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Pricing policy and risk profile of a Chinese industrial distributor

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Summary

1. Introduction

价格是每个公司价值主张的表现，营销组合中唯一提供利润的元素，公司努力的象征。确定最终报的价格和可能的价格调整并非易事：需要涉及公司的每个方面和公司所处的环境的一个宽广的过程。过去几十年的趋势强调了与其把不同经济学科结合在最高管理层, 以便做最佳的决策，不如把知识局限于孤立的部门就像历史一样。这个哲理振奋整个作。事实上，我们的意向是从不同的角度来看待价格决策，结合着从诸色经济部门的学问以便价格决策是有意识的，并与公司的整体战略保持一致。

我们遵循的方法是从理论到实践的，从普遍到特殊的，并且还 关注在处理价格决策时经常被忽视的话题：风险。

风险的确是 商业本身的一个内在方面，并且避免风险不但是不可能的，而且甚至可能适得其反。 通常价格决策忽视风险因素：风险因素平常限于风险管理部门。 本着整合学科的精神，我们要强调风险与最终价格之间的联系。 正如我们将在§3.6中看到的那样，风险和价格之间的关系可以概括如下：

1. 如果风险得到正确评估，风险就不太可能转化为损失。
2. 如果风险得到正确评估，本风险处理的费用将反应在最后价格中；否则的话，意外风险的表现和处理会减少利润率，还导致无效的定价政策。
3. 既然风险产生的成本（和可能的利润）等于生产和运营的成本，全面儿深思熟虑的定价政策就必须包括风险评估方面。风险评估和处理的费用必须反映在最后价格中。

为了得出这些结论，我们的讨论从主要营销角度的普遍定价政策介绍来开始。 第§2章描述了激发价格决策的理论原则， 平衡着定价目标与定价约束。

定价目标是公司设定的目的，是公司规划活动的总结：除了利润以外，一个公司也 可以追求市场份额或销售收入。这些目的需要不同的定价政策。

反对来说，定价约束 是公司无法控制的因素：一个成功的公司不但理解这些约束，而且还适应这些限制。

前述约束谈到产品 / 公司状况，市场状况和竞争状况。

事实上，这些约束确定公司所处的业务，所以在价格决策过程不能忽视。

定价目标和定价约束的结合产生一些广泛且普遍的定价政策:远非详尽无遗，不同的公司可以把些初步战略适用作为更具体行动的指导方针。初步评估了，再进行实际和具体的战略行动：这是第§2章节的重点。 在本作的后期将对这些策略进行解释的时候，第§2章节中介绍的方针将提供这些具体战略背后的原因。

第§2章节还介绍价格调整的技术，强调着价格的动态性：像在本作中将会强调一样， 价格制定过程经常导致不全的决定。在某些情况下，有大可能会有价格调整。

第§3章节也具有比较理论的性质：本章的话题是风险管理。在将价格与风险联系起来之前，确实需要定义风险，还需要映入一些风险管理的要素。

“风险”这个概念是在§3.1定于的，然后讨论侧重与“企业风险管理”（ERM）和企业风险管理包括的四个步骤：风险管理目标的定义，风险评估，风险处理和风险监控。第一步（风险管理目标的定义）是以下更实际步骤的理论基础，对于有效的定价政策至关重要。在制定风险管理的目标的时候，公司设定一个约略的“风险欲”，以确定公司是否会转移或保留发现。这些决策的结果导致主要成本（如果公司要转移风险）或者主要风险（如果公司要保留风险），所以风险管理目标的定义对价格方面的影响相当明显。

第二步（风险评估）分为三个子步骤：第一个是风险识别。这个阶段包括筛选所有可能的风险源：风险识别过程逐渐小气它的范围，从普遍**环境未知数**（§3.4.1）开始：环境未知数的范围从政治风险到宏观经济风险，再到自然风险。

正如我们将注意的那样，环境风险和定价约束非常相依，以证明我们的论点：风险管理和定价决策经常重叠，不全必须把这两个方面整合到唯一个经过深思熟虑的规划活动。

在筛选和评估公司所处环境可能产生的风险之后，重点转移到**行业未知数**（§3.4.2）：这也与我们已经提到的定价约束重叠。最后的步是**公司未知数**：包括每个特定的公司可能成为风险源的所有领域。

确定风险及其来源之后，接下来的自然步骤是风险评估： 仅仅筛选不足以评估风险，所以必须估计风险的影响，这样才能确定风险的优先顺序。

估算风险没有明确的方法：实际上这是一项非常困难的人物，通常不同的方法是按照公司的需求和可用财源组合的。 然而，§3.5.1 提出两种估算风险的主要技术：**确定方法**和**随机方法**。

这两种主要的调查技术具有非常不同的范围和目的：一方面随机方法非常精细，因为它们的目的是捕获每个可能的变量， 但是除了非常昂贵且难以制定之外，其范围往往超出调查的

目的。另一方面，确定方法源于“假设”问题：它们更直观，它们需要少量数资料，并且它们的（正确）解释比随机方法更容易。归根结蒂，有时确定方法可以作为随机方法进一步研究的基础，但是当数据量变得庞大且变量们在模型中互相影响时，企业往往会回到确定方法作为随机方法研究结果的“现实检查”。

本作 侧重于确定性方法，因为它们与价格相关决策的联系更加强大：**定性分析**(§3.5.2)和**容量分析**（§3.5.3）都是确定方法组的一部分。 不同的方法在复杂性和可用性方面各不相同，而经常结合起来以产生更全面的图像。特别转移**情境分析**（§3.5.4）：根据分析的数据量，这种方法可以是确定方法和随机方法之间的混合。情景分析很有价值，因为它们允许公司考虑特定的时间和那个时间的结果，而不会迷失在大量数据中。

本讨论的目的是指出对价格决策有直接影响的风险管理关键要素的：因此，风险评估的第三阶段（风险评价）未在此工作中描述。比理论更加实用的风险处理这个阶段的介绍是推迟到具体案例的：在第§5.5章节，在讨论工业分销行业时，我们将指出行业特定的风险及其可能的治疗策略。

第§2章节和第§3章节概述了价格和风险的关键点，但为了缩小调查范围并把普遍知识转化为实际策略，第§4 章节研究分销行业：这个介绍将导致到中国工业批发商 Maxvogue International 具体案例的分析。

分销商是生产者和最终消费者之间的纽带;分发渠道的长度和分发渠道的链接数量因产品和客户而异。主要区别在于§4.2中描述的**消费品分销**和§4.3中分析的**工业产品分销**。不过，两个类别都在分发渠道上进行在§4.1.1中分析的重要职能：交易，后勤和促进职能对客户有极端的价值。产品不但需要具有价值，而且也需要易于获取，特别是在消费品销的领域：分销商履行的职能 在向最终消费者提供产品方面发挥着关键作用。

工业经销商的世界肯定与消费品经销商有许多共同点，但也存在很多差异：主要订单数量使购买过程更长，付款条件更灵活，出货更复杂。这些困难的任务是**代理商**和**工业批发商**的目的。它们之间的主要区别是：代理商不拥有他们推销的商品，他们只从每笔交易中获得佣金，而工业批发商购买和转售产品。在§4.3.3中光房地描述的其他差异使代理和分销业 适用于不同的产品，公司和企业。

在第§5章中，我们的研究范围再次缩小，重点关注工业分销商的行业，他们可能遇到的具体风险，以及这些风险如何影响定价决策。 SWOT分析（§5.1）始终是一个很好的起点：在本段中，我们将专注于工业经销商的力量，弱点，威胁和机遇。然而，“力量”和“弱点”

是描述事实的非常强烈的词语：有时线条相当模糊，**时间管理**或**货币管理**等一些不可避免的事实可能因公司按如何未来处理的挑战而成为一种力量或者弱点。一种财务观点提出时间的重要性；§5.2.2中理解着基本的二分法：时间变化价值，及价值随时间而变化。由于价格可以看作为价值的表达，只有财务观点才能强调价格的**持续性**，在决定价格时必须综合这个重要因素。 如果我们将**外汇风险**加到我们的等式中，价格的可变性就会达到峰值：外汇市场不断改变货币的价值，而且对价格方面的影响是巨大的。
首先，我们确定了三种主要的外汇风险类别：交易，汇兑和经济敞口。正如我们将在整个§5.3中所展示的那样，没有公司可以避免货币风险，但如果公司在国际上运营，交易敞口很可能成为头号优先事项：一个例子将使这个主题更清晰。该假设是来自不同国家和用不同货币的两家公司之间的贸易，付款时是从订单时的两个月内。会计方法将在“应收账款”栏下为交易开具发票，并在付款时将其进一步转换为现金分录。由于外汇市场的波动，这种静态方法可能不会认为现金进入的价值可能与交易的最初时刻有所不同：如果以前没有评估过，损失可能对公司有害。

在这一点上很明显，价格和风险是严格相关的，并且时间不断改变这种情况：为了评估这个问题，§5.5提供一些包含上述所有方面的策略。 两个主要原则应该推动与风险相关（因此与价格相关）的决策：

1. 公司不应承担不能容忍的风险
2. 公司只应承担提供奖励的风险

牢记着这些准则，在§5.6.1中定义货币风险对最终价格的影响以后，§5.6.2和§5.6.3提出旨在抵消货币风险的**操作技术**和**金融合同**。

在§5结束时，我们拥有评估中国工业经销商具体案例的所有工具：Maxvogue International的案例在§6中介绍。 在§6.1.1中提供的公司进行简要概述之后， 讨论继续进行公司的SWOT分析（§6.1.2）和公司的风险管理方法（§6.2）： 正如我们将要看到的，Maxvogue International的现实与我们在前几章中讨论的文献相差甚远;该公司没有编纂的企业风险管理，并且§6.3中有广泛描述的定价政策是很少有计划活动的结果。 相反，Maxvogue International 的价格是**广泛谈判**的产物，并是根据目前的即期汇率动态的。关于货币风险管理，公司只使用操作技术：价格进在合约签署日正式确定，并且即使付款条款

的时期从30到120天，签订合同以后公司也不使用金融合同来对冲其头寸。 该策略导致非常大的风险区域（在§7.1.1节中进行了分析）：在签订合同和有效支付日期之间外汇市场的任何不利变化都将自动导致公司的亏损。 但是，尽管缺乏一致的货币风险管理，第6章实际上证明了Maxvogue International 的整体战略是高效的：怎么可能？

为了评估公司的业绩，我们使用汇率变动数据（§7.2.1）和公司的见解建立一个简单而有效的模型，以衡量美 USD/CNY 汇率波动对Maxvogue International 收入的实际影响（§6.2.2）。调查的结果支持了该公司的选择：由于审查汇率的挥发性非常低，本公司实际上能够从过去8年的积极变化中受益。

为了进一步证实我们的论点，我们把 USD/CNY 汇率变动与其他重要货币的汇率变动进行对比，因为风险分析只从比较的角度才能达到它的真实潜力。 §7.2.3中的调查结果证实了Maxvogue International的策略，因此其他货币汇率的挥发性大于 USD/CNY 的汇率挥发性。不过，USD/CNY 的挥发性也正在增加：可能，公司的货币管理必须适应新的未来挑战，但我们的分析证明了它的历史有效性。

在概述了Maxvogue International在§7.3.1中的风险概况之后，我们的讨论最终是通过推测可能导致公司定价政策和风险状况的原因，以及其有效性。在§7.3.2中，我们寻找可能加强了公司企业文化的文化理由，本着“如何”问题应该遵循“为什么”调查的精神。 如果我们仔细观察，中国文化的一些重要特征证实了Maxvogue International的行为：从个人经验的价值（这是公司风险管理的基础），到谈判的社会重要性（取代计划活动）在价格制定期间;最后，我们对Maxvogue International的实际（和文化）评估得出了乐观的结论，即使对于公司未知的未来也是如此。

1.1. English introduction

Price is the expression of the value proposition of the firm, the only element of the marketing mix that provides profit, the symbol of the firm’s efforts. Deciding the quoted price and eventual price adjustments is no simple task: it requires a long process that touches every aspect of the firm and the environment that the firm is into. The trends of the last decades have underlined the importance of integrating different economic disciplines at the top management to make optimal decisions, rather than confining knowledge to isolated departments as it historically was: this philosophy inspires this whole work. In fact, we want

to approach price decisions from different perspectives, integrating knowledge from various areas so that price decisions are conscious and consistent with the firm's overall strategy. The approach that we are following is from theoretical to practical, from universal to particular, and it also focuses on a topic that is too often neglected when dealing with price decisions: risk.

Indeed, risk is an intrinsic aspect of business itself, and the avoidance of risk, besides being impossible, can even become counterproductive. Often, price decisions neglect risk factors, which are confined to risk management departments: in the spirit of integrating disciplines, we want to stress the connection between risks and the final price. As we will see in §3.6, the relationship between risk and price can be summarized as it follows:

1. If a risk is correctly assessed, it will less likely translate into a loss.
2. If a risk is correctly assessed, the consequent assessment of its treatment will be reflected in the final price; otherwise, the manifestation (and the treatment) of an unexpected risk will erode profit margins and result into an ineffective pricing policy.
3. A comprehensive and well thought pricing policy must include risk assessment aspects, thus the costs (and possible profits) derived from risks are equal to production and operational costs, and must be reflected in the final price.

In order to draw these conclusions, our discussion starts with an introduction on general pricing policies, from a mostly marketing perspective. Chapter §2 describes the theoretical principles that inspire price decisions, balancing **pricing objectives** with **pricing determinants**.

Pricing objectives are the goal that the firm sets, the summary of the firm's planning activities: besides profit, a firm could be pursuing market share or sales revenue, and such goals require different pricing policies.

Pricing determinants, on the other hand, are factors that the firm has little control over, and a successful firm understands and adapts to these constraints. These determinants refer to **product/company conditions**, **market conditions** and **competitive conditions**. These constraints actually define the business that the firm is into, and cannot be neglected during price decisions in order to make coherent price choices.

The combination of pricing objectives and pricing constraints originates some broad and very general combinations of pricing policies: far from being exhaustive, these preliminary

strategies may be applied to very different firms and businesses as guidelines for more concrete actions. Therefore, besides setting an important theoretical background, chapter §2 underlines the importance of a valid upstream planning activity: these theory elements are the base for consistent and practical price decisions. The focus is on the importance of preliminary assessment before moving on to real and concrete strategic moves: when later in this work such strategies will be explained, the guidelines introduced in Chapter §2 will provide the reasons behind such choices.
Chapter §2 also introduces **price adjustment** techniques, introducing the **dynamic** nature of price: as it will be stressed later throughout the work, the price formulation process often leads to a partial decision, which will be adjusted during time under certain circumstances.

The theoretic aspect is also very strong in chapter §3, which discusses risk management: before connecting price to risk, indeed, there is certainly the need to define risk and introduce risk management elements. "Risk" as a concept is defined in §3.1, then the discussion focuses on Enterprise Risk Management (ERM) and the four steps that ERM consists of: definition of risk management objectives, risk assessment, risk treatment and risk monitoring.
The first step, that is the definition of risk management objectives, is the theoretical foundation of the following more practical steps and essential to an effective pricing policy: when deciding ERM objectives, the firm sets an approximate **risk appetite** that will determine whether or not the firm will transfer or retain risks. These decisions lead to major costs (if transferring) or major risks (if retaining), and the implications on price aspects are rather clear.
The second step, risk assessment, is divided in three sub-steps: the first one is **risk identification**, which consists in a screening of all possible risk sources.
The risk identification process gradually narrows its scope, starting from **general environmental uncertainties** (§3.4.1), which range from political risks, to macroeconomic risks, to natural uncertainties.
As we will note, environmental risks and pricing determinants are quite similar, as to prove our thesis that risk management and price decisions often overlap, and must be integrated in a sole well-thought planning activity.
After screening and assessing the risks that may arise from the environment the firm operates in, the focus shifts to **industry uncertainties** (§3.4.2), which also overlap with the pricing determinants that we have already mentioned, and finally to **firm uncertainties**, including every firm-specific area that could turn into a source of risk.

After the identification of risks and their sources, the natural step that follows is **risk estimation**: a mere screening is not sufficient to assess risk, thus the risks' impact must be estimated and therefore **prioritized**. There is no unambiguous way to estimate risks: it is in fact a very difficult task and different methods are often combined according to the firm's needs and available resources. Nevertheless, §3.5.1 presents two main techniques to estimate risks: deterministic and stochastic methods.

These two main techniques of investigation have very different scopes and purposes: stochastic methods are very refined since their purpose is to capture every possible variable, but besides being very expensive and difficult to formulate, their scope often exceeds the investigation's purpose. On the other hand, deterministic methods originate from the "what if" question: they are much more intuitive, they require a minor amount of data, and their (correct) interpretation is way easier than stochastic methods. In the end, sometimes deterministic methods serve as a base for further investigations with stochastic methods, but when the amount of data becomes huge and variables influence each other in the formulated model, often times firms go back to deterministic methods as a "reality check" for the outcome of researches done with stochastic methods.

This work focuses on deterministic methods since their connection with price related decisions is stronger: **qualitative techniques** (§3.5.2) and **quantitative techniques** (§3.5.3) are under the umbrella of deterministic methods, different methods vary in complexity and availability, and are often combined to formulate a comprehensive picture. Particular attention is dedicated to the **scenario analysis** (§3.5.4), which, depending on the volume of data analyzed, can be a hybrid between the two main methods: scenario analysis are valuable because they allow the firm to consider specific events and their possible consequences (for example on price decisions), without getting lost in a multitude of data.

This discussion's aim is to point out the key elements of risk management that have a direct impact of price decisions: therefore, the third phase of risk assessment (risk evaluation) is not described in this work; the risk treatment phase, which becomes more practical than theoretical, is postponed to specific cases: in §5.5, when discussing the industry of industrial distributors, we will point out industry-specific risks and their possible treatment strategies. The risk monitoring phase does not comply with the purpose of this work so is not discussed.

Chapter §2 and chapter §3 give an overview of the key points of price and risk, but in order to narrow the scope of the investigation and to convert general knowledge into a practical strategy, chapter §4 investigates the industry of **distribution**: this serves as the beginning of

our journey that will lead to the analysis of the concrete case of Maxvogue International, a Chinese industrial distributor.

Distributors are the link between the producers and the ultimate consumers; the length of the distribution channel (and the number of links) varies according to the product and the client. The main difference is between **consumer product** distributors, described in §4.2, and **industrial product** distribution, analyzed in §4.3. In any case, both categories perform important functions along the channel, described in §4.1.1; transactional, logistical and facilitating functions are an extreme value to the client: not only must the product be valuable, it also has to be accessible, especially when dealing with consumer products: the functions performed by distributors play a critical role in making products available to the ultimate consumer.

The world of industrial distributors definitely shares many characteristics with consumer product distributors, but also presents many differences: major order quantity makes the buying process longer, payment terms more flexible, shipping more complicated. These difficult tasks are delegated to two main actors: **agents** and **industrial distributors**. The main difference between them is that agents don't own the goods that they promote and just earn a commission out of every transaction they arrange, while industrial distributors buy and resell the products: other differences, which are extensively described in §4.3.3, make agency and industrial distribution suitable for different products, firms and businesses.

In Chapter §5 the scope of our research narrows again, focusing on the industry of industrial distributors, the specific risks that they may encounter, and how these risks may impact pricing decisions.

The SWOT analysis (§5.1) is always a good starting point: in this paragraph we will focus specifically on strengths, weaknesses, threats and opportunities of industrial distributors. However, "strength" or "weakness" are very strong words to describe a fact: sometimes lines are rather blurred, and some inevitable facts such as **time management** or **currency management** can either be a strength or a weakness, depending on how the firm handles the challenges that come.

A financial perspective finally points out the importance of time, with a fundamental dichotomy explained in §5.2.2: time changes value, and value changes over time. Since price can be seen as an expression of value, only a financial perspective can stress the **ongoing** nature of price, and this important factor must be integrated when taking price decisions.

The variable nature of price peaks if we add **foreign exchange risk** to our equation: the forex market constantly alters the value of currency, and the implications on price aspects are huge. First of all, we identify three main categories of foreign currency exposure: **transactional**, **translation**, and **economic exposure**. As we will show throughout §5.3, no firm is exempted from currency exposure, but if a firm operates internationally, transactional exposure will most likely become the number one priority: an example will make this topic clearer.
The assumption is a transaction between two firms from different countries and different currencies, and the payment is two months within the order. An accounting approach would invoice the transaction under the "account receivable" column and further translate it into a cash entry at the moment of payment. This static approach may not consider that the value of the cash entry may have varied from the initial moment of the transaction due to fluctuations in the forex market: if not previously assessed, losses could be harmful to the firm.

It is clear at this point that price and risk are strictly correlated, and that time alters the situation constantly: in order to assess this problem, §5.5 provides some strategies that incorporate all the aspects discussed above. Two main principles should drive risk-related (and therefore price-related) decisions:

1. A firm should not bear risks that is not able to tolerate.
2. A firm should only bear risks that provide a reward.

Bearing these guidelines in mind, §5.6.2 and §5.6.3 present both **operational techniques** and **financial contracts** aimed at counteracting currency exposure, after defining, in §5.6.1, the impact that currency exposure has on the final price.
At the end of §5 we have all the instruments to assess the concrete case of a Chinese industrial distributor: the case of Maxvogue International is introduced in §6. After a brief overview of the firm provided in §6.1.1, the discussion continues with the firm's SWOT analysis (§6.1.2) and the firm's risk management approach (§6.2): as we will see, the reality of Maxvogue International is very far from the literature that we have discussed in the previous chapters; the firm has no codified ERM, and their pricing policy, extensively described in §6.3, is the result of very little planning activity. On the contrary, Maxvogue International's prices are the product of **extensive negotiations**, and are dynamic according to the current spot rate. About the currency exposure management, the firm only uses operational techniques: the price is only formalized on the signing date of the contract, and after that moment the firm does not

use financial contracts to hedge its position, even though the payment terms vary from 30 to 120 days. This strategy leads to a very considerable risk area (analyzed in §7.1.1): any unfavourable changes in the forex market during the time between the signing of the contract and the effective payment date would automatically result in losses for the firm. But despite the lack of a consistent currency exposure management, chapter §7 actually proves Maxvogue International's overall strategy to be efficient: how is it possible? In order to assess the firm's performance we build a simple yet effective model, using exchange rate variation data (§7.2.1) and insights from the firm, to measure the real impact of USD/CNY exchange rate volatility on Maxvogue International's revenues (§7.2.2). The findings supported the firm's choices: due to a quite low volatility of the examined exchange rate, the firm was actually able to benefit from positive variations during the last 8 years. To further confirm our thesis, we then confronted USD/CNY exchange rate variations with other important currencies' exchange rates, in the spirit that a risk analysis only reaches its true potential from a comparative perspective. The findings in §7.2.3 confirm Maxvogue International's strategy, thus the volatility of other currencies' exchange rate is way greater that the USD/CNY one, even though its volatility is increasing: possibly, the firm's currency management will have to adapt to new future challenges, but our analysis proved its historical validity.

After outlining Maxvogue International's risk profile in §7.3.1, our discussion ends by speculating on the reasons that may have led to the firm's pricing policy and risk profile, besides its effectiveness: in §7.3.2 we look for cultural grounds that may have reinforced the firm's corporate culture, in the spirit that a "how" question should be followed by a "why" investigation. If we look closely, some important traits of the Chinese culture confirm Maxvogue International's behaviour: from the value of personal experience (which is the ground of the firm's risk management as a tacit knowledge), to the social importance of negotiations (which replace planning activities during price formulation); in the end, our practical (and cultural) assessment of Maxvogue International leads to optimistic conclusions, even for the unknown future of the firm.

2. Pricing policies

Price is the arrival point of a journey that starts with the business itself. It's a summary of all the efforts of the firm, and yet, it's the starting point of profit.
Because of its very complex nature, the price formulation process has managerial, marketing and financial inputs, which are combined together to produce the optimal price.
This chapter has an introductive nature and serves as a theoretical overview of pricing strategies that are very different between them. The perspective is mostly from a marketing point of view, and the focus is on corporate objectives and environment constraints, rather than firm-specific factors: thus, this theoretical background should motivate concrete and daily operations. More practical aspects, that examine the industrial distributors' case in particular, are postponed to chapters §5 and §6, but before narrowing our investigation, a heterogeneous scenario of very different strategies and techniques serves as a valid theoretic base to motivate price decisions. In fact, the trends of the last decades pointed out the importance of integrating different disciplines into a complete and consistent strategy that should include every aspect of the firm, instead of confining knowledge to independent sectors that don't cooperate within the same firm. The importance of the pricing decisions is too high to be dictated just by marketing drivers or financial drivers: instead, it must be an organic concerto of different voices that combine into a consistent and effective strategy that touches every aspect of the firm, from the yearly plan to daily operations.

2.1. Price setting: a long journey

Price setting begins with the firm's objectives and goals, and it's a crucial part of its strategy: in fact, decisions concerning price should reflect and be aligned with the firm's strategy itself; if a firm's objective is to increase market share, price decisions will be different from a firm whose goal is survival.
While pursuing corporate objectives (cfr. §2.1.1), price decisions should also take into account some constraints (cfr. §2.1.2): beside legal requirements, many factors could limit the managerial range of action, such as competition and demand.

2.1.1. Pricing objectives

Pricing objectives involve specifying the role of price in an organization's strategic plans: these objectives may change depending on the financial position of the company as a whole, the success of its products, or the segments in which it is doing business (Kerin, Hartley:2017). So before even starting to define a pricing strategy, a firm must set a pricing objective (or more than one) and then elaborate a strategy that matches with it.

The most obvious goal to set is **profit**: many mathematical tools[1] help to estimate price level and unit to be sold in order to achieve profit while offsetting costs.

Given that a firm's profit is high enough for it to remain in business, an objective may be to increase **sales revenue**, such as increasing units sold or dollar sales revenue.

MNEs may want to increase **market share**, which is the ratio of the firm's sales revenues or unit sales to those of the industry, that is competitors plus the firm itself (Kerin, Hartley:2017).

Firms that sell multiple products may need to match customer's demand with price and production capacity: therefore, setting **unit volume** (quantity produced or sold) as an objective may help.

Lastly, a firm struggling to remain in business may neglect profit or market share and set mere **survival** as a goal.

Rao and Kartono[2] provide an extensive list of other possible pricing objectives, which includes projecting a product image, matching or undercutting competitor pricing, maintaining distributor support, maintaining the level of competition, avoiding price wars, erecting or maintaining entry barriers, increasing or maintaining liquidity, avoiding government intervention and avoiding customer complaints.

After setting an objective, the firm must verify the objective is actually possible: in fact, the firm could encounter many constraints (Rao and Kartono use the definition "pricing determinants"): the next paragraph illustrates some of the most commons.

