Department of Business and Management, Chair Risk Management

Should Ceramiche Musa enter the Japanese market?

A feasibility study assessing the possible risks of an expansion strategy

SUPERVISOR

Prof. V. Vecchione

CANDIDATE

Sveva Cintio

Student Reg. No. 675911

CO-SUPERVISOR

Prof. C. Cannarsa

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1 INTRODUCTION

1.1 The Company

Ceramiche Musa is a historic Italian brand of ceramic tiles for floor and wall tiles. Since 1943, the company offers a wide range of hand-made products. Uniqueness, colour and personalization are the elements that distinguish Ceramiche Musa from the competition. The company is a true Italian icon conceived by a visionary businessman during World War II. In the 1950s, 1960s and 1980s, the business developed with the opening of single-brand stores and a widespread network of retailers in Italy and abroad. After the great success of the 1980s, the business, now run by the third generation, has recently completed an articulated reorganization process made necessary for the crisis in the real estate market and consequent decrease in orders.

The company's mission is the same as conceived by the founder: to preserve and consolidate positioning in the luxury market, ensuring product quality and customer satisfaction by developing activities consistent with the sober and elegant taste that has been the Ceramiche Musa for over 70 years, Reinforcing the image of brand uniqueness and exclusivity through a progressive and sustainable global development.

Ceramiche Musa wants to enlarge its market opportunities by expanding towards Asia, opening a new store in Japan.

1.2 Objectives and Structure

The purpose of this paper is to study the feasibility of an investment in Japan taken by the Italian company Ceramiche Musa s.r.l. The political, economic and social features distinguishing Japan and its trade relationships with Italy will be investigated in order to assess the potential risks the company would face when entering the Japanese market.

First, I will provide a glance at the Japanese politics, economy and any characteristic unique to the country which could have an impact on the investment decision. After having enlightened the peculiarities of the Japanese economy that could have an impact on the company’s expansion strategy, I will assess the potential risks that could be faced when entering the new market.

Then, I will try to determine which of the risks is the major one for the company involved, providing Ceramiche Musa with a set of strategies aimed at mitigating the main risk ex ante.

Finally, the company will be provided with a recommendation for the best strategy to adopt in order to mitigate the worst risk ex ante, considering the peculiarities of the firm and the economic environment in which it operates.

1.3 Why Japan?

In terms of GDP, Japan is the third country in the world behind the United States and China. Its economic system continues to be among the most solid and developed, with a pool of consumers of about 127 million individuals and a high GDP per capita. The Abe government is also promoting a growth policy that has led the country out of a long period of economic stagnation.

During the last twenty years, a strong interest in Italy and Italian products has been consolidated. This trend, also considering the high standards of living of the Japanese population, favours the specialization of high level Italian production in the export of traditional sectors. In fact, the high-end made in Italy find a mature and highly sophisticated market, such as the Japanese one, a favourable development ground. This could also stimulate market access by SMEs specializing in the production of high quality goods, much appreciated by local consumers. Despite the geographical and cultural distances, Italy and Japan have similar characteristics and are faced with complex common problems, such as energy supply, natural disasters, environmental conservation and aging populations. Thus, exciting opportunities for cooperation in both innovative and traditional sectors are opened.

Although there are still several tariff and non-tariff barriers to entry in the country, which is protectionist by nature, the local legal system does not provide for restrictions or legal discrimination against foreign entrepreneurs. Exceptions are represented by a few sectors (agriculture, leather, mines, sectors that are strategic for national security). The corpus of non-written rules governing trade relations guarantees high solvency of credit and, once established, solid and lasting relationships that offer long-term growth expectations. The progressive relocation of productive activities abroad, coupled with the need to revive internal growth and accelerate the Tohoku reconstruction process, favour policies aimed at attracting foreign IDEs. Special Economic Zones, for example, provide for tax breaks and bureaucratic reductions for

companies, which can rely on an excellent infrastructure network, efficient services and high qualification of local staff, even on the rest of the national territory.[1]

