification is discussed and more precisely how the diversification can impact the performance of a firm and the opinion of its stockholders.

Then, by presenting the multiple, various and complex elements that may reduce the net value of a synergy, the different of anti-synergies and the related costs found in the literature are listed. Some of these costs sources were redundant and could be classified into categories. By using a MECE approach, we now have a more complete and accurate view of the sources of these costs.

Finally, the last theoretical point is the presence of biases in the minds of corporate executives. It is not easy for a manager to realise if a decision is biased or not. That's why there is a need to have a critical and external look on everything the firm and the managers have and do not have.

These concepts are essentials to be able to identify synergy opportunities. It has been seen through the whole literature review : managers that do not have this critical look will lead their firms into the realisation of paper synergies, that most of time do not generate value.

Overall, this work is useful to understand that the benefits of economic synergies also come with costs. Stockholders are afraid of diversification because they are not sure that the benefits will be sufficient to **compensate** the related costs. Managers need to have a clear view of what they want to achieve and what they actually can achieve with the resources of their firms.

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Abstract :

Creating profitable economic synergies is the quest of a lot of managers nowadays. Diversifying to other businesses is a complex phenomenon that managers often miscalculate.

This paper is a literature review that will discuss the different forms of economic synergies that exist. It states the necessity of market failures. It provides theoretical concepts on the importance of resources of a firm and how it leads to the creation of value. Then the relation between the diversification and the performances of firms is analyzed. The aspect of anti-synergies and the related costs is developed as well as the biases that might influence choices of the managers.

The last part of the work has for objective the redaction of guidelines for managers. It is represented as a decision tree that integrates the different theoretical parts. This tree helps the decision makers ask themselves the important questions to make sure they realise profitable economic synergies for their firm.

Résumé :

Créer des synergies économiques profitables est aujourd'hui le but recherché par de nombreux managers. La diversification vers d'autres activités est un phénomène complexe que les managers estiment souvent mal.

Ce document est une revue de littérature qui abordera les différentes formes de synergies économiques existantes et la nécessité des défaillances de marché. Il apporte des notions théoriques sur l'importance des ressources d'une entreprise et comment cela mène à de la création de valeur. Ensuite la relation entre la diversification et les performances d'une entreprise sont analysées. L'aspect des anti-synergies et les coûts qui y sont liés sont développés, ainsi que les biais qui peuvent influencer les choix des managers.

La dernière partie du travail a pour but de rédiger des lignes directrices pour les managers. Elles sont représentées sous la forme d'un arbre décisionnel qui intègre les différentes parties théoriques. Cet arbre aide les managers à se poser les bonnes questions afin d'être sûr de réaliser de bonnes synergies économiques pour leur entreprise.