2.1.2. Pricing determinants

Pricing determinants can be divided into three main categories: company/product conditions, market conditions, and competitive conditions.

Product/company conditions refer to the product class and the way that the firm handles it: every product has its own specific characteristics and the firm must find an efficient way to control eventual costs concerning them. First of all, the stage of the product life cycle

[1] See §2.2.3

[2] Rao, Vithala R., and Benjamin Kartono. "Pricing objectives and strategies: A cross-country survey." *Handbook of pricing research in marketing* (2009)

(hereafter PLC) is important in determining the price (especially for hi-tech products whose PLC is relatively short). Secondly, other product-specific costs must be taken into account, such as the cost of developing the product, the number of intermediaries in the supply chain, and so on. These constraints may result in higher costs (that translate in higher price) if not effectively managed.

Market conditions refer to the market environment and how the firm interacts with it: the majority of these constraints are over the firm's control, so the challenge is to manage effectively events over which one has limited power. First of all, depending on the product class, there may be legal constraints about the price levels (for example unfair competition regulations). Secondly, the market growth rate[3]. Lastly, all the consumer-related aspects: the most common example is the demand elasticity to price[4], but also the presence of substitute products, customer's sensitivity to price difference between brands (therefore customer's awareness of different brands), and all the consumer's costs (search costs, transaction costs, and switching costs,).

Competitive conditions are actually a sub-category of market conditions, and refer of course to the competitive environment and how the firm interacts with it. There is a first distinction between different types of competitive markets: in pure competition markets, price is set by the market itself and firms have almost no range of price action. In a pure monopoly situation, there is only one firm who sells a product so the firm has much room for price actions. In an oligopolistic market, few firms sell a certain product, therefore these firms have to manage price carefully in order to avoid price wars. In a monopolistic competition, every firm sells similar products but with unique features (here comes the term "monopolistic": since all products are different in some way, every firm has the "monopoly" of their own product): in these situations, price is a crucial part of the marketing mix and must be managed efficiently (together with all the other aspects of the marketing mix) in order to convey product differentiation.

Other competitive conditions could be the market share concentration of the top firms of the industry, the ease of detecting competitive price changes, and product differentiation between brands.

[3] Market growth rate is defined as the increase in sales or size within a given consumer group during a specified period of time.

[4] As theorized by Alfred Marshall, if the demand of a product is elastic to price, a 1% price reduction should translate in a 1% increase in sales and vice versa. If the demand is inelastic to price, variation in price should not translate in any changes in sales quantity. For further explanation, see A. Marshall, *Principles of Economics* (1890)

By revolutioning traditional ways of doing business, the Internet has had a massive impact on pricing determinants: from a competitive point of view, consumers have now access to products from all over the world (and at every price point), so the competitive field is as tough as ever. Moreover, the interenet also allows consumers to compare potentially every product on the market, which strengthens the competition even more. The internet has also led to a "distribution devolution": companies such as Amazon[5] or Zalando[6] are a mix of e-shop and e-distributor: they serve as a giant "virtual displayer" and retail products from thousands of brands (including their own); they often practice convenient discount policies and have efficient distribution systems that reach customers from all over the world. This type of innovations can either be a threat or an advantage to the firm, and must be taken into account when deciding a pricing strategy.

Now that we have briefly set the theoretical background of pricing decisions, we can now analyse some common pricing policies, bearing in mind that an efficient pricing policy is coherent with a firm's mission, pricing objective and complies with the market environment.

2.2. Pricing policies: a classic classification

In order to set an approximate price level, a firm can choose from multiple approaches or select a combination of them (Kerin, Hartley:2017); different approaches consider different aspects of business and aim to different objectives.
The guideline for setting the price originates with the type of business itself, so different techniques suit different industries and different products, while expressing the different nature of the single firms. Some industries (as we pointed out in §2.1.2), such luxury items industries, have much room for price decisions, while commodity items have way less, so together with considering the unique features that a firm (and a firm's product) has, the firm must confront with the market they are into and decide a pricing guideline that is consistent with it.
The starting point for the pricing policy can be found in four major approaches: the price level can be demand-oriented, cost-oriented, profit-oriented and competition-oriented.

[5] https://www.amazon.co.uk
[6] https://www.zalando.it

2.2.1. Demand–oriented pricing approaches

Demand-oriented approaches weigh factors underlying expected customer tastes and preferences more heavily than such factors as cost, profit, and competition when selecting a price level (Kerin, Hartley:2017).

When deciding the price of a new product, demand-oriented approaches could be skimming or penetration pricing: the first tactic is to set a very high price to appeal to not-price-sensitive customers, which see the high price as an indicator of quality. The second tactic is to purposely set a very low price to a new product in order to appeal to the mass market and immediately gain market share. Sometimes the two tactics are combined and a penetration pricing follows a skimming pricing.

Luxury items, because of their exclusive nature, are priced far above the average: this is called prestige pricing. The prestige pricing demand curve has been firstly theorized by Veblen[7] and states that when dealing with luxury items (perfumes, jewellery), given an "optimum" price level (higher than average), reduction in price translates in reduction of demand.

When a firm does not sell or produce one single product but a line of products instead, products should not be priced individually: on the contrary, the whole line should be priced coherently, in order to achieve different price levels for different target segments.

Complementary products also can be priced coherently: for example, even if the printers' price decreases to push sales, an increase in printers' ink's price can assure profit.

Bundle pricing means selling two or more products in a same package: this translates into lower marketing costs and increased consumer satisfaction.

The demand-oriented approaches that we have just introduced are suitable for different types of "consumers' products", from apparel to commodity items. The market condition for such strategies is usually the monopolistic competition, as price becomes one of the ingredients of the marketing mix that conveys, together with other factors, the value to the customer.

2.2.2. Cost-oriented approaches

Cost-oriented approaches take costs as a starting point to define price: methods vary in complexity, from a basic standard mark-up to the more sophisticated cost-plus pricing[8].

There is evidence of the fact that when production increases, costs decrease as a result of the learning effect, the so called experience curve effect[9]: therefore, a firm could set an initial low

[7] T. Veblen, *Theory of leisure class* (1924)

[8] Cost-plus pricing involves summing the total unit cost of providing a product or a service and adding a specific amount to the cost to arrive at a price (Kerin, Hartley:2017). This amount can be a fixed percentage of total costs, or a fixed fee regardless of total costs.

[9] Although there is evidence of the experience curve effect, there is no unanimous opinion on how much costs actually decrease: some say that by doubling production costs fall by 15% up to 30%, others argue that this

price and even encounter losses to build production volume and benefit from economies of scale and the experience curve effect.

Cost oriented approaches are suitable for mass production firms, or B2B products, where a decrease in the unit cost immediately translate in a sensible increase in profits.

2.2.3. Profit-oriented approaches

Profit oriented approaches set a target profit that is to be achieved by a specific dollar volume of profit or a percentage of sales or investment (Kerin, Hartley:2017).

The target profit pricing approach uses a mathematical formula to determine the price given an annual volume of sales; however, this technique has several shortcomings: firstly, the annual volume of sales is fixed so the assumption is that the demand of the product is certain, which is a really bold claim; secondly, an other risky assumption is that the demand is insensitive to price, whereas for most products the demand is indeed price elastic (see §2.2).

The target return-on-sales approach sets a target percentage of sales revenue to become profit and sets the price accordingly.

The target return-on-investment approach sets the target profit to be achieved through the investment: since it involves many assumptions, managers use spreadsheets to project operating statements based on a set of assumptions (Kerin, Hartley:2017).

These techniques can be counterproductive if used alone, but are useful to get a general idea of the relationship between price, sales volume and price. An other technique that combines these crucial factors is the break-even analysis, which calculates profitability at various levels of output.

2.2.4. Competition-oriented approaches

When choosing a competition-oriented approach, firms take the market trends as a starting point to decide the price, bearing in mind that significant departures from the average don't come without risk.

Customary pricing means setting the price that the market "dictates", because any price variation would cause the demand to fall[10]. Given a market's average price, a firm can set its price higher, below or at the same level. These types of decisions contribute to the positioning of the product.

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assumption is too optimistic. It certainly depends on the industry: some industries benefit more from the experience curve while others don't encounter such benefits.

[10] By price variation not only do we mean price increase, but also price decrease, thus even if price decrease would normally cause demand to rise, in some cases is seen a signal of low quality.

2.2.5. Dynamic pricing policies

A dynamic pricing policy involves setting different prices for products and services in real time in response to supply and demand conditions (Kerin, Hartley:2017). The access to more and more sophisticated technologies has made yield management possible and popular: firms can adjust the price continually based on a multitude of factors, from more general supply conditions to very specific client's amount of clicks on the web page. Airlines, hotels, but also internet e-shops use this practice more and more often, not without raising complaints and ethical issues.

Moreover, adjustments to the quoted price such as discounts, allowances and geographical adjustments are usual among firms and have multiple purposes: these practices will de discussed in chapter 3.

2.3. Pricing approaches: an overall picture

All the techniques explained in the previous paragraphs are not meant to be used alone: price setting is a long process that involves considering a multitude of strategies and combining them to arrive at the final price. Indeed, pricing policy approaches are the means to achieve pricing objectives while dealing with pricing constraints. There is no hierarchy between these factors: they are interrelated and they all contribute to price decisions to various extents, so managers have to go back and forth between these areas, establish market-specific relationship and therefore set the price. The key is to consider the final price when making decisions at every stage of production and marketing in order to gain and maintain competitive advantage. Moreover, these principles are to be seen as theoretical guidelines for pricing decisions, but must be integrated with feasibility studies and assessments.

Together with these guidelines, firms often adopt **price adjustment** strategies that may favour both the seller and the buyer. Price adjustments are as important as price formulation itself, from both a long and short period perspective.

2.4. Price adjustments

Setting the quoted price is just the beginning of our journey: indeed, prices may change throughout a certain period of time and under certain circumstances. Beside the dynamic

pricing policy (see §3.5), special adjustments can be made to the quoted price for multiple reasons and in specific periods.

The following paragraphs introduces some of these practices, the next chapter underlines the relationship between these types of decisions and business risk.

2.4.1. Discounts

Discounts are reductions from the list price that a seller gives a buyer as a reward for some activity of the buyer that is favourable to the seller (Kerin, Hartley:2017). A firm can decide to offer a discount over a large **quantity** of product sold: quantity discounts are very common across every industry.

Some products have seasonal properties, such as clothing, fresh food or season-specific goods (eg. skis in winter): during low seasons, sales volume is not as high as the high season one, so in order to smooth sales a firm can offer **seasonal** discounts to encourage sales during low seasons.

To reward wholesalers and retailers for marketing functions they will perform in the future, a manufactures may offer a **trade** (or functional) discount. These reductions off the quoted price are offered to resellers in the marketing channel on the basis of where they are in the channel and the marketing activity they are expected to perform in the future (Kerin, Hartley:2017).

To encourage positive payment behaviour, manufacturers and wholesalers can offer **cash** and **early payment** discounts.

2.4.2. Allowances

Allowances are similar to discounts, but instead of being an official reduction from the quoted list for performing some activity, they are a little bit more complex: the buyer gets as much discount as the monetary amount of activity it performs for the seller.

Trade-in allowances is a price reduction given when a used product is accepted as part of the payment (Kerin, Hartley:2017).

Promotional allowances are given to resellers (in form of cash discount or free goods) when the reseller engages in marketing promotion (eg. advertising) of the product sold.

2.4.3. Geographical adjustments

Generally, a firm provides more than one price list, depending on whether the buyer (or the seller) takes in charge transportation and insurance costs.

The ICC[11] provides a univocal list of terms related to common types of contracts that define tasks, costs and risks associated with transportation and delivery of goods: for example, if the firm quotes an FOB (Free On Board) price, the buyer already knows that the price includes transportation to the port and loading on the ship; after that, costs and liabilities are transferred to the buyer[12].

Now that we have briefly overviewed many different pricing objectives, determinants and approaches, our investigation focuses on an other crucial aspect of every business activity: risk. Since price summarizes all the firm's efforts, it can also be seen as a reward for the amount of risk that the firm undertakes to run its business. It is therefore clear that price and risk are closely connected, and the correct management of risk is crucial for value creation for the firm.

[11] International Chamber of Commerce.
[12] The topic will be discussed in greater detail in §5.4

3. Managing risks

Every business activity comes with risk: whenever an investment is involved, the outcome of the investment is uncertain, and many internal and external factors (risks) may interfere with a possible positive outcome.

Some risks can not be avoided, to the point that the avoidance of some risks even becomes counterproductive, but the sure thing is that risk must be carefully managed. The idea behind this discussion is that a risk can easily become a cost, and costs are directly connected to price: if a cost is estimated, then the final price will reflect it, but if such cost is not included in the planning activities, it will erode profit margins.

It is therefore useful to introduce some elements of risk management (Enterprise Risk Management, hereafter ERM): the correct assessment of risks and an effective choice of the risk treatment method inevitably leads to a more comprehensive and consistent pricing policy.

After introducing a general definition of risk, we will discuss the four steps of the risk management process.

3.1. Definition of Risk

In the economics field, there is no univocal definition of "risk": managers generally associate risk with negative outcomes (March, Shapira:1987).

The concept of risk as **performance variance** is widely used in finance, economics, and strategic management. With either the variance or negative variation understandings, "risk" refers to variation in corporate outcomes that cannot be forecasted ex ante (Miller:1991). In this definition, the term "variation" refers to either negative or positive outcomes: this is a key concept when managing risk, because in some cases (cfr. §3.1.1) risk is actually an opportunity.

Some researchers point out the difference between "risk" and "uncertainty": the first referring to unpredictability in corporate outcome variables, linked to the statistics' concept of

variance [13] of accounting-based performance variables; the second referring to the unpredictability of environmental or organizational variables that impact corporate performance: that is, unforeseeable events that reduce the predictability of the performance (Miller:1991)[14].

The term "exposure" is defined as "the sensitivity of a firm or project's cash flows to changes in any of a number of interrelated uncertain variables" (Miller:1991); the difference between risk and exposure is that while risk refers to the **probability** of something to happen, exposure measures the **potential losses** that a risk can cause. Risk can lead to a positive outcome; exposure quantifies negative outcomes for the firm if a negative fact happens.

3.1.1. Pure and speculative risks

As we have pointed out in the previous paragraph, some risks can cause a positive variation from expected outcome. This is the difference between **pure** and **speculative** risks: the firsts only involve the possibility of loss (natural risks are a great example of pure risks); the seconds involve the possibility of loss **and** gain (doing business using foreign currency is certainly a risk, but if effectively managed, a favourable exchange rate could result in higher profits).

This distinction is crucial when treating possible risks: while pure risks are to be avoided and mitigated using insurance products, speculative risks, if successfully retained and treated, can become a source of value[15].

3.2. ERM: an introduction

Although the concept of risk (and its treatment) finds its roots in medieval age, Robert Mehr and Bob Hedges[16] are claimed to be the "fathers" of what today we call "risk management": during the 1960s they were the firsts to develop principles and establish guidelines of the risk management process. The newborn discipline primarily dealt with "pure risks" (cfr. §3.1.1) for many reasons: they were the less likely to be foreseen but could cause enough damage to ruin a firm (for example: fire); therefore, managers were more than willing to buy an insurance for natural risks (cfr. §3.4.1). In the 1970s, the attention for financial risks (or

[13] Variance is a statistic tool that measures the average of squared differences from the mean, which refers to the arithmetic mean of all the data. Simply said, variance measures how far a data set is spread out given the mean of all the data.

[14] Bearing in mind the slight linguistic difference between risk and uncertainty, in this paper both terms will be used indistinctly.

[15] This topic will be discussed in greater detail in §5.5.

[16] Mehr, R. I., & Hedges, B. A. (1963). *Risk management in the business enterprise*. RD Irwin.

speculative risks: cfr. §3.1.1) raised to such an extent that tools for handling them were quickly developed: at the beginning, these tools were similar to insurances for treating pure risks and were not as sophisticated as today's tools. At this stage of the development of this discipline, pure and speculative risks were treated separately and not incorporated into a wider strategy, causing losses to firms; later on, academics started to insist on the importance of integrating risk management at every level of the organization, arguing that treating every risk singularly is an unsuccessful strategy: a wider perspective about every risk that a firm can encounter provides the means to develop a comprehensive strategy that can minimizes possible losses and maximises value. The key is to handle risk management as a structured process, and not as the response to single and isolated events.

Today, risk management activities are part of corporate governance, thus are included in the identification of the firm's objectives and the formation of the firm's strategic plan. Many national and international organizations have developed frameworks in order to help firms to manage risk successfully: the most worthy of interest are the **ISO 31000** (redacted by the International Organization for Standardization) and the **COSO framework** (redacted by the Committee of Sponsoring Organizations of the Treeadway Commission). Although these two frameworks (among with others) differ in some points, they all insist on the integrated nature of the process of risk management, which begins with the objectives of the firm itself and spreads through the levels of the organization. The steps of this process can be summarized as follows:

- ⇒ **Step 1: Definition of Risk Management Objectives**, which must be aligned with the firm's objectives.
- ⇒ **Step 2: Risk assessment**; this phase is further divided into three sub-phases: risk identification, risk estimation and risk evaluation.
- ⇒ **Step 3: Risk treatment**: once possible risk have been properly analyzed, this phase finally deals with the treatment strategies (that must comply with the objectives defined in Step 1)
- ⇒ **Step 4: Risk monitoring**: this phase is crucial to evaluate if the responses elaborated in the previous steps are successful.

Since this work focuses on price-related risk factors, most of the attention will be dedicated to the definition of risk management objectives (§3.3) and risk assessment (in particular risk identification, analyzed in §3.4, and risk estimation, analyzed in §3.5[17]). The risk treatment

[17] For an in depth discussion about the risk evaluation process, see Damodaran, A., & Roggi, O. (2016). Elementi di finanza aziendale e risk management. *Maggioli Apogeo, Milano*

discussion will focus on how to treat industrial distributors' specific risks, in §5.5. Risk monitoring aspects are not discussed in this work.

Still, understanding the risk management process (and integrating it with the other activities of the firm) leads to a more efficient pricing policy, since price, as we have pointed out at the beginning of this chapter, can also be seen as the monetary translation of the risks that a firm bears. Moreover, an effective risk management policy may cause costs to reduce and even generate profit (from speculative risks).

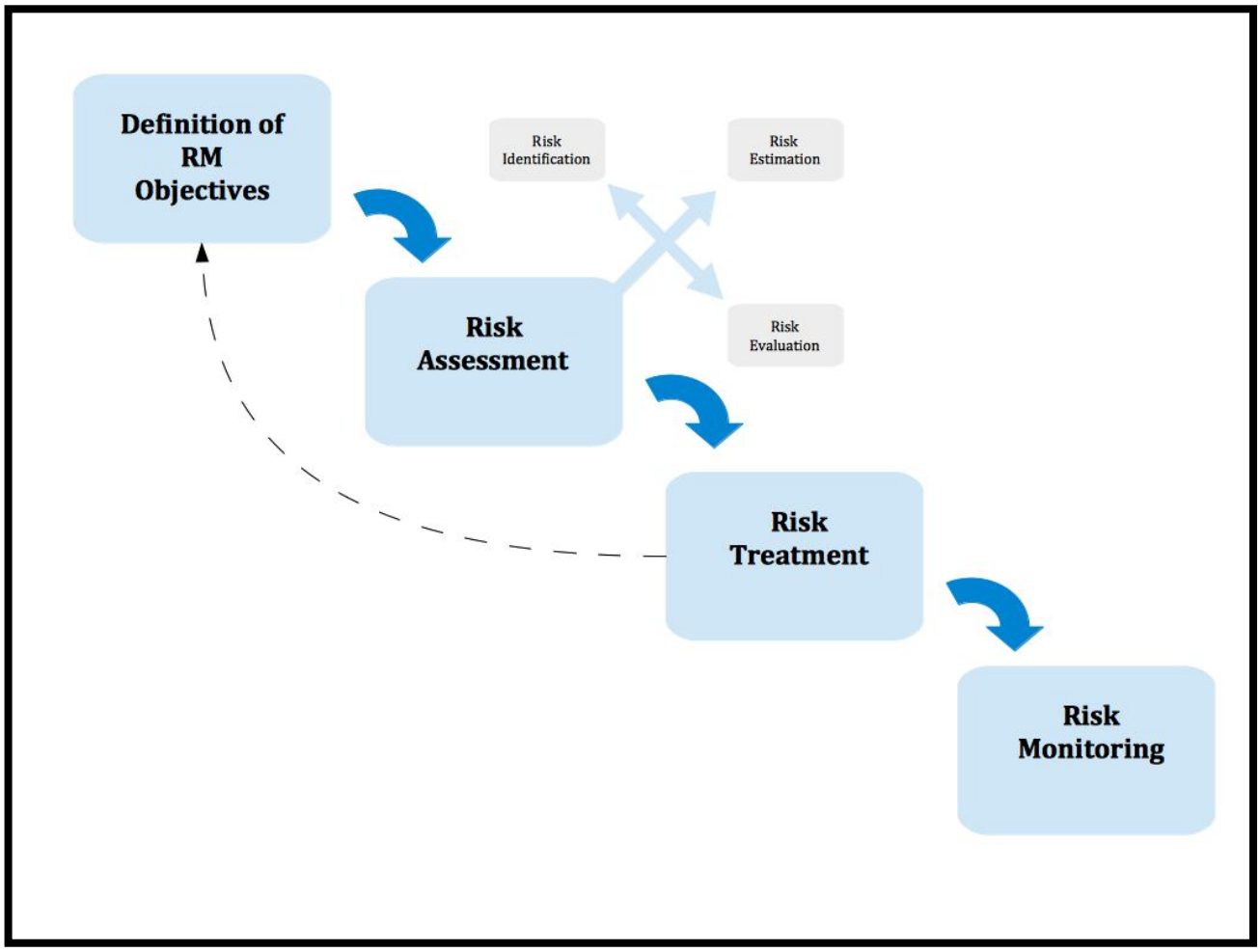

Exhibit 1: Risk Management Process

3.3. Definition of Risk Management Objectives

The first step of the risk management process is rather theoretical, but crucial for a successful strategy. Neglecting this phase can lead to inconsistencies and result in an overall weak plan of action.

At the top management level, the firm sets an approximate amount of **risk appetite**, which defines the general attitude of the firm when facing risks. The risk appetite level normally reflects the top management's level of risk aversion.

Even though this step is theoretical, the decisions made in this step translate into concrete actions. Setting a conservative risk management objective will lead towards risk-transferring decisions rather than risk retaining; on the other hand, if the firm's risk appetite is high, the firm may decide to retain risks, sometimes even in order to gain profit from them[18].

Risk management objectives and risk treatment strategies together define the firm's unique **risk profile**, which will be discussed in detail in paragraph §7.3.1 when analyzing a concrete business case. These two phases complete each other since one is the theory that stands behind the other: the absence of a solid risk management strategy will lead to chaos in risk treatment decisions.

3.4. Risk identification

Before being estimated and evaluated, risks must logically be identified.

The environment is indeed uncertain, and if uncertainty causes risk to arise, it is fundamental to focus on the sources, properly scanning the environment and trying to avoid (or control) possible risks. Basing on Miller's classification, the next paragraphs will provide an overview on risk sources.

3.4.1. General environmental uncertainties

Environmental uncertainties are all the factors that constitute the environment itself, and can have an impact across different industries. The intensity of the environmental uncertainties varies based on the scope of the environment considered: if a firm operates internationally, the environmental scope is obviously wider than a firm that operates just nationally.

Environmental risks include political, government policies, macroeconomic, social, and natural uncertainties.

Political risks refer to huge changes (such as wars or revolutions) that endanger political stability: when the political situation of a country is instable, major problems that can impact business negatively are likely to arise.

Policy risks are slightly different from political ones, because they don't refer to a nation's political stability, but instead, they refer to government's sudden actions that change the

[18] These different strategies will be discussed in §5.5 and §5.6, with a closer eye on industrial distributors' optimal decisions.

national economic environment, for example unexpected fiscal monetary reforms, trade restrictions, price controls and so forth. Although there is a clear relationship between political and policy risks, political stability does not preclude policy instability, or vice versa.
Macroeconomic uncertainty is a broad concept encompassing fluctuations in the level of economic activity and prices (Oxelheim, Wihlborg:1987): examples may be inflation, changes in relative prices, foreign exchange rates fluctuations, interest rate fluctuations, variations in the Purchase Parity Power, and so forth.
Social uncertainty occurs when the population is unhappy with government policies and this displeasure may result in riots, demonstrations, and social unrest. Social uncertainty also includes changes in social concerns: for example, governments could take weak actions against pollution and global warming, but consumers may consciously choose firms that have low environmental impact.
Natural risks are unpredictable natural disasters that may cause massive damages to firms, such as earthquakes, floods, hurricanes, and so forth.

All these types of risk can have really tragic outcomes, but with the exception of macroeconomic risks, these events are quite rare; furthermore, with a precise ex ante analysis, many of these risks can be foreseen and avoided.

3.4.2. Industry uncertainties

Unlike general environmental uncertainties, industry uncertainties are industry-specific: the mobile industry's risks may be different from the apparel industry's ones.
Industry risks include input market risks, product-market risks and competitive risks. Product/market risks and competitive risks refer to the "pricing determinants" that we have discussed in §2.1.2; input market risks refer to the industry-level uncertainties surrounding the acquisition of adequate quantities and qualities of inputs into the production process. Especially in situations where only a few input suppliers are available, changes along the supply chain may cause severe problems (such as quality uncertainty or shifts in market supply).

3.4.3. Firm uncertainties

Further narrowing the scope of analysis, firm uncertainties deal with firm-specific factors, that is every aspect of the firm itself, from the firm's management strategy up to daily operations.

Operating uncertainties include all those factors that can interfere with the firm's operational capability: labour risks, firm-specific input supply risks, and production risks.

Labour risks refer to employee's safety and satisfaction: the lack of these two important factors can lead to strikes or even employee injuries, which will of course affect productivity negatively.

Input supply risks include raw material shortages, quality changes in input, spare parts restrictions and so forth; the difference between the input risks at industry level discussed in the previous paragraph (§3.1.2) and the input risks at a firm-specific level is that the firsts refer to the availability and quality of raw materials (and other inputs) in general; the second refer to risks and opportunities that a single firm can encounter while managing its own supply chain.

Production risks include every factor that can slow down production, such as machine's failure, accidents, and so forth.

Liability uncertainties refer to possible negative events (such as legal actions) due to facts for which the firm is directly responsible: for example, emissions of pollutants, or defective products that can cause harm to consumers.

If it is true that every business activity comes with risk, this is especially true for every R&D activity, because of the difficulty to foresee the effective result of every new project the firm engages in; this type of risks goes under the name of R&D uncertainties.

Credit uncertainties involve any problem with collectibles: late payments or even defaults by client can seriously endanger a firm's financial position.