[1] *www.infomercatiesteri.it, consulted on June 2017*

2 GLANCE AT JAPAN

2.1 An Overview

As an island country in East Asia, Japan is called "Land of the Rising Sun", which provides it with exceptional advantages of geography and transportation. Its population of 127 million people ranks tenth largest worldwide and 98.5% are Japanese, indicating that Japan is not an immigrant country and that local demand is mostly influenced by Japanese habitants.[2]

However, as Chinese investments increased these years, the demand growth in many industries including luxury market is mainly triggered by Chinese consumers.[3]

Workers in Japan are famous for their fine quality but never for its expensive labour price. Similar to Italy, Japan is never a low-tax country that has diversified kinds of taxes such as liquor, tobacco and gasoline taxes.

As one of the most densely populated developed country, Japan heavily relies on import for long run and continues to be an important market for European producers. Specifically, Japanese emphasizes high quality of life and have propensity of high quality products consumption. Imported brands from the West are usually sold at a higher price and serve as a way for consumers to display their social status.[4]

2.2 Political Structure and Stability

The Japanese political system is based on the constitution of Japan, which was drawn up after the end of World War II. It became effective on May 3, 1947, and it solidly established a democracy in form of a constitutional monarchy, which, similarly to the U.K., preserved its long-standing imperial family as the honorary nominal head of the country.

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[2] *http://www.oecd.org/, consulted on June 2017*

[3] *www.businessoffashion.com, BOF team and McKinsey Company, 10 Trends that will define the Fashion Agenda in 2017, consulted on June 2017*

[4] *http://www.oecd.org/, consulted on June 2017*

From this point ahead, governmental power has been allocated between three branches; the National Diet, the Cabinet, and the judiciary sections of the government. These entities serve as the legislative, executive, and judiciary body respectively. [5]

I will now consider the following distinction:

- Domestic Politics
- Foreign Politics

2.2.1 Domestic Politics

In addition, the bureaucracy still holds great influence within the Japanese political-administrative system, and the LDP does not seem willing to loosen its power: a goal already failed by the former DPJ leadership government.

2.2.2 Foreign Politics

Tensions between China and Japan, originated during the aggression during the WWII period, have risen due to the controversial dispute over the status of the Senkaku Islands (called Diaoyu by the Chinese), located in the East China Sea, on which both states claim sovereignty. Therefore, companies operating in both markets should keep track of the relations between the two countries.

Furthermore, the Self-Defense Forces maintain a high alert level for a missile attack by North Korea. It is believed that Japanese territory can be reached by Pyongyang mid-range missiles and that a possible defensive counterattack could lead to an escalation of tension between the two countries.

Last, Japan and Russia contend the sovereignty over four islands located between Hokkaido and Kamchatka, known as the Northern Territories in Japan and the Southern Curies in Russia. Japan also denies sovereignty over a group of islets between South Korea and the Japanese archipelago, known as Dokdo in Korea and Takeshima in Japan. Though、over the years they have made political controversy among the contestants.

[5] *www.japanindustrynews.com, consulted on June 2017*

2.3 Recent Economic History

Japan's nominal Gross Domestic Product is $4.73 trillion, while it's GDP per capita is $38,893. The country's economy is based mainly on exports which count for about $640 billion.

Despite the strength of its economy, Japan is characterized by a slow growth marked with an average growth rate of 10% in the sixties to 4% in the eighties. Japan's economy has shown stable patterns for most years in the third millennium, but the country evidence of recession patterns has shown up four times in 2008.

The major reason for the slowdown in the growth rate is to be attributed to the aging of the population, since 27% of it is over the age of 65, while only 13% of the population is under 14 years old.

The economic reforms launched by the current Prime Minister Shinzo Abe are better known with the name of ABENOMICS. The aim of such reforms is to raise the Gross Domestic Product by 20% by 2020.[6]

2.4 Fukushima Disaster

The Japanese trade balance has been heavily affected by the Fukushima disaster (which has boosted the import of fossil fuels), the strengthening of the yen and the slowdown in global demand, leading to a record deficit of 112 billion dollars in 2013.