Lastly, behavioural uncertainties refer to possible self-interested behaviours by managers or even employees: if the human resources are not effectively managed and controlled, productivity and efficiency will surely suffer.

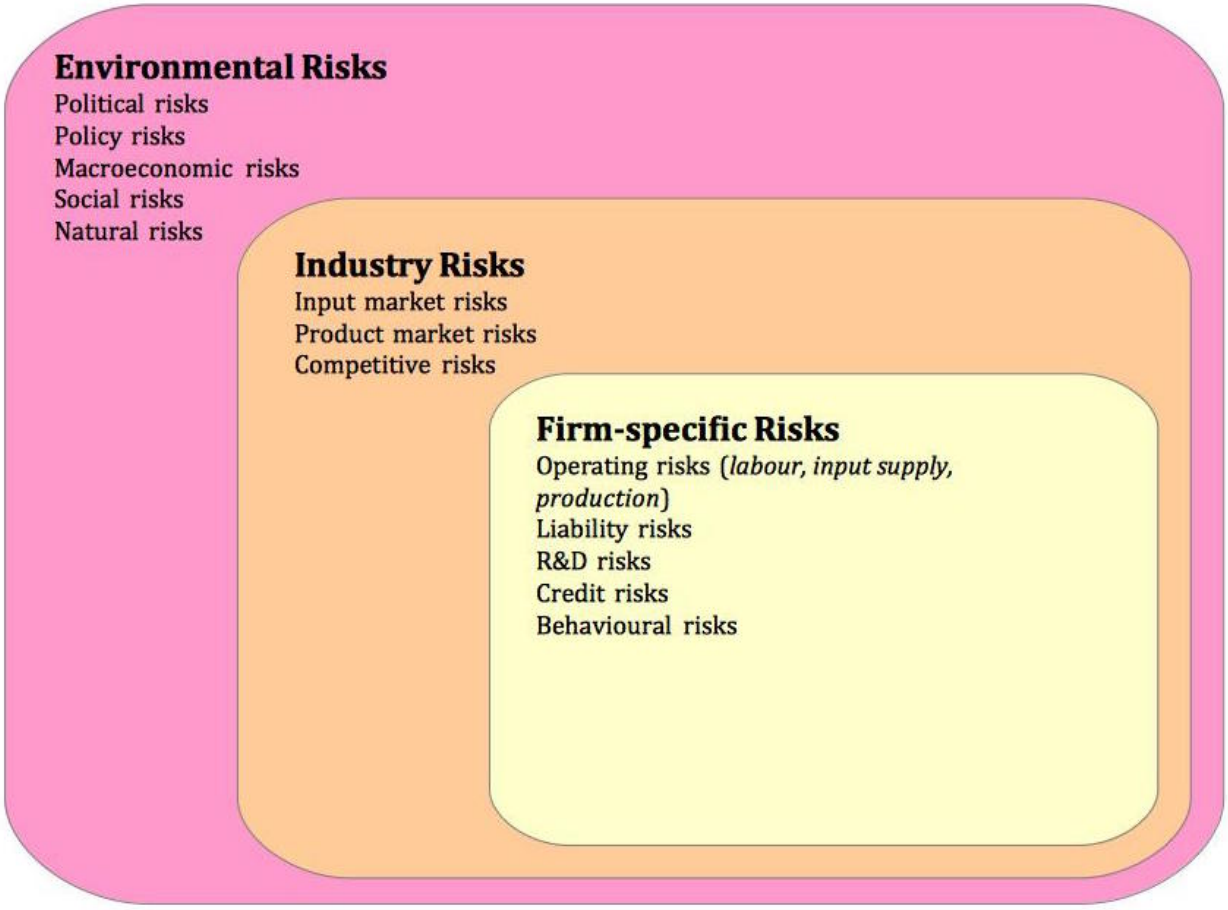

Exhibit 2: Classification of risk sources

This quick overview of possible risk sources is useful to further narrow our investigation and start "quantifying" possible risks, formulate possible solutions, and setting a price that rewards the amount of risk that the firm undertakes.

3.5. Risk estimation

In the previous paragraph we classified risks using the criterion of the possible risk source, from environmental up to firm-specific uncertainties, gradually narrowing our investigation scope from general to particular.

At the end of this chapter there will be also a classification, but the criteria will be different: firstly we will discuss the most common methods used to estimate and evaluate risks; an efficient estimation should allow a coherent evaluation and therefore a **prioritization** of possible risks.

The need for a prioritization of risks is rather clear: not all risks have the same impact, and if some risks may cause a small loss, others may cause the firm to close. Prioritizing risks means concentrating most of the firm's efforts to those risks that could severely endanger the firm,

while minor risks may be neglected. We use the word "effort" since, as we will see in §5.5, treating risks is expensive in terms of time and resources, so of course the prioritization of risks to be treated is the most logical step.

Estimating a risk is no simple task, since this type of events involve multidimensional measurement, and there is no univocal method to do it. Moreover, risks interact with each other in a complex environment, so the measurement of a single risk alone is rather useless.
However, there is a full spectrum of risk assessment techniques, which are usually combined in steps first to define a general picture, then to gradually narrow the investigation.
There are two main categories of risk estimation techniques: **deterministic** and **stochastic**. Even though the stochastic methods will not be discussed in this paper, a general description of both fields is provided in §3.5.1. Then, some deterministic techniques are discussed more in particular in § 2.5.4, 2.5.5.

3.5.1. Deterministic vs. Stochastic methods

Deterministic and stochastic methods are different in complexity and comprehensiveness. The explanation of Simmons *et al.*[19] is a good starting point, and states: "deterministic methods consider the consequences of defined events or combinations of events but do not necessarily consider the probability of these events or guarantee that all possible events are captured within the deterministic event set. Often this is the starting point for risk analysis. At the other extreme, stochastic or probabilistic analysis attempts to capture all possible outcomes with their probabilities; clearly coming with a much higher data and analytical requirement and, if correct, forming the basis for a sophisticated risk assessment process."
Deterministic methods vary from simple and intuitive illustrative scales (see §3.5.2) to more advanced quantitative techniques that involve complex computation (see §3.5.3); these methods take into consideration the impact of defined risk events, and seek to understand the possible consequences and managerial actions that could offset them. The philosophy behind these methods is "if this happens, these are the consequences": this makes deterministic methods both "precise" (since they consider only limited set of events) and "limited", because they usually don't consider the whole picture but only focus on few aspects.
On the other hand, probabilistic method combine huge amounts of data to generate a picture as comprehensive as possible. If successfully formulated, they provide invaluable information, but the assumptions of the model must be carefully formulated to avoid bias: although it

[19] Poljanšek, K., Marín Ferrer, M., De Groeve, T., Clark, I. (Eds.) (2017): *Science for disaster risk management 2017: knowing better and losing less*; Chapter 2, Simmons D. C. et al; *Understanding disaster risk: risk assessment methodologies and examples*

might seem a paradox, there is certain subjectivity in the assumption that drive an "objective" model.

The difference is quite clear: stochastic methods are obviously more refined and advanced and could be seen as an improvement of deterministic methods, since they rely on modern statistic tools, but require massive efforts and huge volumes of data; furthermore, different industries may require different methods. Although stochastic models provide very precise information, deterministic techniques are the opposite of useless, they can be used alone or be the basis for stochastic models themselves, as well as being a "reality check" for probabilistic methods. In the end, the choice of the method(s) depends on the purpose of the investigation and the availability of the data, from simple scenarios to probabilistic analysis, but all can lead to better decision-making.

Both deterministic and stochastic families are labels[20] that categorize many techniques and tools: for the purposes of this paper, we will only focus on a few deterministic techniques. For a full classification, see Ostrom and Cheryl (2012)[21].

3.5.2. Qualitative techniques

Qualitative assessment generally consists of estimating each risk according to descriptive scales that express a certain variable; the descriptive nature of the scales imply no numerical scoring: rather, the scales usually provide a five-point ranking from "very high" to "very low".

The most common variables are **likelihood** of an event to occur and the **impact** that the event could have on the organization. Table 1 and Table 2 show an example of the descriptive expression of these two variables provided by COSO[22], but it goes without saying that every organization should develop one of their own to reflect firm-specific conditions.

[20] The categorization is still a debate; in this paper we will use Marhavilas and Koulouriotis categorization. See Marhavilas, P. K., & Koulouriotis, D. E. (2012). The Deterministic and Stochastic Risk Assessment Techniques in the Work Sites: A FTA-TRF Case Study. In *Risk Management for the Future-Theory and Cases*.

[21] Ostrom, L. T., & Wilhelmsen, C. A. (2012). Risk assessment: tools, techniques, and their applications. John Wiley & Sons.

[22] Curtis, P., & Carey, M. (2012). Risk assessment in practice. Committee of Sponsoring Organizations of the Treadway Commission.

Illustrative Likelihood Scale				
Rating	**Annual Frequency**		**Probability**	
	Descriptor	*Definition*	*Descriptor*	*Definition*
5	Frequent	Up to once in 2 years or more	Almost certain	90% or greater chance of occurrence over life of asset or project
4	Likely	Once in 2 years up to once in 25 years	Likely	65% up to 90% or greater chance of occurrence over life of asset or project
3	Possible	Once in 25 years up to once in 50 years	Possible	35% up to 65% or greater chance of occurrence over life of asset or project
2	Unlikely	Once in 50 years up to once in 100 years	Unlikely	10% up to 35% or greater chance of occurrence over life of asset or project
1	Rare	Once in 100 years or less	Rare	<10% chance of occurrence over life of asset or project

Table 1: Illustrative Likelihood Scale

Illustrative Impact Scale		
Rating	**Descriptor**	**Definition**
5	Extreme	• Financial loss of $X million or more[3] • International long-term negative media coverage; game-changing loss of market share • Significant prosecution and fines, litigation including class actions, incarceration of leadership • Significant injuries or fatalities to employees or third parties, such as customers or vendors • Multiple senior leaders leave
4	Major	• Financial loss of $X million up to $X million • National long-term negative media coverage; significant loss of market share • Report to regulator requiring major project for corrective action • Limited in-patient care required for employees or third parties, such as customers or vendors • Some senior managers leave, high turnover of experienced staff, not perceived as employer of choice
3	Moderate	• Financial loss of $X million up to $X million • National short-term negative media coverage • Report of breach to regulator with immediate correction to be implemented • Out-patient medical treatment required for employees or third parties, such as customers or vendors • Widespread staff morale problems and high turnover
2	Minor	• Financial loss of $X million up to $X million • Local reputational damage • Reportable incident to regulator, no follow up • No or minor injuries to employees or third parties, such as customers or vendors • General staff morale problems and increase in turnover
1	Incidental	• Financial loss up to $X million • Local media attention quickly remedied • Not reportable to regulator • No injuries to employees or third parties, such as customers or vendors • Isolated staff dissatisfaction

Table 2: Illustrative Impact scale

The combination of these two variables turns into the quite famous **probability-impact matrix**, which allows a first prioritization of possible risks. The conversion of likelihood and impact ratings into numerical scores allows a **semi-quantitative** [23] technique, which expresses a severity index of the risks through mathematical-statistical tools.

This technique, although worthy of mentioning, is just a little step further than a qualitative technique, but still not as exhaustive as more modern quantitative techniques, so the efforts of using this technique may not be paid off. Moreover, even when dealing with qualitative scales, two variables are not sufficient to have even a general picture: as the COSO[24] researches point out, the use of more variables provide a multidimensional picture that is much more effective when assessing risks even in a preliminary phase.

The COSO paper underlines the importance of including **vulnerability** and **speed of onset** as variables to take into account.

Although the concept of vulnerability is closely connected to the impact, they are not quite the same thing: an earthquake could cause irreparable damages to a firm, but if the firm was built specifically to resist firms, the possible impact would be way lower; therefore, vulnerability refers to the entity's preparedness to an event, which could lower or even amplify the impact of an event.

The speed of onset refers to the time it takes for a risk event to manifest itself, or in other words, the time that elapses between the occurrence of an event and the point at which the company first feels its effects (Curtis, Carey:2012). Changes in the forex market are instantaneous and their effects can be seen real-time; an economic crisis, although previously triggered, could need some years to manifest its effects.

Other qualitative methods include checklists, What-if analysis, the STEP technique, the Hazard and Operability (HAZOP) study, and so forth.

Although the usefulness of this type of scales is supported by consistent research, qualitative methods in general tend to be subjective and to reflect the mind of the developer. Because of this, qualitative methods serve as an initial screening and help to focus on the most critical risks, but must be supported by some quantitative methods of estimation. Nevertheless, they have many advantages: they are intuitive, require minimal efforts, and although they are not 100% reliable and need some quantitative support, their practical performance is good and in some cases even better than other methods. In the end, risk analysis is a matter of science but

[23] Damodaran, A., & Roggi, O. (2016). Elementi di finanza aziendale e risk management. *Maggioli Apogeo, Milano*.
[24] Curtis, P., & Carey, M. (2012). Risk assessment in practice. Committee of Sponsoring Organizations of the Treadway Commission.

also common sense, and if quantitative or probabilistic methods perform the science part, deterministic and qualitative methods establish a bridge between that complex and abstract world of numbers and reality.

3.5.3. Quantitative techniques

There is a considerable variety of quantitative techniques: among them, the QRA tool (Quantitative Risk Assessment tool) is one of the most successful. Today, these types of analysis are carried out digitally, with the use of advanced computer software products, so there is no need to formulate or develop a model. Rather, it all comes down to the choice of the software: finding the right product involves the need of specific knowledge. Relying on the wrong method originates a domino of poor choices that can lead to massive losses. Although not completely up-to-date, Lewis's[25] paper provides an overview of existent QRA software tools and is a good starting point for conducting similar researches.

Other methods include the Proportional Risk Assessment Technique (PRAT), the Decision Matrix Risk Assessment (DMRA), the Weighted Risk Analysis (WRA), and so forth.

3.5.4. Scenario analysis

Scenario analysis really embodies the "what if" philosophy behind deterministic methods, and still, depending on the degree of complexity of the analyzed scenario, it can fall under the probabilistic category.

This method consists on formulating detailed assumptions and then analyzing possible outcomes. The analysis can focus on only one factor (eg. changes in interest rates) or more than one, allowing the analysis to show the interaction between more factors.

Scenario analysis is extremely ductile since it allows various degrees of complexity: a one-factor analysis (also called **stress test**) can be easily done manually; modern software products allow complex investigations, where first the factors to be investigated are carefully defined, then the software calculates thousands of scenarios and gives back detailed statistics.

Furthermore, this method allows focusing on the specific impact on key objectives or defined aspects of the business: changes in the forex market may impact earnings but not the safety of employees, while an earthquake could impact both earnings and employees' safety.

Simple and complex scenario analysis have different utilities: complex scenario analysis is really close to other probabilistic methods, and has the same advantages and disadvantages; a simple scenario analysis allows the firm to focus on key risks and precisely calculate possible impacts on key objectives without getting lost in a multitude of data.

[25] Lewis, S. (2005, March). An overview of leading software tools for QRA. In *Proceedings of the 7th Professional Development Conference and Exhibition*.

3.6. Risks and price

As we introduced at the beginning of this chapter, price is closely connected to the risks that a firm bears. This connection has many implications:

4. If a risk is correctly assessed, it will less likely translate into a loss.
5. If a risk is correctly assessed, the consequent assessment of its treatment will be reflected in the final price; otherwise, the manifestation (and the treatment) of an unexpected risk will erode profit margins and result into an ineffective pricing policy.
6. A comprehensive and well thought pricing policy must include risk assessment aspects, thus the costs (and possible profits) derived from risks are equal to production and operational costs, and must be reflected in the final price.

Now that we have enough theoretical instruments, we are ready to continue our investigation in the next chapter, that will deal with the distribution industry. After introducing this business, chapter 4 will focus on industrial distributors and their unique mix of risks, opportunities and optimal pricing policies.

4. Introducing the industry to be investigated: the world of distributors

We are gradually narrowing the scope of our investigation, from general to particular, from theory to practice.

The previous chapter gave us an overview about risks in general, and elements of ERM. The knowledge that we have just discussed is about to be applied to a defined industry (and further to a single firm in §6).

The industry to be investigated is the **distributors industry**: distributors are the link between producers and ultimate consumers. Although this work focuses on industrial distributors (see §4.3.2 and §5), it is useful to provide a general picture of the domain we will analyze.

There is quite a variety of distributors depending on the functions they perform: in the following paragraphs we will provide a quick classification of these professional figures and then further narrow our investigation in §5.

4.1. Distributors: an introduction

Whenever there is an intermediary between the producer and the consumer, we have an **indirect** channel, in opposition to **direct** channels that don't rely on these services.

Distributors establish these channels between producers and consumers; they act as intermediaries, and there could be more than one intermediary in a single channel.

Classification is made primarily on two factors: the **type of product** (consumer or industrial product) and the **functions** they perform in the supply chain.

The first distinction is between the products that distributors deal with: **consumer products** have a different channel than **industrial products**. Consumer product channels tend to rely on more intermediaries since they have the purpose to narrowly distribute products to ultimate consumers: the reach must be maximum, therefore distributors can share tasks so that the consumer can easily have access to products. The channel structure is rather rigid and hierarchically organized: the possible intermediaries have standardized functions and cover specific roles in the channel.

Business products channels are usually shorter than consumer ones and rely on fewer intermediaries since they are more geographically concentrated and buy in larger quantity: there is less need of a very extensive reach since these type of transactions often require long negotiations and may even include international business trips, and then rely on organized transportation: the need of reach in this business is not "physical" (the consumer has to physically have easy access to the products), it is rather "reputational" (the consumer has to **know** about your products and engage in negotiations). The channel structure is less rigid than the consumer products' one: it is less hierarchical and roles are less defined since an intermediary can cover different functions.

Bearing these first distinctions in mind, we now introduce the functions that distributors can perform and then classify distributors based on the functions they perform.

4.1.1. Functions performed by distributors

Distributors mainly perform three types of functions: **transactional**, **logistical** and **facilitating** functions.

Transactional functions involve buying and reselling products or services: it also means risk-taking because in this case the intermediary doesn't just get producers and client to meet; by performing transactional functions, the distributor owns the goods and therefore is liable for any loss.

Distributors can perform **logistical functions** so that products are more accessible to clients: these functions include assorting (create an assortment from several sources to better serve clients), storing (assembling products in a stock so that they won't deteriorate), sorting (purchasing in larger quantities and dividing them in smaller amounts to satisfy clients) and transporting (physically moving a product to clients).

Facilitating functions make transactions easier for customers and include financing (extending credit to clients), grading (rating products based on quality) and marketing information and research (providing useful information to customers about market conditions, competitive condition and trends).

Performing these functions means high costs and high risks (think about arranging the transportation of 500kg of fragile goods and being liable for the whole process), but if costs are effectively managed these functions can provide strong competitive advantage.

Based on the functions that we have described, after briefly introducing consumer products distributors (cfr. §4.2), we identify primarily two business products distributor figures: **agents** (cfr. §4.3.1) and **industrial distributors** (cfr. §4.3.2), that will be discussed in the next paragraphs.

4.2. Consumer products distributors

Consumer products distributors are those who deliver the products directly to the ultimate consumers. In order to do so, they are vertically organized and establish a hierarchical channel from the producer to the consumer.
Some firms establish direct channels with ultimate consumers, but if an indirect channel is established (as for most firms), we identify primarily three types of intermediaries: **retailers**, **wholesalers** and **agents**.

Retailers are the closest link to the ultimate consumers, the last intermediaries: the most classic retailing form is to own a store that sells goods or services. Retailers can perform all three distributors functions: they own the goods that they sell (transactional function), they perform some logistical functions (for example creating an assortment) and sometimes they even perform facilitating functions (for example, some stores that sell expensive goods can have payment in instalments options).

Wholesalers are a step higher in the channel since they usually serve retailers. Wholesalers not only perform transactional functions, but also have a critical role in logistical functions: their primary functions are in fact assorting, storing, sorting and organizing transportations. Depending on the type of business, they can also perform facilitating functions.
Wholesalers can be categorized depending on the merchandise they title and the functions they perform: some categories are similar to industrial distributors' (cfr. §4.3.2), but the main difference is that wholesalers only serve retailers while industrial distributors serve industrial users, manufacturers, institutions and governments. We will now list some wholesaling categories that only belong in the consumer products channel[26] since they are especially tailored for retailers, according to Kerin A. and Hartley W. definitions[27]:

- **Rack jobbers** furnish the racks or shelves that display merchandise in retail stores, perform all channel functions, and sell on consignment to retailers, which means they retain the title to the products displayed and bill retailers only for the merchandise sold.

[26] Other categories similar to industrial distributors' ones will be discussed in greater detail in §4.3.2
[27] Kerin, R. A., Hartley, S. W. (2017). *Marketing, thirteenth edition*. Boston: McGraw-Hill/Irwin.

- **Cash and carry wholesalers** take title to merchandise but only sell to buyers that especially require the goods, pay cash for merchandise, and take care of the transportation themselves.
- **Truck jobbers** are small wholesalers with a small warehouse from which they stock their trucks for distribution to retailers. They usually handle limited assortment of fast-moving or perishable items (for example bakery items, dairy products and meat).

These types of wholesalers allow retailers to have access to a large volume of products and to choose the right amount of goods; moreover, by performing stocking functions wholesalers can provide the goods immediately so that the retailers don't have to wait for long distance transportations. Retailers need the goods immediately to serve customers (especially groceries but also other seasonal products such as clothing), so wholesalers usually have continuous relationships with the retailers they serve: this way activities of restocking are quick and the ultimate customers have easy and comfortable access to products.

Agents are professional figures that can deal with both consumers and industrial products: they don't perform transactional functions but promote a firm's products to other intermediaries (or even customers). Due to their polyhedral nature, agency relationships will be discussed more in detail in §4.3.1.

As we pointed put in the previous paragraphs, the organization or consumer products channels is rather strict with little room for exceptions; in other words, the presence of wholesaler assumes the presence of a retailer[28] (but not necessarily the presence of an agent). The presence (or absence) or wholesalers and agents is dictated from the type of market: usually vehicle retailers don't rely on wholesalers but are directly in contact with the producers since the costs of stocking and assorting would be too high for a wholesaler; on the other hand, luxury items (such as jewellery) may involve an agent that promotes the products to a wholesaler.

[28] Especially because in most legal systems the ultimate consumers are not legally authorized to buy directly from a wholesaler.

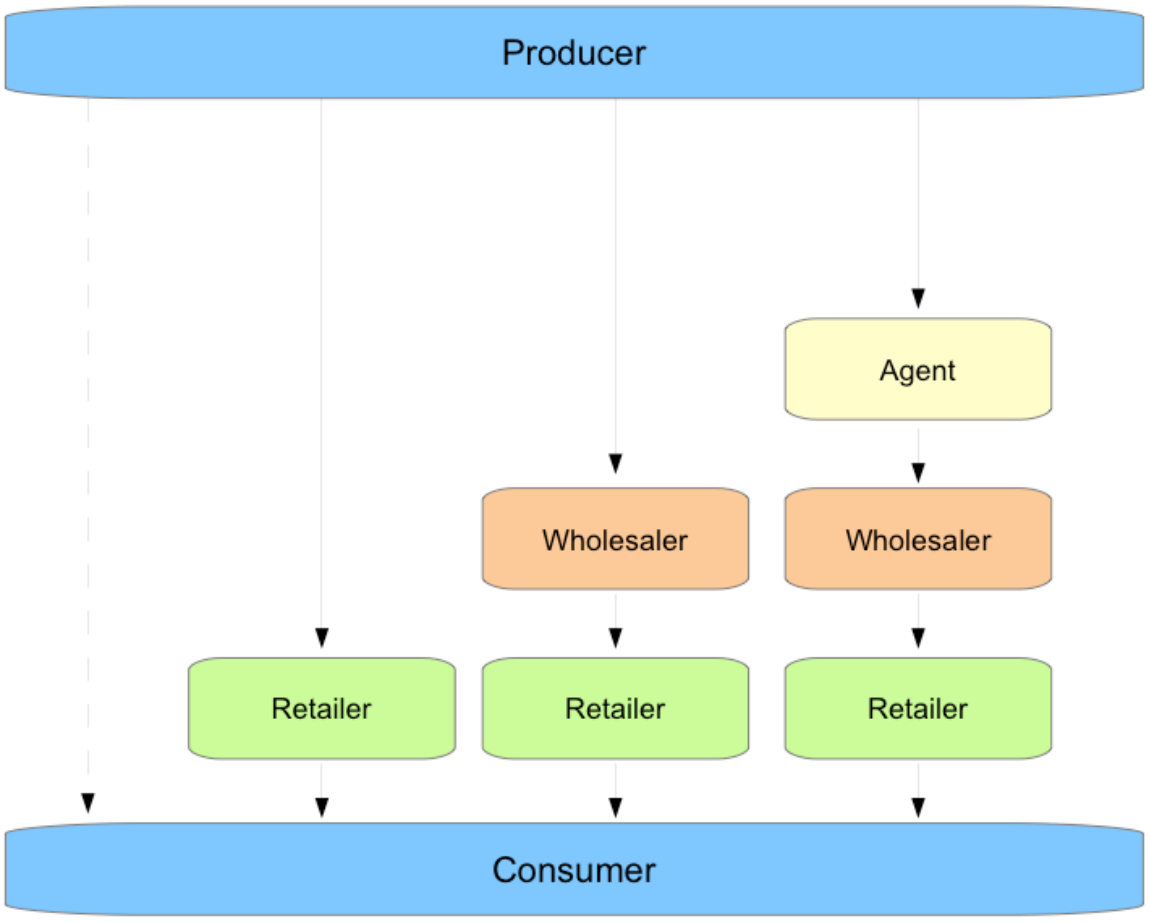

Exhibit 3: Types of consumer products channels

4.3. Industrial products distributors

Industrial products distributors perform similar functions to the consumer products ones, but a much higher volume of trade translates into different organizational needs.

Unlike the case of consumer products, in the case of business products the establishment of direct channels is way more often, especially when dealing with expensive, customized articles (think about the aircraft industry).

An other important difference to point out is that consumer products are almost always finished products, while industrial products are often half processed, and this has important implications: the productive cycle has precise timing and it's crucial that the right products arrive at the right time, so the transportation has to go smoothly.

There are mainly two types of industrial products distributors: **agents** and **industrial distributors**. As we pointed out in the previous paragraphs, the channel structure is less rigid

and the presence of an agent does not necessarily involve the presence of an industrial distributor.