Until 2011, Japan strongly relied on nuclear energy, being able to produce nearly 30% of the country's demand for electricity. However, after the nuclear disaster of Fukushima the government ordered the shutdown of all the nuclear reactors. Yet, the current government has decided to relaunch the nuclear electricity production, guaranteeing the security with strict safety conditions. Two reactors were thus launched in 2015.

Following the closure of the nuclear reactors, the dependence of Japan on imported oil increased dramatically, raising the annual volume of imports to 3.4 million barrels per day, one third of which comes from Saudi Arabia.

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[6] *http://english.alarabiya.net, consulted on June 2017*

There is pressure for the executive to take the reins of TEPCO and face the crisis with the Fukushima power plant more decisively. By doing so, however, any mismanagement could seriously damage the credibility of the government, undermining its stability, and diverting the hypothesis of re-starting some of the nuclear plants.

2.5 Current Economic Policy

Economic policy focuses on reducing spending and raising revenues, including gradual increases in the consumption tax rate. [7]

Quantitative and qualitative easing policy until the 2% inflation target is being achieved. Furthermore, its long-term economic policy includes structural reform, in which raising productivity is fundamental to long-term growth.[8]

Trade integration through the Trans-Pacific Partnership and business-sector dynamism through improved corporate governance and regulation are aimed at narrowing the productivity gap with the top OECD countries.

Boosting investment in knowledge-based capital, such as vocational education and training, is essential to spur productivity growth as well. [9]

I will now analyse two distinct features of the economic policy:

- Fiscal and Monetary Policy
- Financial System

2.5.1 Fiscal and Monetary Policy

Japan currently has debt burden of 247% of its GDP. Through 'Abenomics', the government tried to spur economic growth using expansive fiscal and monetary policies.

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[7] *Michael Keen, Mahmood Pradhan, Kenneth Kang, and Ruud de Mooij, Raising the Consumption Tax in Japan: Why, When, How?, INTERNATIONAL MONETARY FUND, 2011*

[8] *Global Macro Shifts, Michael Hasenstab, Japan: the quest for growth and inflation, 2015*

[9] *Economic forecast summary, OECD, 2016*

Japanese Prime Minister Shinzo Abe's government pressed for the fiscal policy to have a major role in 2017, according to draft guidelines for the budget Refer ton by Bloomberg.

The government advocates the use of fiscal policy in coordination with a loose monetary policy to support the economy.

Particular interest has been shown in the fiscal policy aiming at supporting growth in Japan. Some doubts have been expressed about the Bank of Japan ability to maintain its aggressive monetary easing program. The BOJ recently changed its policy regime in a better-suited for long-term sustainability, but some economists consider the new framework a cover for a "stealth tapering" of its asset spending. The budget document does not fix spending targets, but it tabulates the basis that should guide the budget for 2017.

Fiscal spending was relevant in Abe's growth program, Abenomics, even though it has been implemented with difficulties. In August 2016, Abe advanced a 28 trillion yen ($252 billion) accompanying stimulus package that was approved by parliament, even though only a quarter of that amount was actually spent.[10]

The Japanese political class has not yet succeeded in launching a tax reform that puts an end to the growth of public debt, and Refer toms to be unable to do so today. As a consequence, it is expected that the debt-to-GDP ratio will continue to grow in the long run, being the highest among the developed nations. Although the country is not at risk of default, the debt dynamics remains worrying.

It has passed a law which increases the consumption tax from 5% to 10% in two phases. The tax manoeuvre, however, which negatively impacted domestic demand in 2014, exerted a moderate recessionary effect even in early 2015. In the second part of the year, however, the slowdown in China had a negative impact on the Japanese economy.

2.5.2 Financial System

Financial system in Japan maintains stable and its financial intermediation continues to operate smoothly.

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[10] *Connor Cislo and Maiko Takahashi, Japan looks to Increase Role of Fiscal Policy in Next Budget, Bloomberg, 2016*

Capital adequacy ratios of financial institutions are above regulatory requirements, and their capital levels are generally sufficient relative to the amount of macro risks undertaken.

Financial institutions have sufficient yen funding liquidity. As for foreign currency liquidity, they have a liquidity buffer that can cover funding shortages, even if funding conditions become difficult for a certain period.[11]

The banking sector has made great strides over a period of severe crisis some years ago. Evidence is the decline in non-performing loans (NPLs) compared to the total loans of the largest Japanese banks. NPLs ratio remained around 1-2%.

2.6 Future Prospects

Future prospect will be now analysed in terms of:

- Recovery Trends
- Luxury Products Demand

2.6.1 Recovery Trends

According to economist polls done by Reuters in November, Japan economy Refer toms on the track of recovery and is expected a moderate growth in 2017. Even though retail sale is not expected to increase, it Refer toms that private consumption, accounting for 60% GDP, has hit the bottom and is in the phase of returning to a moderate recovery. Furthermore, Japan's core machinery orders, which is a well-known indicator of capital spending, increased by 3.1 percent at the end of 2017.[12]

2.6.2 Luxury Products Demand

Future macroeconomic environment in Japan will be in favour of luxury and other high-ending products.

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[11] *Financial System Report, Bank of Japan, www.boj.or.jp, consulted on June 2017*

[12] *http://www.reuters.com, consulted on June 2017*

2.7 The Current state of Investments between Italy and Japan

The percentage share of Italian supplies to Japan is around 1.3% of total Italian exports. In recent years, trade has denoted a stable and steady trend, confirming, on the one hand, the consolidation of strong commercial relations in the traditional sectors of Made in Italy and Made in Japan, but highlighting, on the other hand, the difficult evolution of economic relations between the two countries. This evolution was partially determined by the macroeconomic scenario of limited growth of both economies, with rates far below the European and world average.

As of 2011, however, Italian exports, thanks to the strengthening of the yen, experienced a remarkable acceleration, which happened in the same time of an equally sharp fall in imports from Japan. The favourable trend continued after the rebalancing of the exchange rate. Traditionally, in passive terms, the Italian trade balance with Japan has recorded a progressive and visible improvement, which, as of 2011, resulted in an increasing trade surplus in favour of Italy. However, in 2014, Italian deliveries showed a marked slowdown due to the strong contraction in the pharmaceutical sector, one of the main sectors of Italian exports to Japan, which continued throughout 2015.

Italian production with a high level of specialization in the traditional sectors of export continues to be found in a mature and highly sophisticated market such as Japan's favourable development ground.

In the last four years, however, imports from Japan have experienced a sharp contraction due to the production crisis following the natural disaster of 11 March 2011, the strengthening of the yen on international markets and the fall in demand within the Italian market. However, 2016 Reforms to show a strong recovery of Japanese supplies. Japanese exports to Italy are based on the areas traditionally linked to the excellence of Made in Japan in the world, a symbol of innovation, technology, research and development. About a quarter of the supplies are represented by the mechanical equipment sector, followed by the automotive industry and the electrical and IT machines sector. Imports of organic chemicals, optical and precision instruments, plastics and pharmaceuticals remain important.

2.8 The Luxury Market in Japan

For the past few years, Japan has been leader in the global market for luxury goods until 2015, when China took its place. Despite its struggling economy in 2015, Japan still had a luxury goods market worth $20 billion, which enjoyed 9 percent CAGR given that exchange rate is constant, according to data provided by consulting firm Bain & Company. [13]

2.8.1 The Major Drivers of the Japanese Luxury market

The major drivers of the Japanese luxury market are:

- Tourists
- High Net Wealth Individuals

2.8.1.1 Tourists

One reason for the discrepancy between the overall Japanese economy and the luxury industry is tourists. Having as major drivers the weakness of the yen, the drop-in tourism in Hong Kong and Macau, and the smoothing of visa rules for Chinese citizens, which became effective on January 2016, Chinese tourists visiting Japan are drastically increasing according to the report Chinese Tourist Boom released by Goldman Sachs. [14] This influx has certainly helped improving the image of Japan as an island of stability and spending power in the global luxury market.