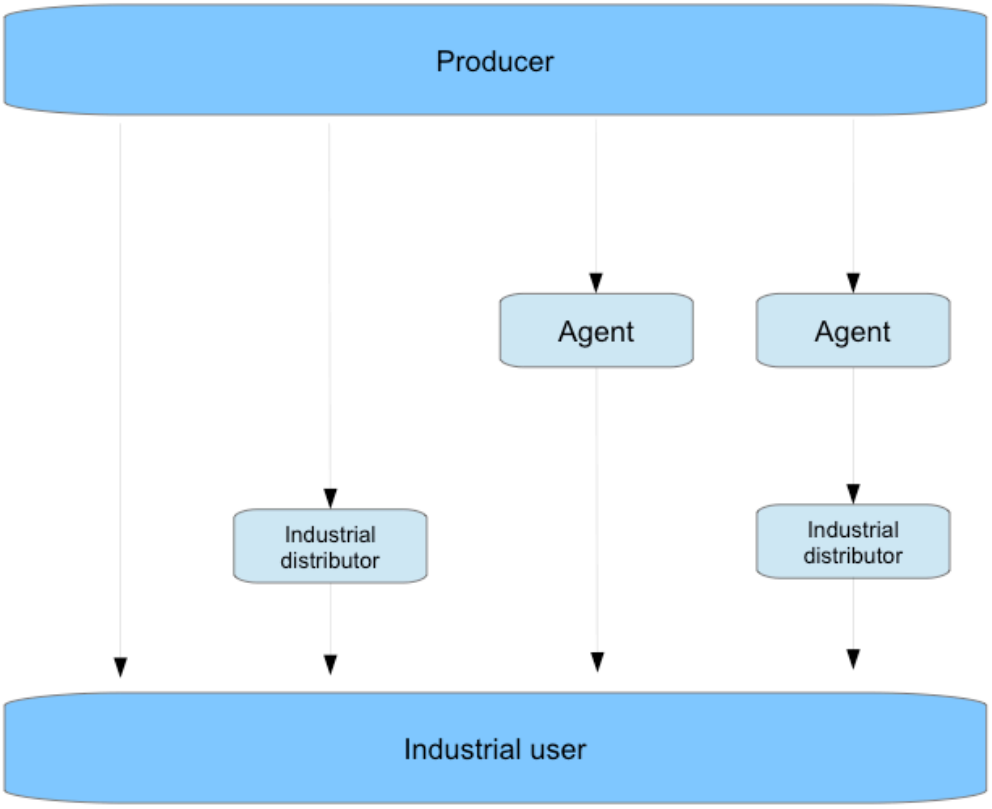

Exhibit 4: Types of industrial products channels

4.3.1. Agents

Through an agency contract, an agent undertakes the duty to promote a firm's products or services and to perform one or more marketing functions. The firm allows the agent to act on behalf of the firm itself[29], so depending on the type of contract the agent has legal authority to make decisions for the firm.

Agents don't perform neither transactional nor logistical functions, but instead represent firms that will eventually perform them; in a certain way, it can be said that agents perform facilitating functions since they make transactions easier both for producers and clients in exchange for fees and commissions.

[29] With the exception of **marketing agents**, who do not have the authority to bind the supplier but limit their action to marketing and promoting suppliers' products.

Most agents are professional figures that gather producers and consumers together for prospective contracts. There are different types of agents depending on their policy: **manufacturers' agents** may work for different firms (as long as the products are not competitive between them), whereas **selling agents** work for only one firm and usually take care of the whole marketing plan. These types of agents have continuous relationship with their clients, unlike **brokers** that only negotiate single contracts between two parties (for example in the real estate business: after the sale contract the two parties no longer need the agency).

The laws that govern agency agreements vary from nation to nation, but the common feature is that the agent represents the firm in a number of circumstances and can act on behalf of the firm. Agency contracts can also vary in complexity: if a broker only deals with one transaction, the contract should be relatively simple. On the other hand, when negotiating a continuous business relationship with a manufacturer's agent, the contract may be more complex since it has to narrowly define the boundaries of the agent's legal responsibility. Some common clauses in agency contracts are exclusivity (the supplier not only can't appoint other agents in the territory, but also looses the rights to actively seeking sales in the territory), sole rights (the supplier is not allowed to appoint other agents in the territory but has the right to seek sales in the agent's territory) and non-exclusivity (the supplier has the right to appoint other agents in the territory and can also seek sales). An other common clause is an indemnity clause in case of anticipated termination of the contract.

Agents have a crucial role in business transactions in a multitude of situations: a small firm with a relatively low volume of sales could benefit from an agent in order to gain visibility for its products; on the other hand, a big multinational is likely to need agents that can carry out the business in different areas of the world.

4.3.2. Industrial distributors

Industrial distributors perform similar functions to wholesalers, but as we previously pointed out, the channel structure is different, the volume of trade is much higher, the transportation is a delicate issue, and the products are different.

As for wholesalers, there are different categories of industrial distributors depending on the precise functions they perform and the merchandise they title. The common feature (that differentiates them from agents) is the transactional function: industrial distributors own the goods that they sell. Owning the goods means at least some logistical functions: assorting, storing and sorting if not even transporting. **Drop shippers** are an exception to this paradigm: in fact, they own the merchandise they sell (which differentiate them from agents),

but do not physically handle, stock or deliver it. They solicit orders from customers and have the merchandise shipped directly from a producer to a buyer. This hybrid distribution form is suitable for bulky products such as coal, lumber, and chemicals.

Accordingly with the distributor's policy, a distributor could also perform some facilitating functions, especially in the marketing department[30].

According to the merchandise they title, industrial distributors (and wholesalers, see §4.2) can be classified as **general merchandise** and **specialty merchandise**. General merchandise distributors perform all channel functions and hold a broad assortment of merchandise, but the depth of assortment within the product lines they carry is rather limited: these characteristics make them more suitable for retailers than for industrial users (with some exceptions, of course). On the other hand, specialty merchandise distributors carry a relatively narrow range of products but have a very extensive within the products line carried.

Furthermore, distributors can also be classified according to the specificity of the contracts and the activities that the distributor agrees to perform: for example, distribution can be intensive or selective. Intensive distribution means that the distributor agrees to promote the firm's products in every possible way: the products that require intensive distribution are daily products that need to fill the shelves of commodity stores; if the goods are not in stock, the consumer will buy an other brand. Selective distribution is the exact opposite: it works well with luxury products, and since the buying decision is long and complicated the client will be willing to spend money and time looking for the best option. In selective distribution cases, the maximum reach is therefore less important: on the contrary, other factors such as high quality customer service become crucial.

As for agency contracts[31], clauses like exclusivity, sole rights or non-exclusivity are very common, but the indemnity clause is much less common.

4.3.3. Agency vs. Industrial distribution

After giving an overview of the different types of distribution in the B2B domain, this paragraph will draw some conclusions about differences, similarities, threats and opportunities in both businesses.

Agency and industrial distribution may perform similar functions (in the end it is about promoting/selling a supplier's goods or services), but are in fact very different both in theory

[30] In the apparel industry, that will be analyzed in detail in Chapter §6 through the concrete case of the firm Maxvogue International, fabric distributors have critical role in identifying trends and delivering them to clients.
[31] See §4.3.1

and in practice. We already pointed out the main difference: industrial distributors own the goods and actually become suppliers themselves, while agents don't own the good but depending on the type of contract can act in behalf of the firm. This topic has implications in every aspect of the firm, especially from the **marketing**, **legal**, **control, price charged** and **customer management** point of view. Before we focus on industrial distributors' risks and opportunities[32] it is useful to underline some of these important differences:

- **Marketing differences**. Agents are specialized in marketing functions, but fewer sales only mean less profit. On the other hand, since industrial distributors own the goods, less sales means losses, so they could be more motivated to finish the stocks (but could also mean for them to be less motivated to buy in very large quantities).
- **Control differences.** By giving away the ownership of the goods, the supplier obviously has less (or none) control over the distributor's goods, and if the distributor impacts the supplier's image with negative actions the supplier has little (or none) room for action (if not differently appointed in the contract). On the other hand, with a well-crafted agency contract the supplier can keep a relatively high control over the goods and the agent's actions, price and marketing methods in particular.
- **Legal differences**. Agency contracts are generally more delicate from a legal point of view. As we have already pointed out, the agent can act in behalf of the firm, and this can cause legal liabilities for the supplier if the agent acts incorrectly. Moreover, not only is the agent entitled to commission during the contract period, but in some cases even after the contract is terminated. Also, many taxation systems regard the supplier as a trader if an agent is based there, which can lead to tax liabilities**.** On a positive note, there are usually fewer competition law issues that affect agency contracts.

  With industrial distribution, by selling the goods the supplier also passes a great portion of risks and liabilities to the distributor. On the other hand, a distribution agreement is more likely to incur in competition law issues.
- **Customer management**. With an agency contract the supplier has more control over customer management in two critical areas: after sale services and credit management. In fact, after the sale is made with the help of the agent, supplier and customer can have direct contacts, while this is more difficult with a distribution agreement. As for credit management, if the supplier appoints an exclusive distributor for a territory, the entire credit risk for that territory is placed on the distributor rather than each customer (as would be the case with an agency agreement): if the distributor places an

[32] See §5.1

order to be paid in three months but doesn't collect the payments within the established time, the supplier would also incur in financial stress.

- **Price charged**. Because of all the risks that a distributor has to face, the margin added to the final price in often higher than the fee paid to the agent.

	Agents	Distributors
Suitable products	Medium-priced to luxury items	Low- to medium-priced items
Marketing	Specialized in the marketing department	Motivated to sell goods
Control	Less control over the goods	More control over the goods
Legal	Many issues regarding liability, duration of the contract, and taxation	Competition law issues
Customer management	Less control over customer management	More control over customer management
Price	Commission on a percentage basis	Margin added to the final price

Exhibit 5: Main differences between agents and industrial distributors

From the supplier point of view, both agency contracts and distribution agreements have pros and cons, and the choice of the channel mostly depends on the type of product to be marketed[33]. Because of its characteristics, an agency contract is more suitable for medium-priced to luxury products, since the supplier can maintain a direct contact with its clients and monitor the agent's action in order to preserve the brand's image. On the other hand, industrial distributors are the best option when trading low- to medium-priced items, often unfinished products that are usually sold in large quantities, so that the supplier can delegate most marketing and logistic functions.

[33] For an in-depth analysis of this topic, see Dent, J. (2011). *Distribution channels: Understanding and managing channels to market*. Kogan Page Publishers.

The differences that we pointed out have major implication on the risk aspects. Referring to the risk classification that we discussed in §3.4, beside environmental risks that affect basically every industry, the agent has to face some industry risks (especially competitive risks) and some firm-specific risks (labour risks, credit and liability risks, and behavioural risks), but since the agent doesn't deal with the production nor the logistical function of the business, it carries less burdens than an industrial distributor. The latter, beside all the risks that an agent has to face, also has to deal with many more sources of uncertainty. The price is a clear indicator of this difference, as we are trying to demonstrate throughout this work.

Now that we have underlined the differences between different types of distribution, the next chapter will deal in depth with the specific risks of industrial distributors and the implications on the price aspects.

5. Industrial distributors' risks and implications on price aspects

The previous chapter gave us some insights about the different types of distributors; it is now time to focus on the main topic of this work, industrial distributors.
This chapter's aim is to define industrial distributors' industry-specific risks and then to see the implications on the price aspects, to prove our thesis that price is (among other things) the monetary translation of the risks that a firm undertakes.

An interesting tool to begin with is the SWOT analysis: it will be described in the next paragraph.

5.1. SWOT analysis

The SWOT acronym stands for Strengths, Weaknesses, Threats and Opportunities and the credit for this method is given to Albert Humphrey[34] although the origins of the method are found in a research conducted at SRI during the 1960-1970, together with other academics.
The SWOT analysis is a powerful yet intuitive tool to quickly identify profitable (and unprofitable) inputs of a firm (or industry). It allows to graphically visualize every aspect of the business dividing them in a positive/negative-internal/external matrix. The "internal" aspects are intended to be read in the present, while the "external" ones are more projected on the future.
Strengths are positive factors of the organization, so the aim is to maintain them, build on them and use them as leverage.
Weaknesses are negative factors that cause losses to the firm, so they must be neutralized.
Opportunities are future perspectives that could benefit the firm, so they should be prioritized and exploited.
Threats are future perspectives that could damage the firm, so the firm should take measures to manage them or counter them.

[34] Humphrey A. (2005). *SWOT Analysis for Management Consulting*. SRI Alumni Newsletter. SRI International

Although the distinction between “positive” and “negative” aspects is not always as neat, the SWOT analysis is a good starting point to screen threats and opportunities; from a price perspective, positive aspects are the key to profitability, and the negative ones are risks that influence decisions on the final price.

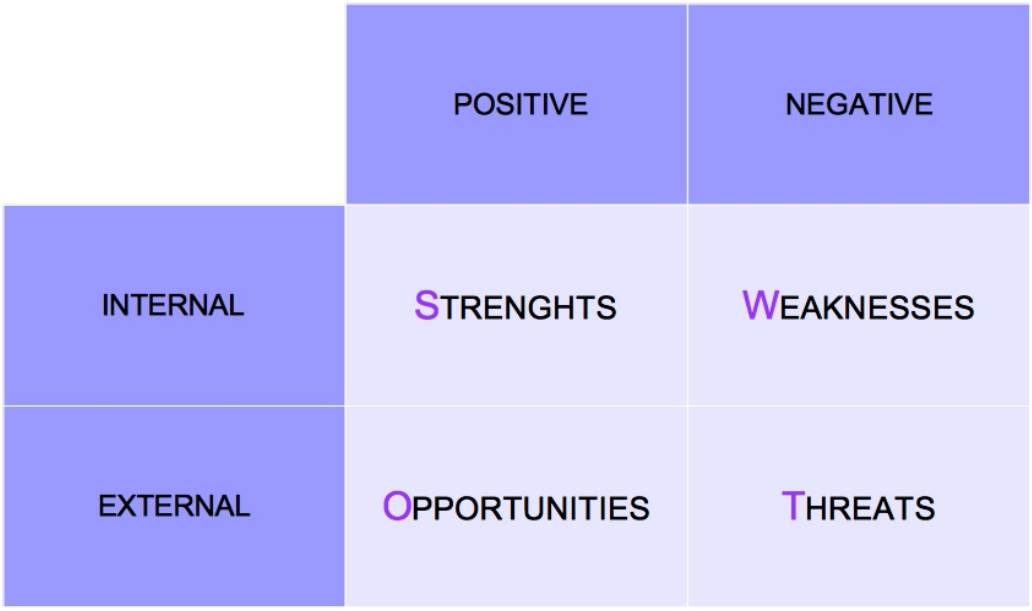

Exhibit 6: SWOT analysis canvas

Now, the SWOT analysis is usually supposed to be tailored at a specific firm since a consistent part of the analysis are “internal inputs”, but an comprehensive screening of the distribution possible sources of risks and opportunities is nothing but useful to our pricing policy investigation, since all these factors contribute to price decisions.

In order to focus on distribution-specific aspects, in this analysis we will not mention factors that are “universal” for potentially every industry (for example, a committed management or a long experience in the field are certainly a strength, but this is true for every industry, so this type of factors will be omitted).

As we have mentioned earlier in this paragraph, sometimes the distinction between "positive" and "negative" aspects is rather undefined and depends on managerial actions: a threat could be turned into an opportunity (or vice versa) through efficient (or inefficient) policies.
This is even more true when categorizing "present" and "future" aspects, both positive and negative.
For the reasons above, we find reductive to define so strictly two major issues such as **time management** and **currency management**, which are strictly correlated and have massive impact on price decisions.

The following paragraphs will discuss in detail strengths, weaknesses, threats and opportunities of the industrial distributors' industry: the aim is to provide a clear classification of the known information in order to make conscious price decisions.
In §5.2 and §5.3 we will analyze respectively time management and currency management, since the ongoing nature of these factors doesn't allow such a rigid classification and needs daily monitoring.

5.1.1. Strengths

Besides dealing with successful products, a basic strength in the distribution industry has to be the **delivery** process. **Fast** and **responsive** delivery is the key to gaining and retaining clients: industrial products often happen to be unfinished products, which means that those products are part of an ongoing process; the timing becomes crucial because delays in delivery translate into delays in the production, which is just the beginning of a series of negative events. Some firms may choose products of less quality compared to others in exchange for assured fast delivery.
Whether **direct delivery**[35] is actually a strength or not, depends on firm-specific factors that involve assessing various aspects of such decision: given that internalizing the transportation should lead to optimization and cost control, a cost-benefit analysis should be made and such investment should be motivated by great future ROI, otherwise it could turn into a waste of resources and cause losses to the firm. IKEA[36] has successfully internalized transportation, but such bold choice led to the failure of many firms.
Aside from this core aspect, an other strength could be an effective **client management**: this is particularly true for distributors that usually have fewer clients that buy in large quantities

[35] Direct delivery happens when a firm provides for the delivery by their own means; in opposition, indirect delivery is when a firm hires an other one to handle transportation.
[36] https://www.ikea.com

and tend to seek for long-term agreements, so keeping track of clients' purchases through a **customer database** may help to deepen the client-distributor relationship.
The client management area also covers the ability to produce **efficient contracts**: one must find the balance between favouring the distributor (for example with exclusivity clauses, cfr. §4.3.2) and facilitating the client (for example with delayed or by instalments payments).

5.1.2. Weaknesses

A first distribution-specific weakness could be a small client base due to **inefficient communication**: marketing actions for distributors are tricky and usually don't rely on the classic communication channels (such as television or radio); the absence of a direct marketing system could be a critical weakness.
A **limited supply chain** could also be an obstacle: an unsatisfying assortment is not an attraction for clients, so the access to competitive products is crucial and must be managed through an organized supply chain.

5.1.3. Opportunities

To overcome one of the weaknesses that we just mentioned, **visibility** opportunities like fairs or exhibitions are advantageous in order to enlarge the customer base and reinforce the firm's image: participating to such events usually increases the firm's prestige.
Identifying a successful product and therefore **filling a market gap** is also a great opportunity, but a more difficult one to catch.

5.1.4. Threats

Besides the competition threats, most threats regard the products to be sold: everyday shifting **market trends** are difficult to anticipate and to counter, especially in the distribution industry where contracts and orders are decided long before getting an actual market response, and making adjustments *in medias res* is sometimes impossible due to contract obligations.
Seasonal demand is also a threat, especially on a financial basis due to the difficulty to manage cash flows that come in waves.

STRENGHTS	WEAKNESSES
• Fast and responsive delivery • Direct delivery* • Efficient client management • Customer database • Efficient contracts	• Inefficient marketing • Limited supply chain
OPPORTUNITIES	**THREATS**
• Visibility • Profitable market gap to fill	• Shifts in market trends • Seasonal demand

Exhibit 7: Industrial distribution SWOT analysis

Now that we have classified the known information, we can venture in more complex and ongoing factors such as the concept of time in finance (see §5.2) and the currency exposure risk (see §5.3).

5.2. The concept of time in finance

Time affects financing decisions in a variety of way, and some of them are not as intuitive. Since the present work aims to focus on pricing decisions from a finance perspective, such premises are preparatory to get to the heart of the matter.

We spoke about time threats or opportunities in the previous paragraphs when dealing with real [37] activities: delays in shipment are obviously a weakness (cfr. §5.1.3) and the implications are easy to identify: such issues may erode the firm's competitive advantage. On the other hand, a delay in payment from a client has less obvious consequences.

[37] The adjective "real" is here opposed to "financial".

To begin this discussion it's useful to spend a couple of words about the difference between finance and accounting.

5.2.1. Difference between finance and accounting

The key to understand the difference between finance and accounting lies exactly in how both disciplines approach to events under the time perspective. With regard to the example we made earlier, that is to say a delay in payment, the difference becomes evident: when drafting the Profit and Loss statement, an accountant would likely invoice a late payment under the "profit" label (and would further invoice such transaction under the "accounts receivable" column): even if the payment has not physically arrived to the firm, the accounting approach still regards a late payment as **profit**.

On the other hand, the finance approach would take a late payment into consideration only when the transaction is physically made, and would be more likely focus on cash flows implications rather than capital aspects. In fact, as we will discuss later in §5.3.1, a late payment may not have consequences on the balance sheet, but could have serious implications on a liquidity basis and cause financial stress to the firm. Events like late payments, either expected or unexpected, may not be apparent in the income statement, but must be managed through financial strategies so that there are no negative consequences on the firm's working capital.

This fact points out a clear difference: accounting's purpose is to gather and classify all the firm's activities (even those that did not physically had place) during a certain timeframe and produce a consolidate statement in order to assess the firm's performance. On the other hand, finance's purpose is to analyze current (and future) events in order to make efficient plans for future actions. In a nutshell, accounting is more likely to be defined as **past oriented**, while finance would be defined **future oriented**, since its purpose is to analyze existing data to produce projections and plans for future actions, instead of analyzing existing data to assess past performances.

5.2.2. "Time is money"

Finance approaches time considerations in an ongoing perspective, as we pointed out in the previous paragraph, but this is not the only relevant fact to point out: time is indissolubly tied to money, in more than one way. First of all, time has a monetary value. As obvious as it may sound, this assumption has practicable and measurable consequences. The **Time Value of**

money theory[38] states that the same sum of money is worth more in the present than in the future. For the sake of this work we will not dive into this particular topic but we will limit ourselves to underline the many implications of this fact: time alters the value of money (and other assets), in a descendent order from present to future. One of the more obvious reasons why the same sum is worth less in the future is because of the opportunity cost: if the sum in the present is invested it may generate profits, so the same sum is automatically worth less in the future. That is saying, that the time interval between the present and the future sum has a **value** which, in this example, translates into the profits of the investment.

In other words, time actively alters the value of assets by having a value itself.

The other way around, the value of assets changes during time. This is not quite the same concept that we just exposed: in addition to the active time action that we described earlier, the value of assets changes during time because of other factors. An example will make this topic clearer: the assumption is a transaction between two firms from different countries and different currencies, and the payment is two months within the order. An accounting approach would invoice the transaction under the "account receivable" column and further translate it into a cash entry at the moment of payment. This static approach may not consider that the value of the cash entry may have varied from the initial moment of the transaction due to fluctuations in the forex market[39]. Finance must have an ongoing approach when assessing value since value changes over time for multiple reasons.

[38] For an in-depth discussion of this topic, see Drake, P. P., & Fabozzi, F. J. (2009). *Foundations and applications of the time value of money* (Vol. 179). John Wiley & Sons.

[39] See §5.3.1 for an in-depth analysis of this situation.

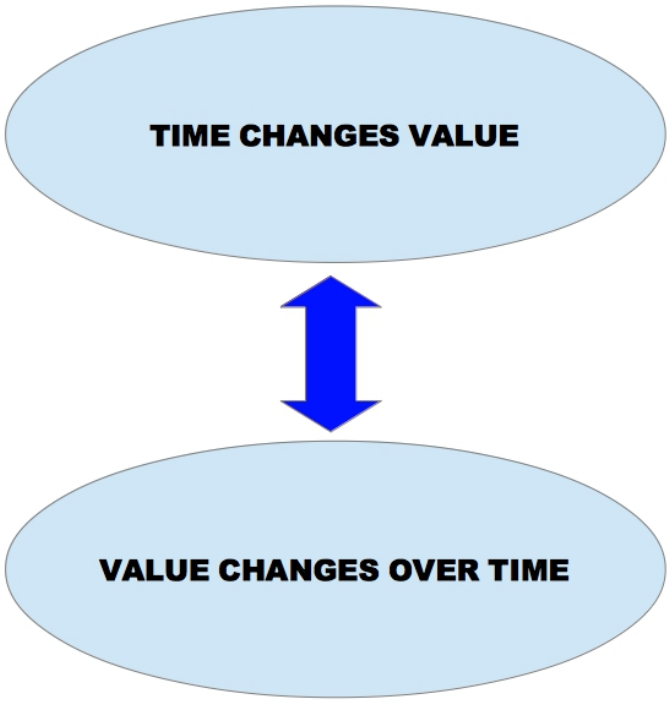

Exhibit 8: relationship between time and value.

After the previous discussions we can come to the conclusion that value is inextricably linked to time, and since price may be defined as an expression of value, the key to make effective price decision is to adopt an ongoing point of view and consider value a variable that changes because of many factors.

Bearing this concept in mind, in the next paragraph we will deal with currency risk exposure from an ongoing and integrated point of view.

5.3. Foreign exchange risk[40]

It is a known fact that the value of currencies fluctuates during time, and therefore originates a risk. Nowadays, even a small firm that only operates nationally is not exempted from the currencies fluctuations' risk. In §3.1.1 we defined the term "exposure": in order to understand the way to counteract the currency risk, it is necessary to define the three ways that a firm can

[40] In order to begin this discussion, we take for granted the concepts of **spot rate** and **forward rate**: for a detailed discussion about these two concepts, see Damodaran, A., & Roggi, O. (2016). *Elementi di finanza aziendale e risk management*. Maggioli Apogeo, Milano.

be exposed to such risk. Although the boundaries between the risk areas are not always sharply defined[41], we identify three main types of currency exposure: **transactional exposure**, **translation exposure** and **economic exposure**. Since transactional exposure is more relevant to the topics that we will discuss, this latter type of exposure is discussed in greater detail.

5.3.1. Transactional exposure

Firms are subject to transactional exposure whenever there is a transaction with a foreign currency. We provided a brief example of such situations in §5.2.2 to introduce the concept of value changing over time, but little has been said about the practical effects. Reconnecting to our previous example, we will now provide a concrete case and show numerical evidence of transactional exposure[42].

Detailed assumptions:

- A European exporter sells 1000$ worth of goods to a US importer, and invoices the transaction on March 1st.
- The payment will be done in 60 days.
- On March 1st the spot rate is $/€=0,8196, so the expected earning from the transaction would be €819,60.
- On April 30th the spot rate is $/€=0,7692, so the effective earning from the transaction would be €769,20.
- The exporter does not hedge the transaction.

As Exhibit 9 shows, the time interval between the billing of the transaction and its effective monetary collection alters the value of the transaction and causes the firm to incur in **exchange losses**. Although this is a clear example of transactional risk, the picture is not yet complete: the accounting approach only considers the transaction from the billing moment, but as Bertinetti G. (Bertinetti G.:2006) argues in his work, the transaction actually originates from the moment the order is placed. If we assume that the order was placed on January 1st

[41] While it is possible to define different types of exposure, it is more difficult to sharply define the different exposures' areas: often one single action can cause the firm to be subject of all the three types of exposure. More about this topic can be found in Bertinetti G. (2006). *Finanza aziendale internazionale. Verso un approccio manageriale per la gestione del rischio del cambio*. Giappichelli Editore.

[42] The current example is extrapolated from Bertinetti G. (2006). *Finanza aziendale internazionale. Verso un approccio manageriale per la gestione del rischio del cambio*. Giappichelli Editore.