According to the Japan National Tourism Organisation, in 2015 about 19.7 million overseas tourists landed in Japan. About 5 million of them came from China showing an increase of over 100 percent from 2014. Of the incredible amount accounting to 3.48 trillion JPY (about 26 billion EUR) spent by foreign visitors in Japan during that year, Chinese people's spending was 40.8 percent. According to Federica Levato, senior consultant at Bain & Company, the devaluation of the yen with respect to the Chinese yuan makes it very convenient for them to buy luxury goods in Japan rather than in China.

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[13] *www.businessoffashion.com, consulted on June 2017*

[14] *The Chinese Tourist Boom, Goldman Sachs, 2015*

It follows that tourists represent up to 40 percent of total sales in Japan for most exposed brands, according to Bain's 2015 global luxury goods report.

2.8.1.2 High Net Wealth Individuals

According to the New World Wealth APAC Wealth Forecast, in 2015, Japan had 1,260,000 high net worth individuals (those with net assets of $1 million or more), accounting for more than twice of China (654,000). And despite the fact that population is getting older and older, Japan is predicted to gain 327,600 HNWIs from 2015 to 2025, number which is higher than any country in Asia Pacific except from China where it amounts to 490,500.

Looking further forwards, the 2020 Olympics games in Tokyo might further boost the luxury industry, spurring investment in retail infrastructure, among them new shopping centres and department stores.

3 RISK FACTORS IN CASE OF INVESTING IN JAPAN

Multinational companies stand before a much wider market than domestic companies due to the global potential. However, with an increased global market come increased risks. Multinational companies stand before a much higher variety of risks than their domestic counterparts, with each risk correlating to a specific aspect of international business. Although it is debated which risks correspond to which specific business aspect, one can generally argue that the different categories of international business risks can be divided into six sectors: [15]

- Political Risk
- Financial Risk
- Product Risk
- Commercial Risk
- Operating Risk
- Currency Risk

3.1 Political risk

Political risk is a factor that covers many areas and is quite wide-spread. Defining political is done by classifying it into three different categories, which consist of:

- Firm-specific Risks
- Country-specific Risks
- Global-specific Risks.

[15] *Grath, Företagets Utlandsaffärer, 1999*

3.1.1 Firm-specific risks

Also known as micro-risks, they are those political risks that have an affect the project or corporate level. The most common risk factor in this case is the governance risk, which can arise due to goal conflict between a multinational company and its host government.

3.1.2 Country-specific risks

Macro-risks that originate at the country level but also have an effect on a corporate or project level. Two main country-specific risk categories are the transfer risk and the cultural/institutional risk. Transfer risk mainly concerns the problem of blocked funds which limit a company's ability to transfer funds into and out of a host country without restrictions. Cultural/institutional risk correlates to specific factors such as shared ownership requirements by the host government, requirements to employ host country citizens, nepotism and corruption, the protection for the company's intellectual property rights and protectionism which is defined as attempts by governments to protect certain of its designated industries from foreign competition.

Among country-specific risks, I will distinguish between:

- Risks Concerning Domestic Policies
- Risks Concerning Foreign Policies

3.1.2.1 Risks Concerning Domestic Policies

In a scenario shaped by bureaucracy still exercising a great power in the administrative system, foreign firms may continue to find difficulties in identifying who or what organization is responsible for specific policy decisions. This could pose a serious threat to Ceramiche Musa's expansion strategy. However, as a considerable number of Italian companies are currently exporting to Japan, Ceramiche Musa could enter into a joint venture with one of them, with the purpose to get insights of how to easily access the market.

3.1.2.2 Risks Concerning Foreign Policies

For what concerns the dispute between Japan and China over the Senkaku Islands, companies operating in both markets should keep track of the relations between the two countries. However, in the present Ceramiche Musa is interested only in entering the Japanese market. Yet, in the

event of a future intention to expand over China, further research should be developed for the suggested issue.