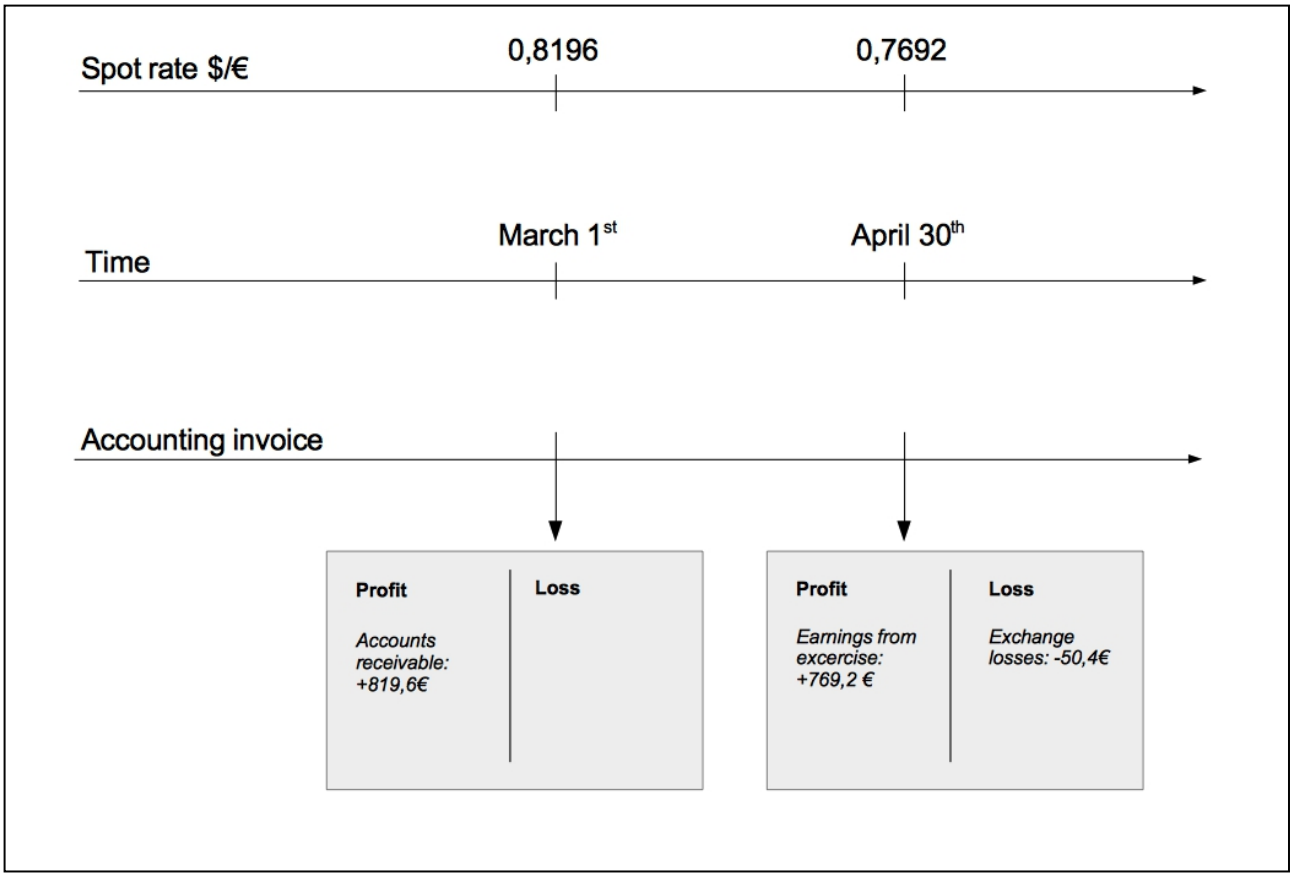

Exhibit 9: Visual representation of §5.3.1 example

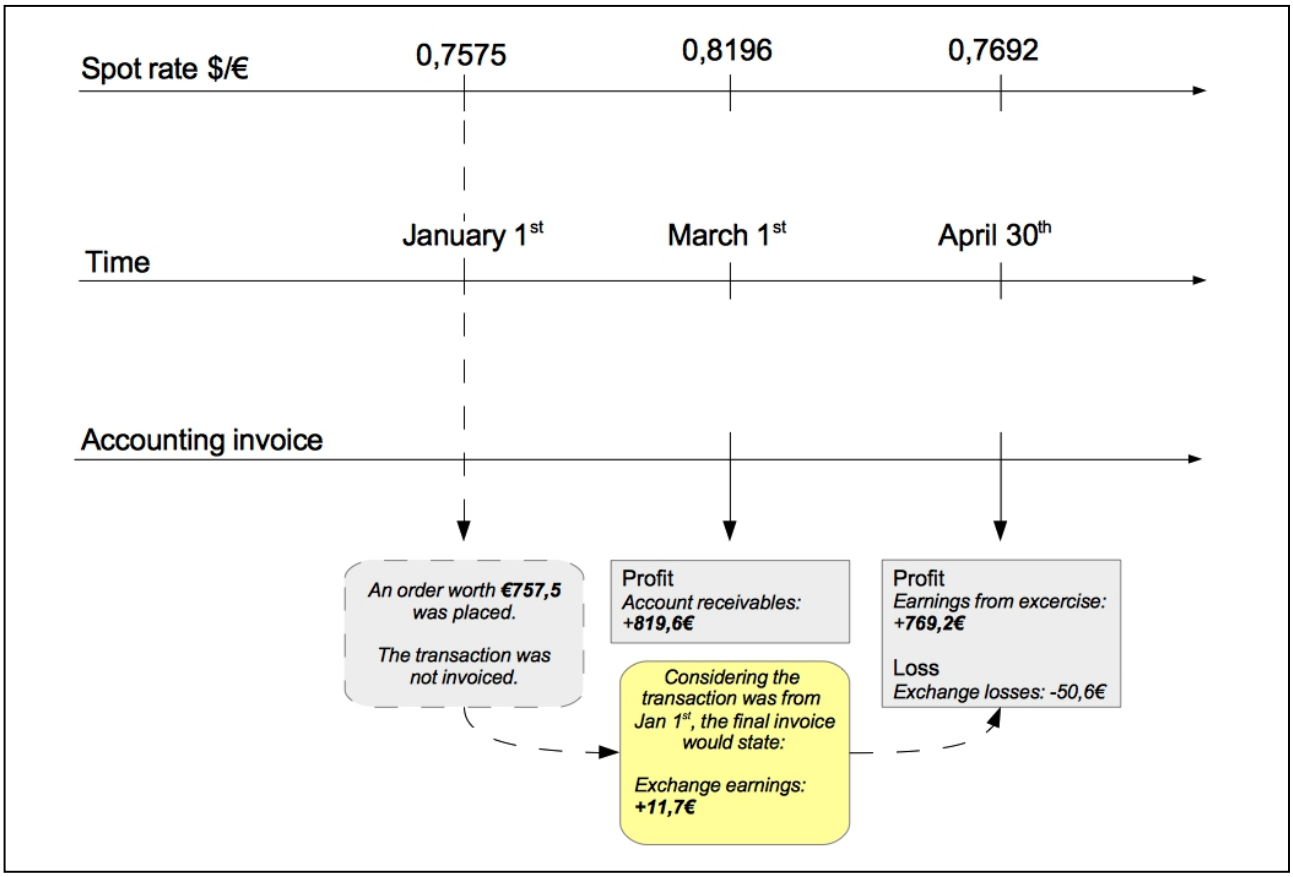

Exhibit 10: Visual representation of §5.3.1 example, revised

and that the spot rate on that day was $/€=0,7575, the picture considerably changes, as shown in exhibit 10.
The wider timeframe highlights some severe discrepancies with our previous findings: if accounting considered the transaction from the order placement date, the consolidated invoice would actually show **earnings from exchange rate** rather than losses[43].

This mere example is far from fully describing the whole picture, but definitely points out that transactional exposure must be integrally managed at the top levels of organization, thus the accounting system is not suitable to individuate situations like these in advance but only quantifies the damages *ex post*.

5.3.2. Translation exposure

Firms are subject to translation exposure when the firm owns subsidiaries in different countries whose currencies that are different from the holding one: when producing a consolidated income statement, every subsidiary is likely to produce its own statement in its own currency, and this might impact the net value of the whole group, also depending on the conversion method[44] that the accounting system decides to use.

5.3.3. Economic exposure

Economic exposure is more complex, thus, as opposed to transactional and translation exposure that are both linked to specific events (such as dealing with foreign clients or having subsidiaries in other countries), economic exposure is linked to macroeconomic variables that are difficult to identify and even more challenging to foresee.
In ideal conditions, the Purchase Power Parity[45] (hereafter PPP) law is respected; unfortunately, the PPP conditions are hardly ever met and this causes economic imbalances that are magnified if the exchange rate does not move accordingly with the inflation rate. In theory, the PPP determines the real exchange rate, but in reality transactions are made according to the nominal exchange rate, which is the product of the supply and demand of the examined currency. So, if there is a discrepancy between the PPP and the nominal exchange

[43] Of course, what we have just explained is also valid from the buyer's point of view, in reverse; for the purposes of this work, we will focus on the industrial distributors' side.
[44] For an in-depth discussion about the possible conversion methods, see Bertinetti G. (2006). *Finanza aziendale internazionale. Verso un approccio manageriale per la gestione del rischio del cambio*. Giappichelli Editore.
[45] For the purpose of this work, this concept is taken for granted. For an in-depth discussion about the Purchase Power Parity, see Officer, L. H. (1982). *Purchasing power parity and exchange rates: theory, evidence and relevance* (Vol. 35). Greenwich, Conn.: JAI Press.

rate of two currencies, one side will be favoured by this situation, and the other side will inevitably incur in losses. Specifically, there are two possible scenarios:

1. If the nominal exchange rate variation is lower than the inflation differential, the profit margin will lower. For example, if the prices in the firm's homeland suffer 5% of inflation but the nominal exchange rate only benefits of a 2% rise in value, the firm will be less competitive than the one from an other country whose inflation rate has been followed by a proper adjustment of the nominal exchange rate.
2. If the nominal exchange rate variation is higher than the inflation differential, the profit margin is likely to increase. For example, if the prices in the firm's homeland suffer 2% of inflation but the nominal exchange rate actually benefits of a 5% rise in value, the firm will definitely be favoured by this situation, as price increase is lower than the increase of the value of the currency.

As we have said earlier in this paragraph, these situations are extremely difficult to foresee and even more difficult to counteract. Moreover, even firms that don't operate internationally are subject to economic exposure, thus economic exposure does not deal with particular transaction, but rather expresses the economic competitiveness of a country (and the country's currency). Whether or not it is possible to hedge economic exposure, the topic is still under debate; what is clear is that there are serious implications over price and profit margin.

5.4. Responsibility of the goods

The last price-related risk that we are going to discuss is the responsibility of the goods. Of course, the firm is responsible for the goods that it stocks and for the quality guaranteed, but whenever transportation is involved, an other important risk factor comes out. Indeed, transportation is a delicate issue, especially for damageable goods, and if something goes wrong, it is important to clarify who is responsible for the goods at every stage of the transportation. In §2.3.3 we introduced the concept of different prices according to the responsibility that the firm undertakes, referring to the worldwide accepted ICC terms (or Incoterms).

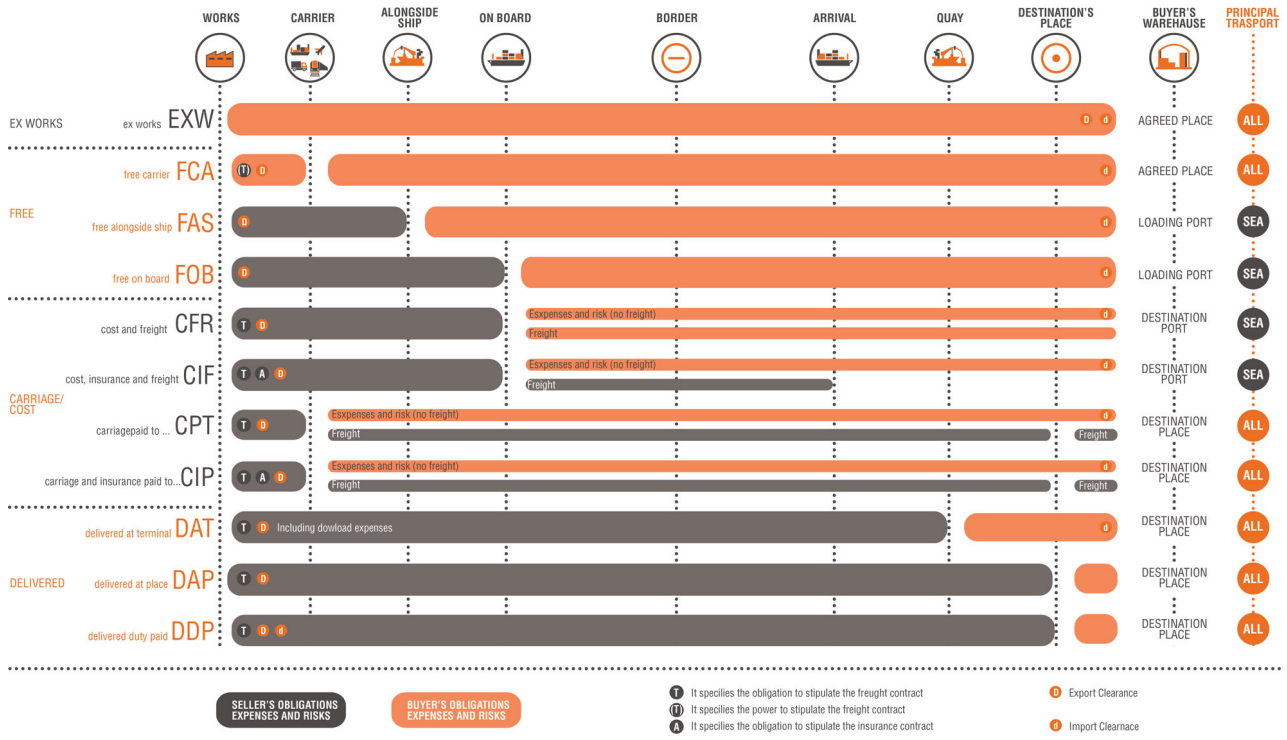

Exhibit 11: Incoterms. Source: https://www.tuviaitalia.com/strumenti/incoterms/

The Incoterms list, shown in Exhibit 11, provides detailed and univocal types of contracts that express both buyer's and seller's obligations, even according to the transportation mean.
The responsibility of goods is either a threat or an opportunity for the seller, thus if the firm is capable to manage transportation and insurance in effective ways, the service that it provides can become a competitive advantage and can increase the profit margins. Depending on the type of service the buyer is interested into, a more comprehensive service automatically translates into higher price, and if the seller is able to optimize the costs of such service, the profit margin will increase.

5.5. Facing risks

After listing and analyzing the possible risks that an industrial distributor can encounter, we have come to the final decision: how to face the risks.
Some risk-adverse firms may decide to avoid most risks, but some of them are inevitable (for example, the currency exposure risk), and when a firm is forced to face a risk there are two main strategies that it can adopt: **risk transferring** and **risk retaining.** Of course, when a firm decides to retain a risk, the firm can either **mitigate** the risk or decide not to take actions to counteract it. All these strategies have pros and cons, and they all have direct impact on price (and profit margin).

When a firm decides to **transfer** a risk, an other firm (typically insurance companies or financial institutions) agrees to bear such risk for a compensation, which stands for the reward for providing such service. The cost of this service, however, is added to the product's total cost, that impacts the price directly.

On the other hand, when a firm decides to retain a risk, is obviously not subject to additional costs, but rather to the future effects of the uncertainty. This is in fact the main difference between the two strategies: when transferring a risk, the firms agrees to pay a price (and decrease profit margins) in exchange for the security of a certain smoothness of expected positive cash flows; instead, when a firm decides to retain a risk, it accepts the uncertainty of expected profit margins, knowing that profit (and positive cash flows) could either increase or decrease depending on how the risk manifests itself.

None of these strategies is superior to the other, but they suit different situations that must be assessed in advance. So, after correctly assessing all the risks (as we did in §3 and earlier in §5) the firm can consciously decide the correct strategy to adopt.

5.5.1. Facing pure risks

In §3.1.1 we defined the crucial different between pure and speculative risks: so, when facing pure risk, the main decisions comes down to whether or not to buy insurance products (therefore **transfer** the risk) that guarantee an indemnity if the risk causes losses to the firm.

To make an example: in §5.4 we talked about the responsibility of the goods that are to be transferred. Insurance companies offer numerous formats of risk coverage depending on what risk(s) the firm is willing to transfer[46]. The risks that might impact the transportation process are various and mainly concern possible damage to the goods and, specifically, the source of risk that damaged the goods. A firm can decide to cover damage from natural causes, human error, and can decide at every stage of the transportation which risks to cover. It is even possible to cover risks that don't damage the goods but cause late delivery instead. Every firm has endless possibilities to cover pure risks, since insurance firms constantly adjust their offer to suit the customers' needs: whether or not to cover possible risks, is up to the firm's possibilities and strategy, that will be further discussed in §5.5.2.

5.5.2. Facing speculative risks

Facing speculative risks is more complicated as we have mentioned that such risks can also cause positive results and actually be converted in opportunities. Speculative risks, in the

[46] It goes without saying that insurance firms offer insurance products for virtually any risk that a firm can encounter, from natural disasters to the risk of not being able to collect a payment. In this discussion, since we deal with industrial distributors' risks, it is natural to mention the transportation issue.

distribution industry, mainly concern all the possible currency exposures that we have discussed in §5.3. In front of speculative risks, the firm has three options: either transfer, retain or mitigate the risk.

When a firm decides not to make transactions with foreign currency, is actually **transferring** the risk of transactional exposure to the counterpart: unlike pure risks, speculative risks can be transferred without purchasing insurance products, but instead, the counterpart may agree to bear such risk as part of the contract[47].

When a firm decides to retain a risk, as we have mentioned earlier, the options are **mitigating** such risk or not taking actions to counteract it. A firm may decide to bear all the risks of dealing with foreign currency and accept the variations of expected cash flows. But if the firm is willing to mitigate currency exposure, there are several instruments, such as **hedging** transactions with financial instruments. While these financial instruments will be discussed in §5.6.3, it is now necessary to point out what are the drivers that determine the choice of the strategy.

5.5.3. Facing risks: strategies and "*common sense*"

The decision about which strategy to adopt is a mix of many elements. Beside objective observation of the environment, it also comes to the firm-specific risk-aversion of the top management. Even though every firm has their unique strategy mix to face risks, there certainly are some "universal principles" that should drive such decisions.

The first "common sense" principle is that a firm should not bear a risk that can't tolerate. Even though the concept is quite simple, the ability of the firm to tolerate a risk (and a negative outcome) is actually measurable and should drive every risk-related decision. On one hand, transferring or mitigating risk is a cost that erodes profit margin; on the other hand, some risks are just too big to bear and the downside could be catastrophic enough to endanger the survival of the firm. A simple qualitative scale, like the one shown in §3.5.2, gives a clear idea: if the potential loss is too catastrophic (for example a natural disaster that could destroy the whole firm), then transferring such risk is the right decision.

The second principle has to do with the thesis we want to prove throughout this work: if price is the summary of the risks that the firm is bearing, then a firm should bear only the risks that will provide a reward. After assessing all the risks and all the eventual transferring or mitigating options available, the firm must recognize which risks, if retained, provide value to the firm and which ones don't. It is a common sense principle that if bearing a too high risk is

[47] This example refers to **operational techniques** to hedge transaction exposure. This technique and others will be discussed in §5.6.2.

counterproductive then the firm shouldn't bear it, but sometimes the "reward" for bearing a risk is mere survival. In the previous paragraph we pointed out that if a firm decides not to deal with foreign currency, is informally transferring the transactional exposure risk to the counterpart. The industrial distributors' industry, today, is more "global" than "local", value chains are dislocated all over the world, and commercial connections between different countries (and continents) are stronger than ever: the competitive pressure demands the firm to be able to trade in different currencies; deciding to trade only using the national currency may erode the firm's competitive advantage enough to endanger the survival of the firm itself.

Setting these theoretic principles prepares the ground for the examination of the actual hedging instruments available on the market, with a close eye to the currency exposure hedging, since this risk area is crucial for many reasons. First, as we have pointed out in §5.3, no one is exempted from currency exposure, but this especially true for industrial distributors due to their area of business: distributors typically don't manage the production of goods, and since their occupation is to buy and resell, the currency aspect of these transactions is vital to define the profit margin of the transactions. Second, as we introduced in §5.3.1 and as we will further examine in §5.6, the approach to currency exposure management is not as obvious as it was historically formulated: more recent studies stress the need to rethink currency exposure management towards a more ongoing and integrated perspective.

5.6. Currency exposure management

As we have introduced in §5.5, there are several tools to approach currency exposure.
These tools mainly divide into two categories: **operational techniques** and **financial contracts**.
Although the purpose is similar, operational techniques and financial contracts are completely different in concept and realization. Operational techniques are, indeed, techniques that can be found **inside** the organization as part of the overall firm's strategy, and, by definition, must be planned in advance to be realized. On the other hand, financial contracts are **outside** the organization and are provided by third parties on the financial market. A firm may include the use of financial products in the planning phase, but is also possible to recur to the financial market whenever the firm needs to. The different nature of the two hedging techniques point out a structural difference of the strategy that motivates the choice of the technique. To better understand the drivers of such decisions, it is necessary to define the complex relationship

between pricing policies and currency exposure, since currency exposure (and the method adopted to hedge it) is crucial to decide the final price. After setting such theoretic principles, financial contracts are introduced in §5.6.2 and operational techniques in §5.6.3.

5.6.1. Relationship between currency exposure and the final price

The key word to understand the relationship between currency exposure and the final price is "**unexpected**".

The motive of this whole work is that price can be seen as the summary of all the risks that a firm is bearing: since financial contracts are outside the organization, (in contrast with operational techniques that are inside the pricing policy umbrella), the pricing policies of the firm should already include currency exposure as a deciding factor, together with all the other risk factors that we have analyzed in §3. We have shown how no firm is immune from currency exposure; however, firms that are constantly subject to transactional (or translation) exposure should be equipped with a set of efficient strategies and tools to predict, assess and correctly manage such risk in advance, and such strategies and tools should be formalized in a consistent plan. As Bertinetti (Bertinetti:2006) expresses in his work, "exposure" does not refer to all the fluctuations of external variables that may impact the firm's performance, but only the fluctuations that were **not** predicted and incorporated in the firm's plan. Indeed, the ability of the firm to face currency exposure, just as any other risk, lies in a consistent and reliable plan made in advance, that should include currency exposure as a risk factor that the final price should express. As we pointed out, financial products to hedge transactions are available on the market at any time and don't need to be planned in advance, but the price of such products, if not previously assessed, erodes profit margins. Thus, the important factor is not the price of the financial product itself, but whether or not such cost was originally predicted. The accuracy and consistency of the plan made in advance (a plan that also formalizes the pricing policy) is the factor that determines whether a financial product will be an additional cost or not. Knowing that there is the possibility to use financial tools to hedge transactions is certainly reassuring, but most of the work must be done in advance when planning the firm's activities, since the tools we are about to introduce are expensive in terms of time and resources. In a nutshell, if the currency exposure is correctly assessed in advance, it will not be an additional cost that erodes profit margin but instead, the final price itself will express the currency exposure as an other risk factor.

This thesis introduces an important corollary: in §5.3.1 we stressed the fact that currency exposure management should adopt an ongoing perspective; in addition to that, it should also be **integrated** with other decision making areas, and not confined to the financial department

as it historically was. The level of assessed currency exposure should, as any other risk variable, be an other driver of the decisions that determine the final price or pricing policies. If the currency exposure management is integrated in the firm overall strategy, the anticipated assessment of the amount of exposure will be absorbed in the final price; if the currency exposure management is detached from the overall planning, the chances of increasing the (additional) costs of hedging immediately rise.

This said, the discussions of the next paragraphs and the tools to be introduced mainly address **transactional exposure**, but as we have mentioned in §5.3, the boundaries between different exposure areas are rather blurred, and one action may result in all three types of exposure; because of this, we will use the term "currency exposure" and not "transactional exposure".

5.6.2. Operational techniques

Before addressing to the financial market, there are some actions that the firm can take in order to hedge (or even **prevent**) currency exposure. Basing on Eun and Resnick[48] classification, we now introduce the most common operational techniques.

We already mentioned that **choosing the invoice currency** (for example, avoiding to trade using foreign currencies: see §5.5.2) is a drastic way to avoid currency exposure, but we also pointed out that if this strategy might be sustainable in other businesses (for example local retailers), industrial distributors, especially at an international level, can't afford to adopt such strategy. Instead of completely transferring the currency exposure to the other party, the firms contracting the deal may decide to share the currency exposure by invoicing the bill in different currencies (for example, from the seller point of view, half of the bill in the domestic currency and the other half in the currency of the buyer). Although this practice is less extreme than completely avoiding foreign currencies, the competitive pressure is likely to still arise, and in fact, such strategy only results in reducing the exposure, not mitigating nor hedging.

The **lead and lag** technique bases its ground on some detailed knowledge about different currencies and the projections about their volatility: "lead" means paying or collecting early, while "lag" means paying or collecting late. The advantage would be to lead receivables invoiced in "weak currencies", which means currencies whose volatility is high and are likely to depreciate, and to lag receivables invoiced in "hard currencies", which means currencies whose volatility is low and are likely to appreciate. Although worth mentioning, this

[48] Eun, C. S., & Resnick, B. G. (2007). *International financial management*. Boston: McGraw-Hill/Irwin.

technique has many disadvantages: first, the advantages for the firm attempting to lead/lag immediately translate into disadvantages for the counterpart, which may not be likely to accept. Second, this strategy relies on projections that might not realize in the future: if this is the case, the use of this strategy may even become counterproductive.

The **price adjustments** that we discussed in §2.4, especially discounts (cfr. §2.4.1), can also be seen as an operational way to try to prevent exposure risk. By offering a discount for an early payment, the firm protects itself from variations that can occur in the time-lapse between the invoice and the effective payment, while favouring the buyer at the same time. Of course, in order to be effective, the discount must not exceed the sum that would be invested in hedging the transaction or the possible loss after an unfavourable movement in the forex market, but if well-thought it is a good tool: such discounts protect the firm from risks while pushing sales.

5.6.3. Financial contracts

Unlike some operational techniques, financial products don't prevent currency exposure: instead, they **mitigate** the uncertainty of possible outcomes.

Based on Eun and Resnick classification, we now introduce the most common financial contracts available to hedge currency exposure.

The **forward market hedge** allows the firm to eliminate its exchange risk exposure by selling (or buying) its foreign currency receivable (or payables). To make an example: if a US firm has invoiced a €1000 bill to be paid in three months, the firm may sell forward the account payable to a bank in exchange for the same amount converted in US$ at the current spot rate. After three months, when the European firm pays the account receivable, the US firm will deliver €1000 to the bank, and in return it will receive the amount of US$ according to the spot rate that was agreed on the date of stipulation of the contract with the bank. Although this strategy does in fact annul the exchange rate exposure, it doesn't allow the firm to benefit from an eventual up-side risk.

The **money market hedge** is similar but instead of selling, it involves borrowing (or lending) the amount of foreign currency invoice in domestic and foreign money markets in order to hedge foreign currency receivable (or payables). Reconnecting to the previous example, the US firm can contract a loan of the equivalent (considering the interest rate of the bank) in € of the 1000€ account receivable, then convert the sum in US$ and invest it at the dollar interest rate, matching in fact assets and liabilities in the same currency. The maturity date of the loan must in fact be the same as the maturity date of the sale contract. If these conditions stand, when the European firm pays the invoice, the US firm uses the gains of the receivable account

to pay the loan to the European bank, and the interest rate lost in the loan should match the interest rate gained by investing the loan in the national market. This technique is, in theory, self financing (assuming there are no transaction costs), but lays its base on the Interest Rate Parity conditions, that are not always respected: if this is the case, the transaction is not hedged and profit or loss scenarios arise.

Unlike the techniques that we have just mentioned, which eliminate the currency exposure but also prevent the firm from benefiting of an eventual up-side risk, **options contracts** give the right (but not the obligation) to buy or sell a given quantity of an asset at a specified price at some time in the future[49]. If the option gives the right to but an asset, it is a call option; if it gives the right to sell, it is a put option. To better understand the option market, let's reconnect to the example regarding the forward market hedge: with that contract, the firm has the security of the expected outcome, but gives up the opportunity to receive a higher outcome; with an option contract, the firm has the security of a minimum outcome (in cases that would provide a minor outcome, the firm would likely exercise the option), but if the conditions are favourable and the outcome exceeds the forecast, then the firm will renounce the option to benefit from the up-side risk.

Theory without practice is certainly not useless, but does not express its true potential. In chapter §2 we skimmed through the general principles of pricing policies, balancing between marketing inputs and even some fundamentals of neoclassic economics. In chapter §3 we introduced the ERM practices and we tried to integrate risk management with price formulation. In chapter §4 we started to narrow our scope of investigation on a more specific industry, the distribution industry, subsequently focusing on industrial distribution in this chapter. The next chapter will be as practical as it can be, dealing with one specific firm and the way this firm handles price decisions with regard to risk aspects. In the next chapter we will actually subsequently focusing on industrial distribution in this chapter. The next chapter will be as practical as it can be, dealing with one specific firm and the way this firm handles price decisions with regard to risk aspects. In the next chapter we will see if the theory we discussed actually takes place in a regular firm.

[49] Eun, C. S., & Resnick, B. G. (2007). International financial management. Boston: McGraw-Hill/Irwin

6. The concrete case of Maxvouge International, a Chinese industrial distribution firm

From 27/04/2017 to 17/07/2017 I had the chance to perform a University stage at the firm Maxvogue International Trading Co., ltd.
Besides perfecting my skills in Chinese language, my mansions included assisting the merchandise manager, and doing research for this work. My experience at Maxvouge International was very fruitful, I was able to grasp a lot of knowledge about Chinese business culture and their practices while observing their unique way to handle everyday operations.

During this chapter, we will see how theoretical principles are (or are not) applied to concrete business situations, especially in a strong and different culture like the Chinese one.

6.1. Maxvogue International: an overview

Before analyzing Maxvougue International's effective pricing policy, it is logical to introduce the firm as a whole.
Maxvougue International Trading Co., ltd. was established in Shanghai in 2004 by Guo Qing Wang and Zhen Tian. In 1992 Deng XiaoPing had introduced the concept of "socialist market economy" and the government was going in a more liberal direction, as for the first time in the history of the People's Republic of China the private (opposed to stately owned) sector was gaining importance. Indeed, international relationships and exchanges were becoming easier for China, and the gradual opening of Chinese markets, which peaked in 2001 with the inclusion of China in the WTO, surely encouraged international commerce. The founder members caught this political opportunity to found a firm that was envisioned since the beginning as an international export firm.
Wang and Tian took advantage of their knowledge in the textile sector and their pre-existent relationships with the future suppliers to found their business: **import and export of fabric**.
The initial challenges of the firm were to find a long-lasting base of customer relationships, navigating between the firm competition in the sector and the common conception that

regarded Chinese products as low-quality items. At the beginning, due to political and market factors, the average pricing of fabric in China was below international standards, which surely encouraged exports.

Nowadays, price's average is rising in China, due to salary augmentation and other political and economic factors, and new challenges come forward for Chinese firms.

6.1.1. Maxvogue International business model

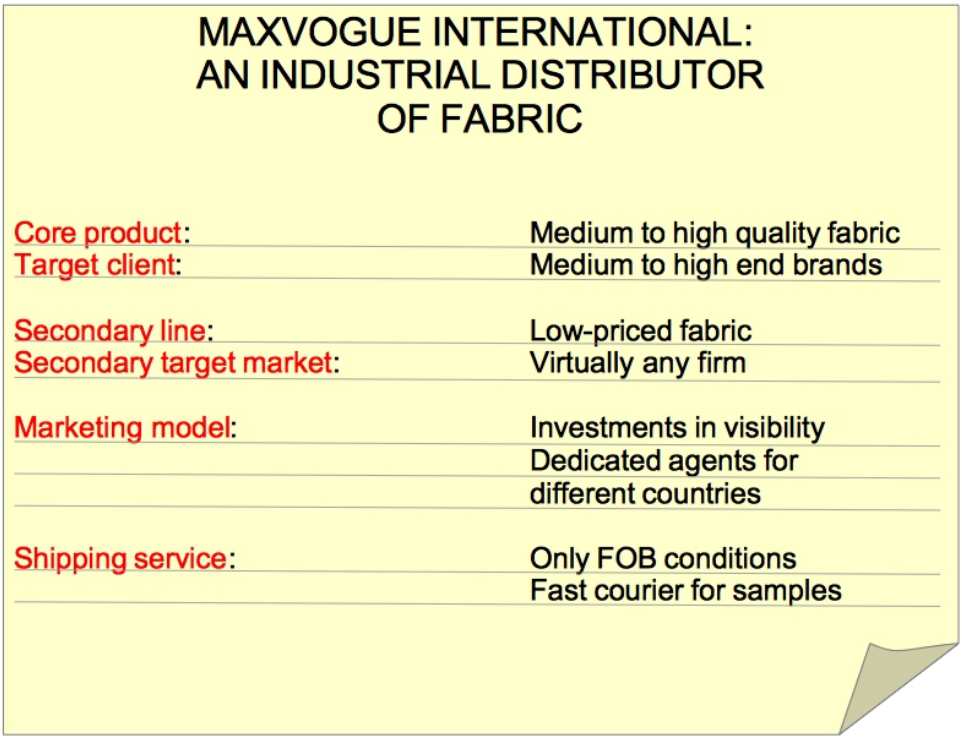

Exhibit 12: Maxvogue International's business model

Maxvogue International fits perfectly into the industrial distributors' category, and performs most of the typical activities that we described in §4.1.1: first, the perform an assorting function, by gathering the fabrics' "collection": this is in fact the core business of the firm, and Maxvogue International is widely recognized for interpreting the trends in advance while not settling down for low quality. This function is particularly delicate and is mainly performed by the figure of Zhen Tian, which was my tutor during the stage activity.

Second, they perform a storing function: the firm owns a warehouse equipped with a quality check office, that assures that the fabric don't suffer any damage.

The **marketing activities** for the firm include different sales agents for every country where the firm is present: therefore, the agent can become closely connected to the specific market that is covering. In addition to that, the firm participates to famous international fairs to reinforce the positive image of the brand.

Maxvogue International core product is **medium-to-high end fabric**, therefore the target client is a medium-to-high end brand. In order to achieve this status, Maxvogue International invests in visibility and marketing, favouring personal and long-lasting relationship with clients. However, they also engage in **low-price low-quality fabric**, encouraging very large orders, also due to the very low prices of these fabrics. The smart choice of also concentrating efforts in a **secondary target market** diversifies the firm's potential with the purpose of smoothing sales and revenues.

Speaking of clients, as we already stressed, the large majority (99%, as the firm claims) of Maxvogue International's clients are foreign: a solid 40% of total sales is made in the Eurozone, specifically Spain (top client: Zara) and France (top clients: Sandro, Maje, Paule Ka); 20% of sales are made in the United Kingdom (top clients: Topshop, Next, River Island, Hobbs, Warehouse, Phazeeight); 35% of sales are shipped to the United States (top clients: Diane von Furstenburg, J. Crew, Madewell, Joie, 7 for all mankind); in the remaining 5%, less than 1% of sales is made within national borders. Despite the miscellaneous mix of clients, the foreign country of provenance of the client does not have implications on the choice of the currency: in line with the international standards[50], international deals are made using US Dollars; only the few national transactions take place using Renminbi.

The firm's policy is to **delegate the shipping** process to the buyer, which has some price-related consequences for the customer: we will discuss these consequences in §6.3.3 in larger detail. However, the firm does indeed recur to shipping companies: besides the transportation from the firm's warehouse to the warehouse appointed by the client, samples and intra-firm small shipments are made by the well-known courier DHL[51].

Today, Maxvogue International is dislocated in three offices: in Shanghai there is the showroom and the offices dedicated to marketing, customer relationship and merchandising; the financial and shipment office is located in Qingdao, and the warehouse and quality control office is in Shaoxing.

[50] Almost every firm in the industry (fabric import-export) only trades in USD.
[51] https://www.logistics.dhl/it-it/home.html

6.1.2. Maxvogue International SWOT analysis

After being in the market for almost 15 years, Maxvogue International has indeed reinforced its strengths and turned them into long-lasting competitive advantage. Weaknesses and future threats still remain, but there are also growth opportunities to be grasped.
Recalling §5.1 concept of SWOT analysis, we want to start our investigations on Maxvogue International with a SWOT analysis of the firm.

The core strength of Maxvogue International is definitely its **assortment** function: the validity and innovative force of the seasonal collection makes or breaks the business period; to use the sales manager's words, the firm is specialized in "fancy fabrics", and the collection must find a balance between complying with the season's major trends, and having a spark of innovation and uniqueness. The success of Maxvogue International is also due to the management ability in accomplishing this task.
An other strength is a good and long-lasting relationship with suppliers, which guarantees on time shipping and minimum quality issues.
Maxvogue International boasts a strong international presence, which definitely is a strength point: experience in the field and recognition in the field are valuable to the firm.
Maxvogue International also has a defined and well-established contract culture: we will deepen this point in §6.3.5.
An other strength lies in the employees that work in the marketing and merchandise office in Shanghai: their language skills are remarkable, which is not so common.
The weaknesses of Maxvogue International lie in the corporate culture, or if we may, in the lack of it. The different departments of the firm work pretty isolated, there is very little integration, and the figures of the owners (Wang, who deals with more practical aspects of the firm, and Tian, the "creative mind" of the firm) prevail over all the others. There is no codified and consistent ERM program, and only few employees actually have a solid economic background. Transferring shipping costs and responsibility to the client could be seen as an insufficient sale service and therefore as a weakness: nevertheless, this practice is pretty common in the industry, so it seems exaggerated to label it as a negative factor for the firm.

Many opportunities that the market has to offer are already included in Maxvogue International business model: international fairs are an excellent visibility opportunity; in fact, the firm participates to many of them, especially in Paris (Texworld Paris[52] is a great

[52] https://texworld-paris.fr.messefrankfurt.com/paris/en.html

example of the visibility the firm is looking for, and the prestige of the fair reinforces the image of Maxvogue International in a very positive way). An other opportunity was the growth of the "fast fashion" market: Maxvogue International organized its business model to fulfil this new demand quickly and efficiently.

Threats are found mostly on the competitive field: many similar firms are rising, the quality average is also improving, and it may become difficult to maintain the competitive advantage that the firm has matured over the years.
It is worth to cautiously mention some possible future political risks: on one hand, the wealth redistribution program[53] that the actual President of PRC Xi JinPing is carrying can result in higher salaries, which will translate in higher costs. Even though this would be a huge step forward for the Chinese society, such cost increase must be assessed in advance so that it does not erode the firm's competitive advantage. On the other hand, an other political risk could be the hash foreign policy that the President on the United States Donald Trump is trying to implement: the two countries have informally engaged in a trade war[54], and this could have negative impact on Chinese firms. Maxvogue International has a significant percentage of the total sales directed to the US: this possible threat should not be ignored.

[53] Xi JinPing claimed that tackling inequality is becoming as important as growth. Source: https://www.bloomberg.com/news/articles/2017-10-24/xi-shifts-communist-dogma-that-drove-30-year-china-economic-boom
[54] Source: https://www.forbes.com/sites/charleswallace1/2018/07/10/trump-raises-stakes-in-china-trade-war/#3229ee1ded85

MAXVOGUE INTERNATIONAL	
STRENGHTS • Valid collections • Strong international presence • Good relationship with suppliers • Good contract culture • Remarkable languge skills	WEAKNESSES • Lack of corporate culture • Limited knowledge of economics • No ERM system • Lack of integration between different departments • Limiting selling conditions*
OPPORTUNITIES • Visibility (*international fairs*) • "Fast fashion" industry rising	THREATS • Rising of competitors • Political risks

Exhibit 13: Maxvogue International's SWOT analysis

With regard to the industrial distributors' general SWOT analysis that we presented in §5.1, we notice some similarities as well as some differences:

- The points of strength, that in the general SWOT were focused on client management and efficient delivery, are also found in Maxvogue International, with the addition of some firm-specific aspects such as the validity of their collections and the skills of the employees.
- Maxvogue International does not have the typical industrial distributors' weaknesses, such as inefficient marketing or a limited supply chain: in fact, these actually represent some points of strength for the firm, which has an effective marketing plan and a well-established supply chain. On the other hand, Maxvogue International's weaknesses are firm-specific, and mostly regard the corporate culture.
- Maxvogue International's future opportunities comply with the general trends of the industrial distributors' industry.
- Maxvogue International handles shifts in market trends pretty smoothly, also due to the reactivity of the management and of the suppliers. Seasonal demand is also not a big issue for the firm: even though sales are not smooth, and even though the workload

is very unequal depending on the month, the firm does not worry about these factors. Maxvogue International's threats are to be found in the political and competitive environment.

In the light of these considerations, we can affirm that Maxvogue International shares many of the characteristics that we found when investigating the industry of industrial distributors, and the unique factors of the firm serve more as a strength rather than a weakness.

The factors that we just presented have an indirect impact on price decisions, since they impact the firm's overall strategy directly. As we have stressed throughout §2 and §3, a consistent and comprehensive business strategy results in a better formulated pricing strategy.

6.2. Maxvogue International's risk management approach

In §6.1.2 we introduced the fact that Maxvogue International does not dispose of a codified and standardized ERM program. Nevertheless, the firm does indeed perceive risks and takes actions to counteract them: let us analyze Maxvogue International's approach to risk management before moving on to the pricing policy they adopt.

6.2.1. Maxvogue International's risk dealing strategy

Since the firm has no codified ERM system, the identification and treatment process of possible risk is **experience based**.

Besides natural uncertainties, against which the firm has insurance products, Maxvogue International focuses its risk management efforts mainly in two areas: **competition** and **product risks**.

Indeed, the top management actually perceives competition as the higher and most important risk to counteract: the sales director Zhen Tian claims in fact that "you must have the right collection at the competitive price on time"; this claim sums up the firm's business model, on which the success of the firm itself is based. The management is fully aware of the competitive environment and keeps concentrating efforts in knowing the competition and anticipating competitor's moves. So even if is not formally codified, Maxvogue International has a two-way plan to counteract competition risk: on one hand, by constantly screening the competitive environment and being up-to-date about competitor's moves and market trends; on the other

hand, by always perfecting and investing on an impeccable business model, that can assure satisfied clients and smoothness in doing business.

The other major risk that the firm perceives are those concerning the quality of the product: as we introduced earlier in this chapter, to some extent Chinese products and materials are seen with some mistrust about quality and credibleness; Maxvogue International has worked hard to build a positive and prestigious firm and product image, so quality issues could really endanger everything the firm has worked for, also because of this feeling of suspiciousness towards Chinese products. Therefore, Maxvogue International invests in continuous monitoring of suppliers, products and also everything that concerns shipment packaging. As we introduced in §6.1.1, the firm disposes of a quality check office in Shaoxing right where the warehouse is located, so that quality check can be immediate (for example before a shipping) and continuous (quality checks are done periodically to assess the integrity of the fabric even without an order).

With regard to **speculative risks**, the firm only uses **operational techniques** to counteract them, especially during the draft of the contract[55]. The techniques are certainly effective to some extent, since they prevent the firm from incurring in major losses, but this way the firm misses the chance to benefit from such risks.

[55] This point will be discussed in §6.3.5

Exhibit 14: Maxvogue International's risk management approach

The **experience-based** factor of Maxvogue International's risk management, besides having its roots in Chinese culture[56], has some daily implications: experience is the most valuable skill recognized in the firm, the youngs learn from the olds, supervisors teach the new employees the tacit knowledge they built during the years in the field. To some extent, Maxvogue International's risk management, together with other aspects of the firm, is not formally codified but is orally transmitted from old to new generations. When I held conversations with the sales manager Zhen Tian about the firm's risk management approach, instead of presenting general guidelines of the firm's policy, Zhen Tian explained concrete cases of risk that the firm had experienced, errors and successes that actually took place, and how the firm learnt from those experiences forming an "oral database" of concrete products, clients and situations.

[56] This point will be discussed in §7.3.2

6.3. Maxvogue International's pricing policy

According to the theoretical background that we have set in the previous chapter, we will now analyze Maxvogue International pricing policy, from the decision making process, to the strategies adopted, to final prices.

6.3.1. Price related decisions: where do they take place?

As we introduced in §6.1.2, Maxvogue International's corporate culture gives large extent of power (and responsibility) to the top management: pricing decisions are a joint effort of the two owners, since they approach the issue from different points of view.

The pricing strategies have financial inputs from Wang and competitive inputs from Tian: as the first makes sure that the pricing provides enough profit not to endanger the firm, the second makes sure that prices are aligned with the market and provide competitive advantage.

This synergy gives birth to an effective pricing strategy, but a clarification is necessary: the role of Wang serves as "supervision", while the majority of the decision making process is in the hands of Tian. This factor becomes intuitive when we think of Maxvogue International's business model: the collections are made by Zhen Tian, and since the gathering of the right materials comes before pricing decisions, Tian has the *de facto* power to establish all the prices. Moreover, since Tian is the head of public relations, he handles most part of negotiations: as we will deepen later in this chapter, negotiations play a determinant role in the final price decision.

Other departments are not involved in price decisions. This clarification may sound odd in an occidental, well established corporate culture, but as we will deepen in §7.3.2, Chinese business culture is far distant from ours. In fact, Chinese corporate culture is extremely hierarchical, and the idea that the top manager is a "*primus inter pares*" in the firm is very far from reality in China. When being asked, Zhen Tian claimed that "only the owner of the firm has the right to decide the pricing policy", underlying again the strongly pyramidal structure of the firm. He also claimed that "the financial department is not involved in price decisions", revealing again the lack of integration between departments that we discussed in §6.2.1.

It must be said that the overall pricing strategy of Maxvogue International is indeed aligned with a strategy: the overall business model of the firm. The main points that the management considers during the price formulation process are the target market and the target client. Maxvogue International is very conscious of its client segmentation, and every decision taken aims to form and maintain a consistent business model. As we will discuss in the next

paragraph, one of the main point in order to decide price is the existing competition in the field, and decisions are very market-driven.

6.3.2. Main pricing strategies

Maxvogue International's overall pricing policy is a combination of two main strategies: the "price-to-market" approach and the standard mark-up.

As we said in the previous paragraph, one of the main risks perceived by Maxvogue International is competition, so prices must be aligned with the market standards and not differ too much from the main trend: if the price is too low, it will be interpreted as a sign of poor quality; if the price is too high, clients will be likely to look for less expensive options.

Of course, Maxvogue International disposes of a very extensive portfolio of choices, and every fabric is priced individually, but here are some broad examples of different materials, and their respective price point:

Medium-to-high end fabric:

- Cotton: 3$ X mq
- Cupro: 5$ X mq
- Silk: from 10$ X mq to 15$ X mq
- Sequined fabric: 13$ X mq
- Tweed (wool): 6$ X mq

These are just a few examples, but this helps us to frame Maxvogue International into a more or less defined price point. The firm's prices are definitely not the cheapest of the market, but aligned with the target market, target client's expectation and, more in general, they are aligned with the firm's strategy. Very cheaper options are available, but since Maxvogue International focuses on the quality, the target client is willing to pay a higher price in exchange for a higher-end product. Ultimately, we can say that the pricing point of Maxvogue International is aligned with the ones of similar firms that cover similar markets.

About Maxvogue International's secondary line, prices undergo a totally different pricing strategy, but are still aligned with the market's standards. The main example to make regards all types of polyester: this fabric is extremely inexpensive, prices vary from 0.7$ X mq to a vary maximum 2$ X mq, but the average is around 1$ X mq. China is a great polyester exporter, so Maxvogue International exploits the easy availability of this fabric to create its second low-end line, whose quality and price is aligned with such market.

On the other hand, while making sure that prices are aligned with the market standard, the firm has to make sure that prices also provide enough profit to survive. In order to do so, the firm uses a mix of two **mark-up** formulation strategies: one is adding a certain percentage of total costs, which for the **medium-to-high end** line is around 30%-35% (example: Price= Total Costs + 30% of Total Costs); the other one is not linked to a percentage but sets a monetary profit goal (example: sequined fabric must provide at least 8¥ x mq of profit).
Of course, the percentage method is more reliable, but the firm uses the second technique in large amount of cases[57].
This percentage of mark-up is more or less in line with the industry trends, especially if we consider the target market and the quality of the products sold: as we pointed out in §2.2.1, "prestige" and "luxurious" items (as an embroidered silk would be) may be priced above average, due to their unique characteristics. Let's not forget Maxvogue International's target market, which is mainly composed by medium-to-high end firms.
On Maxvogue International's **low-end line**, the cost mark-up is the only strategy adopted, and the mark-up ercentag does not go over 15%. How does this mark-up provide a profit, and how is it convenient to the firm? First of all, being a low-end market, clients expect a low price: a higher mark-up would be a deterrent for the buyers. Second, the minimum order of low-quality fabrics is much higher than the one of the medium-high line: if for the medium-high fabrics the minimum order quantity is 1.000 mq, for the low end line the minimum order quantity can reach 10.000 mq: this requirement, although might seem a very strict selling condition[58], actually brings advantages to both parties. As we will discuss in the next paragraph, the price quoted by the firm may suffer from additional costs: freight, insurance and transportation. From a buyer's point of view, such high minimum order can assure very low transportation costs; from the seller's perspective, the firm can benefit from scale and quantity economy, offsetting the low profit margin.

The success of these techniques lies in an efficient assortment: not only must the collection be trendy and cutting edge; the collection must have a price low enough to allow a sufficient mark up to result in the final price. The relationship with suppliers here becomes crucial for the firm, and the fact that such trust-based relationship are one of Maxvogue International's points of strength is not to underestimate, especially during price formulation.

[57] This technique is particularly adopted during negotiations, that will be discussed in §6.3.5.
[58] This topic is further discussed in §6.3.3.

Other important points are that the firm does **not** practice discounts or allowances[59], but its prices are indeed **dynamic** depending on the currency rate exchange, quoting Zhen Tian's words, under some specific conditions. The concrete strategies regarding foreign currency, and their implications on the firm as a whole, will be discussed later in the next paragraph.
An other point that will be further discussed in greater detail is that, besides the "official" quoted prices, **negotiations** have a significant impact on the final price. This factor, besides having deep roots in Chinese business culture, impacts Maxvogue International daily: negotiations are often long and require a business trip of either one of the parties or even both, but the results of such negotiations are almost always positive for both sides. Negotiations obviously touch points such as order quantity, terms of payment, shipping date and so forth: the mix of all these factors determines if the price will be lower or even higher.
Ultimately, the firm claims that "prices will be **dynamic** according to the price of the materials and the currency exchange rate": this claim has important operative consequences. As the strictly currency-related aspects will be discussed in §6.3.4, the operative aspects are pretty clear: despite the seasonal nature of Maxvogue International's business, which could lead to a standard price quotation at the beginning of every seasonal period, the firm chooses a dynamic approach, which means constantly revising and adjusting prices if needed. Besides being an other prove that the firm only uses operational techniques to counteract speculative risks, this approach puts the focus on the negotiation process once again: prices are indeed decided at the beginning of the season, but are perfected during negotiations or right before them, when the interest of a client forces the firm to check if the quoted price will still provide a decent profit.

6.3.3. Selling conditions

It is useful to remind that the final price does not only reflect the value of the goods, but also all of those intangible services that make the buying process easy and pleasant for the customer: these services are under the "selling conditions" umbrella. Of course, these services are costly to the seller, and depending on which services the customer demands, the final price will be impacted.
This said, two other factors have direct implications on Maxvogue International's prices: shipment and responsibility of the goods. The firm quotes mainly (in more than 90% of the cases, with some rare exceptions) FOB[60] prices, which has some serious consequences: the

[59] The extremely rare conditions under which a discount is granted are relegated to the negotiation process, discussed in §6.3.5. The firm's policy about allowances, on the other hand, is very strict: Maxvogue International doesn't practice allowances.
[60] See §5.4 for detailed explanation of Incoterms and these types of contract.

buyer is in charge of both transportation costs, freight costs and also receives the responsibility of the goods as soon as the goods reach the appointed warehouse. This policy means a considerable mark-up to the final price for the buyer: freight costs vary from country to country and can reach remarkable percentage of the total order, and such percentage has to be added to the final price, although not included in Maxvogue International's quotations; the shipping costs, on the other hand, strongly depend on order quantity: if an order can fill a whole container, the price will be relatively low; instead, is the order doesn't reach the container amount and a groupage must be made, than the shipping price may suffer a 20-30% increase. The only transportation that Maxvogue International currently takes care of if from the firm's warehouse to the warehouse that the buyer has appointed: this transport is made by truck, and the firm claims that such little cost does not impact the final price.

Speaking of selling conditions, a common clause in Maxvogue International's contracts is the letter of credit as a form of "receivables collecting insurance": this practice is indeed unfavourable for the buyer, who has to bear additional costs for this service from the bank, but as it is internationally common and accepted, Maxvogue International claims that the use of letters of credit does not affect negatively total sales nor the ease of negotiations.