The risk related to a possible attack from North Korea would affect not only the Japanese economy, but the entire world. Thus, it should not be taken into account in the investment decision

With regards to the disputes between Japan and Russia over the islands located in northern Japan, none of them is currently causing a direct confrontation that could pose a danger to the security of the area.

3.1.3 Global-specific risks

They are risks that are usually quite difficult to forecast and correlate to major factors, such as for example terrorism and war, environmental concerns and effects, and cyber-attacks.[16]

3.2 Financial risk

The financial risk is a large level type of risk that affects companies both through a global level and a micro level by unexpected changes in the financial environment. The typical aspects included in financial risk are interest rate risk, inflation risk, the current account balance and the balance of trade. More than often, these factors are beyond a company's control as they are influenced by a government's monetary, fiscal and trade policies.

Additionally, there are underlying features to take into consideration that also have traits of a political dimension which are also closely tied to political risk. Such aspects include loan defaults or loan restructurings, payment delays, cancellations of contracts by a host government, losses from exchange controls and expropriation of private investments. Companies might include assessments of the extent of restrictive trade practices, tariffs, trade regulations and the state of private ownership and bankruptcy laws.[17]

A further distinction will be operated between:

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[16] *Eiteman et al, Multinational Business Finance, p. 550 ff, 2007*

[17] *Butler, Multinational Finance, p. 362, 2004*

- Economic Risk
- Financing Risk

3.2.1 Economic Risk

The Japanese government is expected to continue with expansive fiscal and monetary policies in the future. Hence, we expect a continuing increase in the gross public debt.

The continuing increase in gross public debt represents a risk. If confidence was to weaken interest rates would immediately rise.

Foreign companies should therefore start considering alternative financial plans and narrow down their position with respect to the yen.

3.2.2 Financing Risk

Given the improvements in the banking sector, we could believe that financing risk should be measured only in terms of Ceramiche Musa's ability to raise financing.

However, the quality of bank capital is likely to be affected by BoJ's monetary tightening at the end of the QQE, which will raise interest rates, leading to a worsening NPL ratio, a decline in profits and a reduction in the availability of credit.

3.3 Product risk

Product risk is the definition of the risks that one of the partners automatically is responsible for through their own commitment. The commitment is usually stated in the sales contract and mostly applies to the products nature, such as operational quality, performance or service and maintenance responsibility. Depending on the conditions stated in the sales contract, it is either the exporter or the importer who bears the responsibility for such factors.[18]

There are many situations in international business where product risks become important factors, such as for example if specific conditions or environments in the buyer's country have a negative impact on the performance of the products or a question of reckless managing, lack of

[18] *Grath, Företagets Utlandsaffärer, p. 14, 1999*

continuous maintenance or humidity and/or rust damages due to a different climate. Additional risks can include direct payment conditions correlating to the products, such as the exporter gets paid when the delivered products have been installed by the buyer, but the buyer extends the instalment time, so will the payment date be postponed.

An important factor here is the transport risk, in which the physical delivery of the product plays a vital part. Not only will goods damaged in transport increase the costs for the exporter, but it is also a question of knowing which transport methods work in various countries. It is therefore important to state insurance and responsibility clauses in the contract regarding factors like these.[19]

3.4 Commercial risk

In basic context, the commercial risk is the risk of non-payment by a non-sovereign or private sector buyer/borrower in their domestic currency arising from default, insolvency or bankruptcy and/or failure to take up the goods that have been shipped according to the supply contract.[20]

However, in connection to a pre-financing operation, commercial risk may also arise from the insolvency of a private supplier. In both cases, the commercial risk can simply be stated as the risk of a counterpart not fulfilling their contractual duty, may it be a product delivery or payment, due to financial reasons all the while the first part has fulfilled its contractual demands.