Depending on the type of contract, payments are made between 30 and 120 days **after shipping**, which is a considerable amount of time, especially considering the order placement date as we did in the example of §5.3.1. Besides having some serious consequences on currency exposure aspects, that we will discuss in the next paragraph, we can safely say that these are very flexible payment terms: the firm handles these late payments pretty efficiently without having to deal with financial stress, and such flexible terms surely favour the buyers, which will possibly benefit from this policy, with the effect of favourable selling conditions that may push sales.

In a nutshell, Maxvogue International offers pretty standard selling conditions according to the trends of the industry: not all exporting firms also take charge of freight and transportation costs, for a discrete number of reasons. First, every country has their own freight and control system: knowing and mastering the differences that exist across the world would mean extensive researches and costs for the seller, while an importing firm has already the knowledge needed to proceed. About the transportation issue, some firms do indeed provide such service, but Maxvogue International's majority of orders (especially those that concern the medium-high end fabrics) don't reach the minimum quantity for a whole container, so the shipping expenses would have a 20% up to 30% increase.

We will now discuss the currency issue, which while being "dictated" by international standards, leaves room for interesting consideration, especially with regard to the firm's policy toward the issue and how currency affects the final price.

6.3.4. Maxvogue International currency management

As we introduced in §6.1.1, the international standard, although not formally codified, imposes the use of USD to trade fabric. This means that even though Maxvogue International's clients are from all over the world, there is not room left for other policies, and deviations from the industry trends may result in less competitive advantage: on 99% of the cases, the currency used is USD; only the few national trades are made using Renminbi[61].

In §6.2.1 we mentioned the fact that the firm deals with speculative risks with the use of mainly operational techniques, without resorting to financial contracts: let's see in detail Maxvogue International's pricing policy with regard to foreign currency.

First of all, the firm definitely claims to take foreign currency into consideration when taking price decisions. Since most of the transactions are made in USD, prices are indeed already quoted in USD. On the other hand, the firm's costs are expressed in RMB: this means that a conversion is made at one point, but the question is not "when", but actually "how often".

If the firm only quoted one static price at the beginning of the seasonal period, the chances to incur in losses would be very high, as fluctuations in exchange rate would be neglected: on the contrary, in §6.3.2 we talked about Maxvogue International's **dynamic pricing policy**, underlining the fact that prices "change along with the cost of the materials and the currency exchange rate". By including the currency aspect of Maxvogue International's pricing policy equation we finally see the complete picture: the initial price quotation in USD, obtained by converting the fabric's price expressed in RMB at the current spot rate, is just the beginning of price formation, and definitely not the final price.

If we were to establish a timeline, the result would be only partial: of course, the first step would be the gathering of the materials (whose price is expressed in Renminbi, or CNY), which would be followed by a conversion of the price in USD. If this were the case, the pricing policy would be very ineffective for the reasons that we brought up; instead, the dynamic nature of Maxvogue International's prices assure a constant price revision.

[61] This unwritten rule is true for the great majority of industrial distributors of fabric: it goes without saying, that industrial distributors from the Eurozone will use Euros to fulfil their payments within the borders of the Eurozone; there is no need to use an other currency when both parties are from the same currency zone.

The relevant question therefore becomes: when does the price revision occur? The answer is: during negotiations. We have introduced the importance of negotiations in §6.3.2: the next paragraph will clear the extent to which negotiations really impact the final price.

6.3.5. The role of negotiations

Everything that we have discussed so far about Maxvogue International's pricing policy is nothing but a starting point for arriving to the final price: the determining factor is the process of negotiations, that is crucial to Maxvogue International, as well as many other firms in this sector.

For instance, Maxvogue International strongly relies on effective negotiations, nothing is left to chance, and the decisions taken during the negotiations have direct impact on price.

The unique combination of three variables has the most impact: order quantity, expected shipment and terms of payment.

In front of a very large order quantity, the firm may be willing to grant up to a 2% of discount (it must be remarked that such conditions are extremely rare). Meanwhile, an early shipment could result in a higher final price, and consequentially, late or flexible shipment could mean a more favourable price. Ultimately, although the use of a letter of credit as a payment term is almost not negotiable, safer payment terms for the seller encourage positive behaviour from the latter. The mix of all these variables is impossible to codify, especially because they hardly translate into a specific discount (or surcharge): for instance, the most common practice is to "bargain": the seller may be willing to accept a later payment in the light of a higher order quantity; the buyer may be willing to pay early in exchange for early shipment or a little discount, and so forth.

It is now clear that the lines of the quoted price are quite blurred, different conditions result in different prices, and the "unstable" nature of Maxvogue International's prices finds its roots in many industry-specific, firm-specific, and cultural aspects.

First of all, very large order quantities often result in long negotiations and very specific contracts, and not only is this true across Maxvogue International's industry, but also for every deal that involve significant quantities of goods.

If we focus on Maxvogue International, we can say that their specific negotiation culture is deeply rooted in the firm's way of doing business: they are very meticulous when drafting a contract, to quote Tian's words: "everything must be settled before the order placement"; the experience "database" accumulated by the firm imposes that every clause is very narrow and specific for the deal.

The difficulties multiply when we include the currency aspect into the negotiation process: since the negotiation moment is so crucial to determine the final price, and since prices will be "dynamic according to currency exchange rate's changes", the currency impact is very strong on the price formulation.

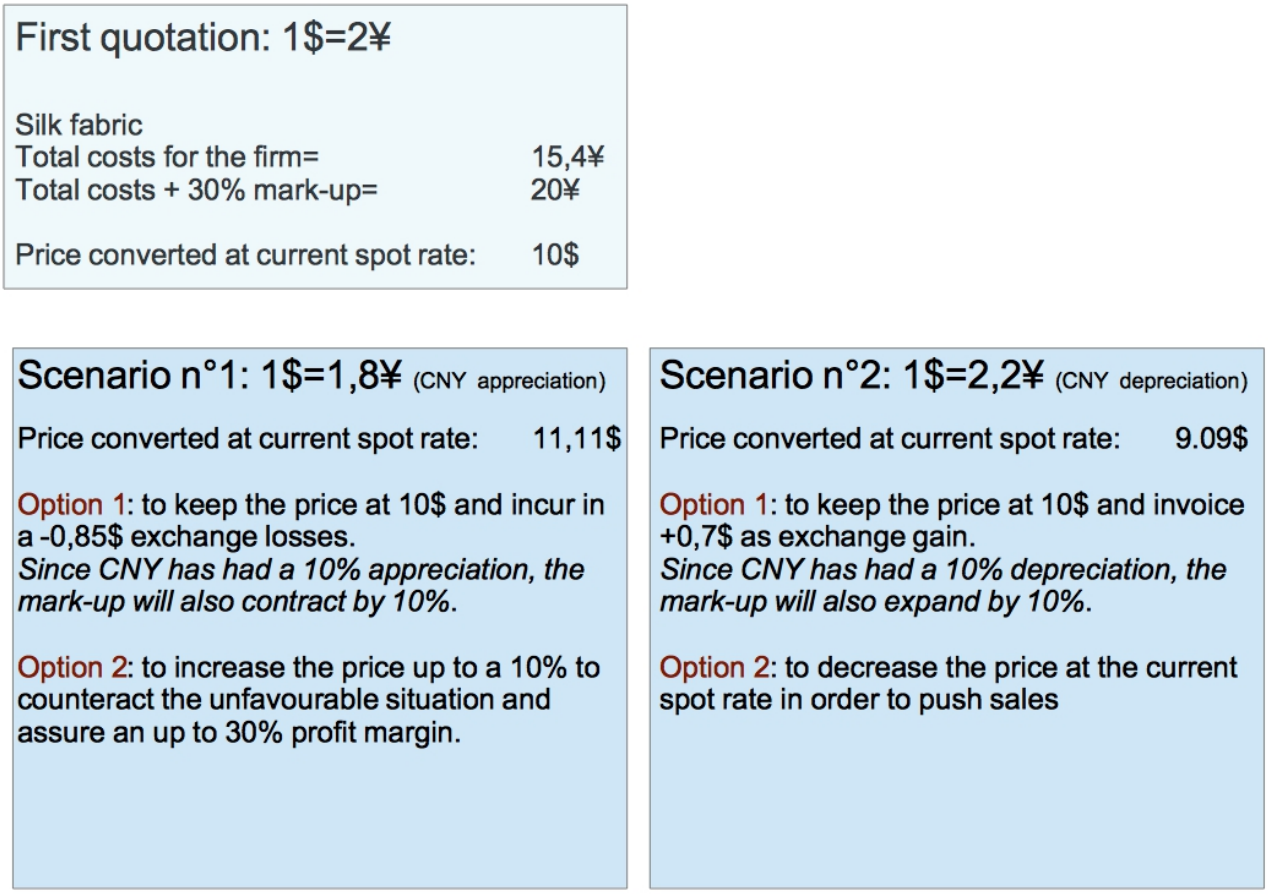

Exhibit 15: An example of the impact of changes of the currency rate exchange on prices

Generally speaking, with changes in the forex market, two main scenarios may arise[62]: given the fact that transactions are made in USD, if the CNY **depreciates** (against the USD) the firm has two options: either benefit from the favourable situation by not lowering the prices, or to lower prices for many possible reasons that could be pushing sales. On the other hand, if the CNY **appreciates** (against the USD) the scenario is the complete opposite: the firm would be either compelled to raise prices (in order to maintain the mark-up percentage) or to keep the original price and give up a certain percentage of profit. Both options have downsides: if the firm decides to increase the price, the firm is exposed to tougher competition, especially if the

[62] Obviously assuming that the firm is willing to adjust prices according to the foreign exchange rate (at least to some extent), and also assuming that the firm is not willing to use any financial contracts to counteract currency exposure.

item's demand is very price-elastic; if the firm decides to maintain the original price, the offset of keeping a competitive price results in lower profits.

Maxvogue International's strategy regarding the management of foreign currency during negotiations can be summarized as follows:

- If the CNY depreciates against the USD, the price will not be lowered;
- If the CNY appreciates against the USD, the firm will set a profit goal (for example: this fabric must provide 5¥ x mq of profit) and will negotiate with the client in order to obtain such profit;
- After negotiations, the **final price** will refer to the **spot quotation** of the date of signing of the contract;
- The time-lapse that occurs between the signing of the contract and the payment date (which we remind being from 30 to 120 days after shipping) represents the firm's main source of currency exposure, as the firm does not use hedging instruments besides operational techniques during negotiations.

6.3.6. Maxvogue International's pricing policy: a summary

Now that we have pointed out all the aspects of Maxvogue International's pricing policy, before moving on to the next chapter that will trace the firm's risk profile according to their pricing policy, it is useful to organize all this information under a hierarchy.

Some general considerations about Maxvogue International's pricing policy are:

- The price formulation process only has managerial inputs and other departments of the firm are not involved.
- The selling conditions applied are quite standardized and include: the use of USD currency, complying with international standards; mainly FOB terms; large use of letter of credit with a payment between 30 and 20 days after shipping.
- The main strategies adopted, that is standard mark-up and price-to-market, only produce a preliminary price quotation that will be revised during negotiations.
- Negotiations become crucial to determine the final price, which is also impacted by the changes in the currency exchange rate. The establishment of a timeline that pictures the period of negotiations and the changes in the exchange rate will eventually determine the final price.

- Negotiations also determine the specific selling conditions and payment terms, which will also influence the final price.

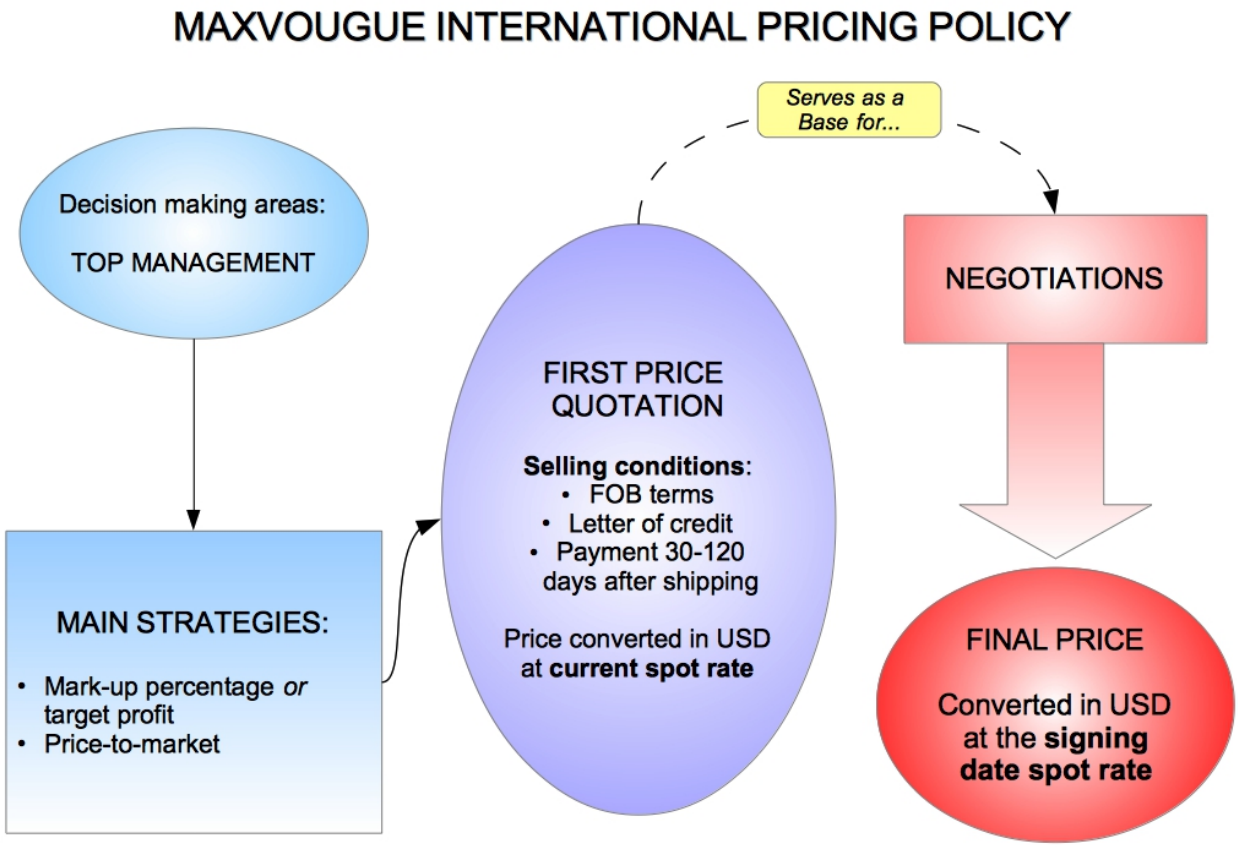

Exhibit 16: Maxvogue International's pricing policy

At this point we have a detailed picture of Maxvogue International's pricing policy: the next chapter will assess the efficiency of this policy and outline the firm's risk profile.

7. Maxvogue International's risk profile: theory meets practice

It is now time to combine the theory that we have presented in chapters §2, §3, §4 and §5 with the actual pricing policy of Maxvogue International, with a focus on risk management aspects too, since we have stressed the connection between risk and price. Is Maxvogue

International's pricing policy effective? Does the firm's pricing policy represent a risk for the firm? Does the firm take risks that cannot bear? Are the risks taken by the firm remunerative?
So far, the theory that we have presented is very different from Maxvogue International's situation. Are these differences a weakness for the firm? What are the reasons behind these differences?
In §7.1 we will introduce and analyze the risk area that arises after the firm signs a contract.
In §7.2 we will verify the impact of such risk area on Maxvogue International's revenue from an historical and comparative perspective, using a simple but effective model.
Finally, in §7.3 we will comment the firm's risk profile and, more in general, the firm's approach to price and risk trying to trace the inputs that drive such decisions, especially from a cultural approach.

7.1. Currency and risk in Maxvogue International's pricing policy

The first step to do in order to trace Maxvogue International's risk profile is to establish a consistent timeline and focus on the risks' sources and time of occurrence, especially when dealing with foreign currency, as the firm always does. Second, we will consider an ever broader timeline to see if different decisions offset each other: we are referring to the crucial points that we expressed in §6.3.5, which summarized the firm's policy towards exchange rate fluctuations.

7.1.1. Maxvogue International's currency management: a timeline

In §6.3.5 and §6.3.6 we outlined the process of the price formation, stressing the role of negotiation, and pointed out the firm's policy towards foreign currency management.
Now, in order to assess the efficiency of Maxvogue International's foreign currency management we must include it in the broader timeline of the whole price formation process: we have already pointed out in §5.2 and §5.3 the importance of the time factor in finance, especially when dealing with foreign currency: it is therefore useless to consider Maxvogue International's currency management alone; instead, it is crucial to identify the connections between the firm's pricing policy and currency management to get a more detailed and integrated picture.

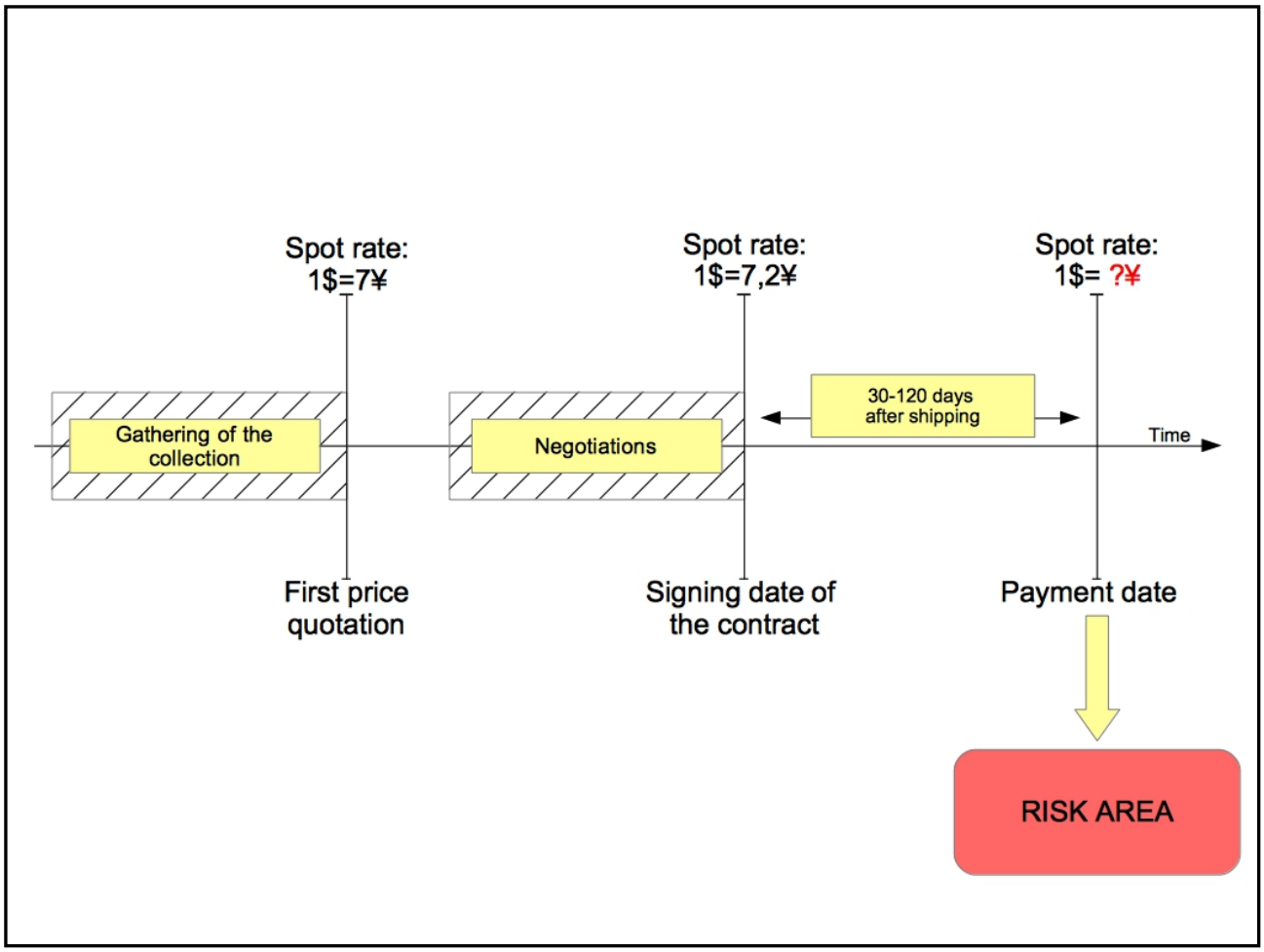

Exhibit 17: Maxvogue International's price and currency timeline (an example)

As seen in Exhibit 17, the firm has control over the currency management until the signing date of the contract: after such moment, the firm takes the risk of receiving an unexpected outcome, which may be greater or minor than what expected. As we already stressed, the firm makes great negotiation efforts to maintain a fixed mark-up, which may vanish with a significant CNY appreciation against USD.

7.1.2. Maxvogue International's pricing policy: is it effective?

The last paragraph showed that the firm indeed leaves a significant risk area during the price formulation, and as we pointed out in §6.2.1, the firm does not use financial instruments to hedge operations against currency fluctuations. The firm's operational techniques only apply during negotiations, but their efforts end after the contract is signed, and changes may occur in the time-lapse between the order placement and the payment date.

However, in §6.3.5 we pointed out that during favourable currency fluctuations the firm does not lower the price and actually benefits from the depreciation of the CNY. This factor is extremely important, since if we only considered the negative cases we wouldn't be able to

form a complete picture. The analysis in the next chapter combines both sides of the medal in order to see if the benefits from positive fluctuations offset the risk that the firm takes (and the possible negative outcomes).

7.2. Quantifying the currency risk on Maxvogue International's price aspects

In this paragraph we will focus on the analysis on the currency aspect and its potentially distortive effects on the final price.

After a brief review of the existent literature, we will first deal with the analysis of the general volatility of the currency that is object of our case, that is CNY, according to different time horizons and different perspectives. Later, we will switch to a retrospective analysis of the financial impacts of the CNY/USD exchange rate fluctuations on Maxvogue International. We will conclude with a comparison between CNY/USD exchange rate dynamics and other currencies' exchange rates to have an even bigger picture.

7.2.1. CNY/USD exchange rate volatility

As we already stressed throughout this work, Maxvogue International is subject to mainly transactional currency exposure, which is only counteracted with operational techniques, to the extent that the firm remains exposed between the signing date of the contract and the effective payment date (§7.1.1).

Due to the rising use of CNY as an international trade currency, many foreign firms have grown to deal with the Chinese currency. At the beginning of 2015 the CNY was the fifth more traded currency in the world: such diffusion is a very relevant fact, and has a direct impact on the volatility and currency exposure risks for firms such Maxvogue International, which operate in China and use two different currencies for their trades: local currency for purchases and foreign currency for sales.

Table 3[63] shows USD/CNY exchange rate developments from January 2010 to November 2018.

[63] The data used for this and all the following analysis was collected from https://tassidicambio.bancaditalia.it/timeSeries

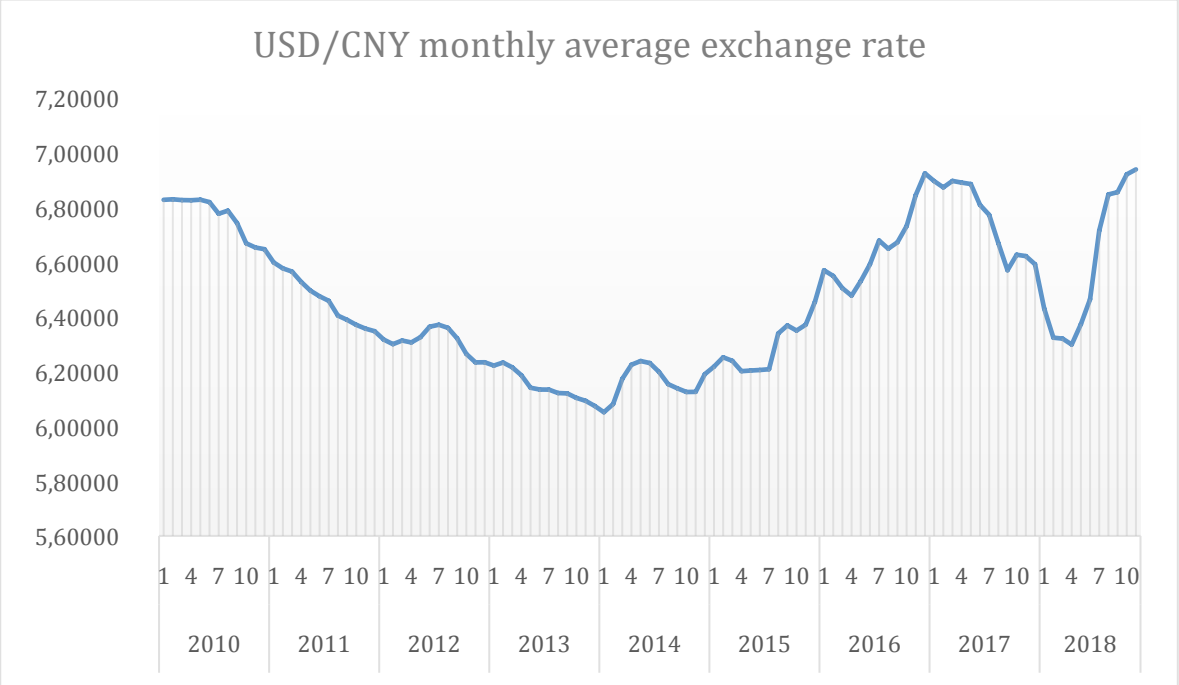

Table 3: USD/CNY exchange rate developments (Jan 2010-Nov 2018)

This first graphic underlines a CNY trend that we could define as "controlled" with respect to the USD. The distance between minimum values and maximum values in between the same year is a 6% average. This first historical data, with all the descriptive limits of this type of analysis, suggests the existence of an historical trend that mitigates the intra-annual volatility's impact.

Before moving on with our examination, it is important to spend a couple of words on the concept of volatility in finance: volatility is definable as the quantification of the percentage of the variation of an asset's value (usually price or price benchmark). In this work we will refer to the concept of **historical volatility**, that is the measurement of the variations given an historical set of data.

In the currency market, volatility is measured over purchasing and selling volumes of a given currency, and equals to a fluctuation of the currency's price during a certain time horizon.

It goes without saying that the more a currency is volatile, the higher are the risks of managing such currency.

We could also define volatility as a "speed of the market" measure, that is and index that expresses how fast exchange rates suffer from adjustments after the publication of macroeconomic reports, politic events, news and even rumours.

The volatility of a currency is also connected to a large set of factors that include inflation rates, interest rates, tourism, geopolitical stability, import-export levels, monetary policy and so forth.