As the commercial risk is probably the best known and noticeable business risk, there are many managerial strategies developed for this feature. Methods such as:

- credit backup researching
- export credit financing
- insurance premiums
- letters of credit

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[19] *Grath, Företagets Utlandsaffärer, p. 14 f, 1999*

[20] *http://stats.oecd.org/glossary/detail.asp?ID=5896 2008-04-05, 18.55, consulted on June 2017*

- reimburses.[21]

3.5 Operating risk

Even though the weakening of the yen is having positive effects on exports, the absence of nuclear energy, will keep being a strong weakness, putting further pressure on the Japanese economy, with inevitable damages for foreign suppliers. Although executive Abe has expressed a willingness to reactivate part of the reactors, foreign companies should consider the risk of frequent blackouts, and, where possible, provide for alternative plants or establishments in different parts of the country.

A company willing to invest in Japan should closely monitor the situation, also to understand what the future of energy supply of the country will be. However, Ceramiche Musa should be concerned only in the event of establishing a plant in Japan, which would be eventually a second step following the export-only strategy. Thus, the company would have the time to monitor the situation in concerning energy supply in Japan.

Operating risk can be caused by:

- Natural Disasters
- Socio-political causes

3.5.1 Risks Caused by Natural Disasters

Tokyo is located in a highly seismic zone. The city is hit by an earthquake of rough proportions every 70 years. The last one occurred in 1923 (big Kanto earthquake). A shock of great size could therefore strike capital over the next few years, causing a number of victims and huge economic damages. In case of increased seismic activity in the region, companies should therefore consider using alternative plants or facilities in other parts of the country, in order to avoid too much concentration.

[21] *Eiteman et al, Multinational Business Finance, p. 643 ff, 2007*

3.5.2 Risks by Socio-Political Causes

Although the Japanese courts do not openly discriminate against foreign investors, they are often ill-disposed towards commercial disputes. In addition, Japanese legal procedures are known to be complex and slow for a series of bureaucratic and organizational reasons. Therefore, foreign investors in Japan should consider that, in the event of a legal action, a process could last far more than would be the case in the country of origin.

The presence of cartels and trade associations, which act with distortion actions on the dynamics of the whole economic sectors, together with a generic commercial practice, also prevent large foreign companies (with a few exceptions) to start a going concern business in Japan. Land costs and the high level of remuneration paid to locally recruited staff are factors that continue to affect crucially the poor foreign presence in the country.

Less than 2% of the Japanese population is composed of foreigners. This entails difficulties in recruiting specialized staff from abroad, even though the authorities maintain a substantial openness to the immigration of highly skilled workers, with the objective of doubling their number by 2020. The process for obtaining of working visas remains, still long and complex. Although in the medium term a streamlining of current bureaucratic procedures is expected. [22]

As for the risk posed by difficult administrative system, Ceramiche Musa should consider a joint venture with an existing export company.

3.6 Currency Risks

The currency risk is one of the most popular and common types of business specific risks. It is defined as the volatility of the currency exchange rate. Experts say that the exchange rate has important effects on a country's level and composition of GDP, consumption, and its general economic well-being. Non-residents investing or doing business in a foreign country could face great consequences when dealing with currency risk. This kind of risk could push up or down the profit in a transaction according to the direction of the exchange rate movements.[23]

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[22] *http://www.infomercatiesteri.it/, consulted on June 2017*

[23] *Clark et al, Managing Risk in International Business, p. 50, 1996*

The current system based on floating exchange rates has caused currency risk to become an important element of international business risk. We can identify the effect of currency variations with a gamble, as the exchange rate can either appreciate or depreciate. Hence, major international business risks as the currency risk often are observed to go together with some underlying factors, such as the market risk, namely variations from the return of an investment in the host country currency. Thus, currency risk normally requires the behaviour of the exchange rate to be analysed in order to determine the effective returns on the investment in the investor's base currency.[24]

Currency risk is usually thought about as only being a global risk, which should be faced on an economic level. Yet, the fact that currency risk is a macro-level risk, it does not mean that it is simply a global issue. Conversely, currency risks affect the profit directly through the company's business and transactions. Having an impact on the company's payables and receivables, currency risks affect directly the overall financial result. In fact, fluctuations in currency rate may affect the settlement of contracts, cash flows and the firm valuation. Therefore, it is a main issue for value to the firm and the shareholders that currency risk is appropriately managed to let the firm to be able to stabilize its cash flows and enhance the firm value.[25]

Currency risk typically appears when a company deals with an international business environment. Companies are exposed to this type of risk when fluctuation in the currencies, either in the short term or long term, occur affecting the company's results.