There are different methods to calculate volatility: the most intuitive is the **standard deviation method** (also called root-mean-square deviation) on exchange rate **variations** during a certain time period.

The formula is: $\sigma_X = \sqrt{\frac{\sum_{i=1}^{N}(x_i - \bar{x})^2}{N}}$, where $\bar{x} = \frac{1}{N}\sum_{i=1}^{N} x_i$.

If we examine the dataset presented at the beginning of this paragraph, we can calculate the standard deviation of CNY/USD exchange rate variation on an annual basis:

Years	Var. standard dev. %
2010	0,00103
2011	0,00131
2012	0,00092
2013	0,00064
2014	0,00122
2015	0,00173
2016	0,00202
2017	0,00206
2018	0,00278
Total	0,00166

Table 4: USD/CNY ex. rate variation's standard deviation (numerical)

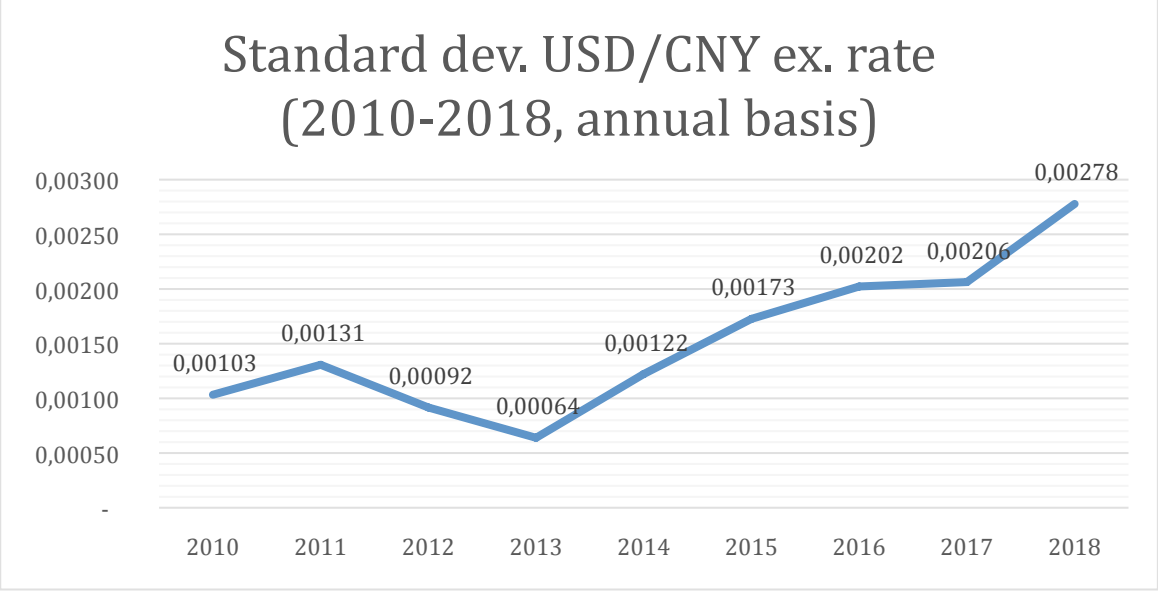

Table 5: USD/CNY ex. rate variation's standard deviation (graphic)

Table 4 and Table 5 show a rising volatility during the 8 years' time-lapse examined, even though the analysis is still not complete thus the variables that may have impacted on average volatility during such long amount of time can be deceiving.
By shortening the time horizon to a three year window (2016-2018, monthly basis), the collected data appears to be in line with our first hypothesis of a low historical volatility.

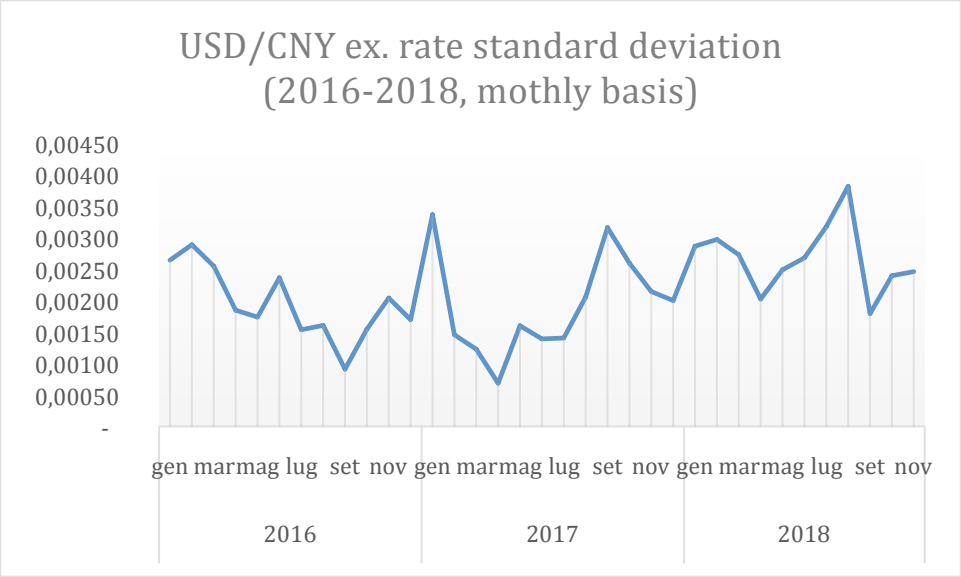

Table 6: USD/CNY ex. rate standard deviation, 2016-2018, monthly basis.

The data that we have presented and briefly examined only provides a partial picture: at this point of the analysis we know that the USD/CNY exchange rate suffers from an historically low (but rising) volatility, but we are yet to discover if such events have impacted Maxvogue International in a positive or negative way. Indeed, although volatility is usually associated with negative risks, we cannot evaluate variability as "harmful" or "advantageous": the standard deviation method only provides a measurement, not an assessment.
In order to answer the question we made in §7.1.2, we must draw on Maxvogue International's historical data and confront it with the data that we have just examined, in order to assess in which way USD/CNY exchange rate volatility has (or has not) impacted our firm.

7.2.2. Maxvogue International's historical data analysis, compared with USD/CNY volatility

In order to trace the impact of exchange rate historical variations on Maxvogue International we came up with an analysis model which, for the purposes of this work, is inevitably

simplified, but its intuitiveness and efficiency remark the actual effectiveness of Maxvogue International's operational techniques to counteract currency exposure.

This model is based upon empirically collected data (exchange rate variations) and on direct interviews collected during the stage period at Maxvogue International.

Due to the seasonal nature of the firm's business, the large majority of sales is made in two main periods:

- The trimester from February to April, during which the firm concludes approximately 63% of the total sales;
- The trimester from September to November, during which the firm concludes approximately 37% of the total sales.

For simplicity of exposition, our hypothesis is that in the remaining months the firm does not conclude further contracts.

We further split the two groups of sales into hypothetical monthly sales volumes, as shown in Table 7:

Seasonal period	% annual sales	Month	% seasonal sales
Feb-Mar	63%	**February**	51,50%
		March	35,50%
		April	13,00%
Sep-Nov	37%	**September**	51,50%
		October	35,50%
		November	13,00%

Table 7: Details of sales percentage per month, within seasonal period

The other data that we considered in this analysis is the payment term of stipulated contracts: as we stressed in §7.1.1, the longer the payment date is due, the higher the risk, therefore this last variable is crucial to have a concrete picture:

Payment terms	% on seasonal/monthly sales
30gg	15%
60gg	35%
90gg	45%

120gg	5%

Table 8: payment terms within seasonal/monthly sales

With this data we were able to assess the impact of exchange rate variations on the last two seasonal sales periods (feb/apr 2017 and sep/nov 2017) according to monthly exchange rate variations. Furthermore, we confronted the USD value of stipulated contracts at the signing date spot rate and at the effective payment date spot rate.

The analysis was conducted over Maxvogue International's 2017 turnover of CNY 3.800.000.

Table 9 shows the results of our analysis:

	Orders (CNY)	Orders in USD (spot rate)	USD revenues	Exchange gains/losses
Jan-17				
Feb-17	1.232.910	179.392	179.081,63	**-310**
Mar-17	849.870	123.235	124.149,51	**+915**
Apr-17	311.220	45.169	45.791,25	**+623**
May-17				
Jun-17				
Jul-17				
Aug-17				
Sep-17	724.090	110.209	109.723	**-486**
Oct-17	499.130	75.321	76.685	**+1.364**
Nov-17	182.780	27.603	28.561	**+958**
Dec-17				
	3.800.000	**560.928**	**563.991**	**+3.062**

Table 9: Analysis' results (2017)

The findings exposed in Table 9, according to 2017 exchange rate variations, show that the firm has benefitted from USD/CNY volatility and invoiced about 3.000 USD as exchange gains. This "positive variability" is quantified as the 0.55% of Maxvogue International's total revenues.

This data is aligned with the appreciation dynamic registered during the examined year, but in order to fully validate our thesis we considered a broader timeline, looking for more evidence of our assumptions.

We considered the 2010-2017 timeframe, keeping the assumptions that we made earlier about total revenues, payment terms and order quantities according to seasonal (and intra-seasonal) period. Table 10 shows our findings:

Year	Order placements (USD)	Revenues (USD)	Exchange gains/losses	% of incidence
2017	560.928	563.991	**+3.062**	**+0,55%**
2016	576.334	570.327	**-6.007**	**-1,04%**
2015	604.585	603.291	**-1.294**	**-0,21%**
2014	619.676	612.024	**-7.651**	**-1,23%**
2013	614.915	620.310	**+5.395**	**+0,88%**
2012	603.205	603.605	**+400**	**+0,07%**
2011	585.027	590.051	**+5.024**	**+0,86%**
2010	560.340	562.953	**+2.612**	**+0,47%**
	4.725.010	**4.726.552**	**+1.541**	**+0,03%**

Table 10: Analysis' results (2010-2017)

The data shown in Table 10 have great relevance: on a retrospective basis, we can affirm that Maxvogue International has successfully enacted operational techniques to counteract currency exposure, also due to the low CNY/USD volatility explained in §7.2.1. During the 2010-2017 timeframe the economic and financial impact of foreign currency exchange rate risk has an average reflection of +0.4% on total revenues, with a complexive revenue impact of +0.3%. Table 10 also shows some "negative years" (especially 2014) during which the firm's currency exposure has produced exchange losses, but the entity of such losses could be defined as "controlled risk", as they certainly did not have a decisive impact on the final account.

Moreover, in front of such minimum losses, one has to consider the trade-off of an opposite scenario: if the firm has chosen to use financial contracts to hedge transactions, would the cost of such instruments have exceeded the amount of exchange losses? Hedging decisions are a very delicate topic, and there are no unequivocal solutions. Judging a hedging (or not hedging) decision *ex post* is also a very hard task, thus the elements that could be considered are various and sometimes is hard to discover connections between events that are not correlated at first sight. Nevertheless, some quantitative techniques and stochastic methods

(§3.5.1) serve the purpose of trying to forecast the optimal edging decision: many interesting articles address this subject[64] with sophisticated tools in order to build consistent models; however, as we addressed in section §3.5, the limit of stochastic models is that such articulated algorithms, while trying to build an all-comprehensive model, may end up being far from reality as "common sense" would describe it: a good "reality check" article about hedging strategies is by K. D. Miller[65].

This said, our findings support Maxvogue International's pricing policy and foreign currency management: in order to further develop this discussion, an other comparative analysis will be made in the next paragraph.

7.2.3. Comparative analysis with other currencies

We are about to broaden our analysis by examining other currencies' exchange rate in a comparative spirit: since Maxvogue International operates in an international environment, it is interesting to see the difficulties that other firms from different countries have to face regarding exchange rate volatility and currency exposure.

After proving the USD/CNY exchange rate volatility to be moderate enough to justify Maxvogue International's choice to only use operational techniques to hedge transaction exposure, it is fair to ask how other international competitors are impacted by currency dynamics, thus a risk analysis only reaches its true potential from a comparative perspective.

We therefore considered the following exchange rates of the four most important currencies in the textile industry:

- USD/CNY (US Dollar/Chinese Yuan) which was already analysed as the base for our comparison;
- EUR/USD (Euro/US Dollar) which is of great interest for the Euro-zone countries and its satellite countries;
- EUR/CNY (Euro/ Chinese Yuan) which is important for European firms that delocalized production in China;
- USD/JPY (US Dollar/Japanese Yen) which adds important geographical and comparative information.

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[64] To cite a few: Hagelin, N., & Pramborg, B. (2004). Hedging foreign exchange exposure: risk reduction from transaction and translation hedging. *Journal of International Financial Management & Accounting*, *15*(1), 1-20.
Morey, M. R., & Simpson, M. W. (2001). To hedge or not to hedge: the performance of simple strategies for hedging foreign exchange risk. *Journal of Multinational Financial Management*, *11*(2), 213-223.
McCarthy, S. (2003). *Hedging versus not hedging: strategies for managing foreign exchange transaction exposure* (Vol. 162). School of Economics and Finance, Queensland University of Technology.

[65] Miller, K. D. (1992). A framework for integrated risk management in international business. *Journal of international business studies*, *23*(2), 311-331.

Table 11 shows the dynamic of the four exchange rates from January 2010 to august 2018, built with **index numbers** (100=January 2010) to facilitate the comparison.

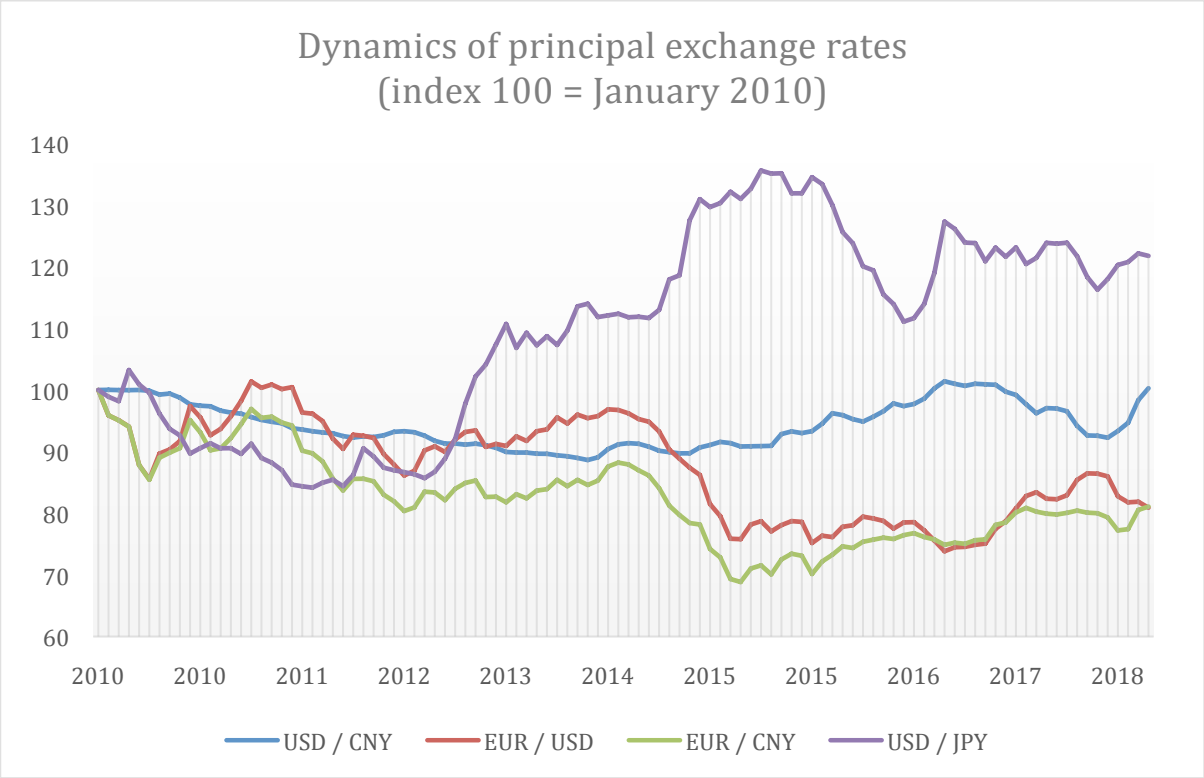

Table 11: Dynamics of the main exchange rates (Jan 2010-Aug 2018)

The "horizontalness" of the USD/CNY exchange rate appears to be evident compared to other exchange rates during this 8 year time horizon, which confirms the evidence of a low USD/CNY historical volatility, especially if compared to the (sometimes huge) variations registered from other exchange rates.

Moreover, the standard deviation method, which measures the volatility of the examined exchange rates, leads us to similar conclusions: Table 12 graphically shows our findings.

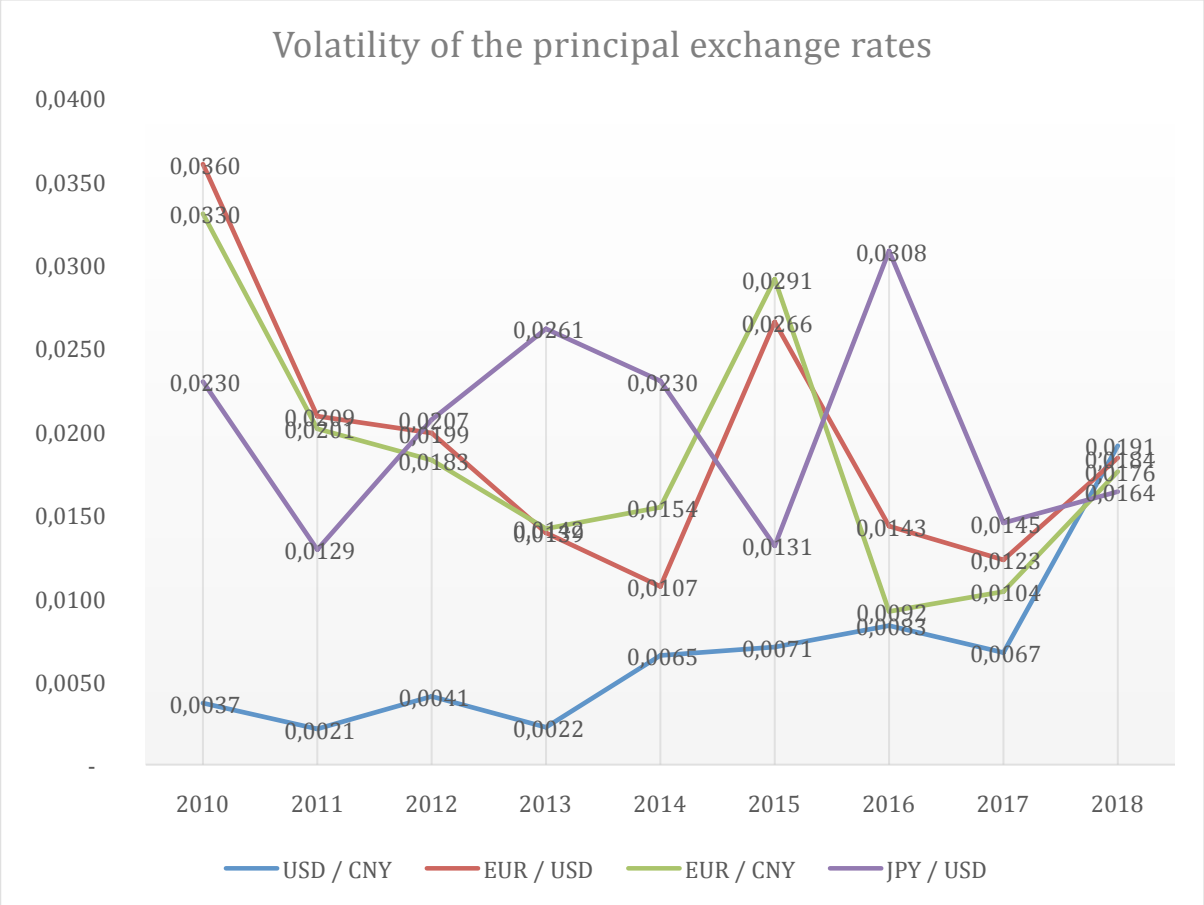

Table 12: Volatility of the main exchange rates (2010-2018)

Table 12 further confirms our first hypothesis of low USD/CNY volatility (and therefore a low USD/CNY exchange rate risk), especially if compared to other international players' situations within the industry.

Our last thought regarding this analysis goes to a future scenario: political, economic and social dynamics are very likely to put Maxvogue International in front of new challenges and new different forms of currency exposure. This last hypothesis is also supported by the most recent data that we have analysed: in the year 2018 the USD/CNY exchange rate volatility has peaked, especially if compared to its historical behaviour.

Nevertheless, even though Maxvogue International's strategy may have to change in the future due to inevitable changes, our study supports the firm's choices to this day: if obstacles will arise, the firm is likely to adapt and overcome new challenges, but the absence of sophisticated hedging strategies to this point is fully justified by the past evidence.

7.3. Maxvogue International's risk profile: conclusions

Our journey is almost over, we have descended from very general to very specific, gathering both empirical knowledge and evidence, and we have enough information to assess Maxvogue International's performance regarding pricing policies and risk management. We have already noticed that the theory that we presented is very far form the practices that the firm puts in place: we have stressed integration between disciplines, a valid planning activity, an efficient strategy that touches every aspect of the firm; none of this is present in Maxvogue International. Instead, the firm bids on contractual efficiency, a deep understanding of the surrounding environment and a quick response to any changes. We will now try to complete the picture drawing Maxvogue International's risk profile in §7.2.1, and we will further dive into the reasons that motive those choices in §7.2.2.

7.3.1. Maxvogue International's risk profile

To start this conversation, the starting point is the degree of **risk aversion** of the top management: even though a strategy is not formalized with a list of risk management objectives (see §3.3), the level of risk aversion of the decision making centre gives an important guideline for further decisions.

Overall, it is safe to say that Maxvogue International's risk aversion is **medium**: the firm tries to avoid unnecessary risks and only treats the unavoidable ones, in the spirit that "it is impossible to transfer risks to the client" to quote Tian's words. On the other hand, the amount of risks that the firm actually bears is considerable: after the signing date of a contract, the firm has no control over the possible outcome due to fluctuations in the forex market, also by choosing not to use financial contracts to hedge transactions.

To clear the matter it is useful to refer to paragraph §5.6.1, when we talked about the concept of **"unexpected"**: even though the subject of that paragraph was just concerning currency exposure, it still can be applied to other risk areas, especially the ones that impact the final price, that is: "exposure" does not refer to all the fluctuations of external variables that may impact the firm's performance, but only the fluctuations that were **not** predicted and incorporated in the firm's plan.

We have already noted that Maxvogue International does not engage in forecasting activities, its risk management system is just *ex post* and aimed at preventing similar errors to be made again, instead of a risk management system that aims at **preventing** risks and calculate possible outcomes. So in theory, after our analysis, Maxvogue International's risk profile and consequent pricing policy should be assessed as incomplete and far from effective.

However, we have also noted that the reality of the facts exposed in §7.2 reinforces Maxvogue International's strategy, stating that is has indeed proved to be effective for this particular firm, especially because the **unexpected** part of the firm's pricing policy (and currency management) is very small and often profitable.

To summarise, we have a firm that manages to be successful even after bearing important currency risks and not taking actions to hedge international transactions, even though the large majority of literature stresses the importance of planning activities and forecasting attempts, in the belief that the only dangerous risks are the ones that are not expected.

The case that we have presented has obviously not the aim to discredit the existing literature, but quite the opposite: after stating that Maxvogue International does not follow the advice reiterated in the literature that we have reviewed, the most logical question to pose next is **why** the firm does not comply with these trends, which will be discussed in the next paragraph.

7.3.2. Theory meets practice: a cultural approach

The first, more obvious reason why Maxvogue International does not engage in risk management and does not have a consistent currency management is because the need to equip the firm with such instruments has not yet risen: as it was shown in §7.2, the low volatility of the CNY leaves little room for risk, resulting in an overall efficient pricing policy. It is safe to claim that if the firm will ever encounter serious difficulties with the current policy, changes will be made, as the firm has been proved to have good adaptability skill and can easily adjust to the surrounding environment.

However, we find this thesis to be reductive: the cultural background of Maxvogue International legitimates even more its strategies, and we are about to explain why.

First of all, the Chinese people is known to strongly rely on negotiations: it is a deeply rooted part of their culture, negotiations are the base of everyday life in China, so it comes with no surprise that Maxvogue International's most important asset is their negotiation culture. Contracts are meticulously crafted, nothing is left to chance, especially in the spirit of mediation (here intended as "negotiations in good faith"), which is an other very important topic inside the Chinese culture. An especially required skill in Chinese firms is the ability to "谈生意" (tán shēngyì) which literally means "to discuss business", but whose meaning express the ability to negotiate: the negotiation process becomes a world of its own, with strict etiquette rules, tricks to understand the subtext, ceremonies that occur during the whole process, and so forth.

An other cultural factor that shall not be underestimated is the **value of experience**: as we described in §6.2, Maxvogue International's main strategy to face risks is to rely on pre-existent experience, a tacit catalogue of possible scenarios and consequent responses. The importance of experience is not only confined to business areas, but on the contrary, is deeply rooted in China's society: the elderly people are regarded with great respect due to their valuable experience, which may be the most important (or at least the one that is most recognized) skill to possess. This does not mean that the Chinese culture is not future-oriented, quite the opposite: the difference relies in which mean to predict the future is more successful. The intangible value of experience in China is perceived as more precious than skills acquired through studies. It comes with no surprise that the Chinese society is extremely hierarchical, and the most effective way to climb the social pyramid (and to gain validation from other people) is by collecting experience.
One last consideration to do is regarding the teaching of economic disciplines in China. For decades, Chinese schools only taught the **socialist** economic theory, with little room left for new and innovative theories. This trend is obviously changing, but the generations that conducted such studies now compose China's ruling class: new generations, especially those who return to China after studying abroad, are very likely to be familiar with the latest trends in economics, but their parents are likely to continue to do business in the traditional way.

Our last (and very bold) claim regards Chinese philosophy: together with Confucianism, Taoism is an important pillar of Chinese society. This fascinating discipline touches every aspect of the universe but focuses on **how** the human kind should interact with the rest of the world: a very beautiful Taoist metaphor is the carp, who does not try to change the path of the river but learns how to swim upstream; the lesson is not to try to control the universe but try to act in harmony with it. This untouchable feeling still pervades the collective consciousness of the Chinese people, and if we look closely we can still find its evidence: as bold as this claim can be, Maxvogue International's strategy complies with the main Taoist precepts rather than the latest economic findings; our firm has learnt to interact with its surrounding environment through learning and experience, not by trying to anticipate the future or by trying to change things that are out of the firm's control. Nobody knows what the future holds, but we are prompt to think that Maxvogue International's response to the future will be as tenacious as the carp's spirit.

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