3.6.1 Direct and Indirect risks

Multinational firms are exposed to both:

- Direct Currency Risks
- Indirect Currency Risks

[24] *Clark et al, Managing Risk in International Business, p. 50 f, 1996*

[25] *Eun et al, International Financial Management, p. 192, 2007*

3.6.1.1 Direct Risks

Direct currency risks occur when:[26]

- Companies export and import in foreign currencies.
- Companies buy and sell in their domestic currency, but with a currency clause in the contract that enables the counterpart to change the currency under certain conditions.
- Companies have financial debts and assets in foreign currencies.
- Companies have foreign investments/subsidiaries.
- Companies have foreign subsidiaries that pay returns/royalties in foreign currency.

3.6.1.2 Indirect Risks

Indirect currency risks occur when:[27]

- Companies buy and sell in their own currency, but the price is affected over time by currency fluctuations.
- Companies work in domestic and international markets, with domestic competitors who have cost structure exposed to currency exchange rates.
- Companies work in domestic and international markets, with foreign competitors who have different capital cost structures.

It is argued that more or less most companies are exposed to currency risks. In some cases, the currency risks are very noticeable, while in other cases they might be difficult to define and measure. The results on the companies' figures might also be various; effects of currency fluctuations on companies exposed to direct currency risks are more likely to affect the result of

[26] *Bennet, Finanshandboken, p. 162, 2003*

[27] *Bennet, Finanshandboken, p. 162 f, 2003*

the present operational year, whereas the effect on the result on companies exposed to indirect currency risk might show some results in the future.[28]

3.6.2 Transaction, Translation and Operating risks

If Ceramiche Musa enters the Japanese market, it could face three types of forex risk exposure:

- Contractual exposure
- Operating exposure
- Accounting exposure

3.6.2.1 Transaction exposure

The company could experience a contractual exposure if the value of contractual cash flows is subject to changes in the exchange rates.

When entering the Japanese market, Ceramiche Musa could have to order raw materials, purchase sub-contracted parts, and deal with potential Japanese stakeholders.

We can define transaction risk as the sensitivity of realized domestic currency values of the company's contractual cash flows denominated in foreign currencies to unexpected exchange rate changes. In essence, transaction exposure is a measure of changes in the value of outstanding financial liabilities incurred before a change in exchange rates but not due to be repaid until after the change in the exchange rate change. If a company uses to do business with specific currency, and it fluctuates, all the contracts, starting from the seller's quote to the final day of cash settlement, are affected during the period of time required for the transaction to be fulfilled.[29]

Transaction exposure arises from:[30]

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[28] *Bennet, Finanshandboken, p. 165, 2003*

[29] *Eun et al, International Financial Management, p. 192, 2007*

[30] *Eiteman et al, Multinational Business Finance, p. 258, 2007*

- Purchasing or selling products with prices stated in foreign currency
- Borrowing or lending funds when repayment is to be made in a foreign currency
- Being a party to an unperformed foreign exchange forward contract.
- Otherwise acquiring assets or liabilities denominated in foreign currencies.

A common example of transaction exposure emerges when a company has a payable or receivable denominated in a foreign currency. The total transaction exposure is made of quotation exposure, backlog exposure and billing exposure.

The transaction risk appears from the moment in which the seller quotes a price in foreign currency terms to a potential buyer. When the order is placed, the exposure previously generated is converted into backlog exposure. Backlog exposure remains until the goods are billed, forming an account receivable, which then becomes billing exposure, lasting until the seller is paid.[31]

The Transaction Exposure is a particular type of foreign exchange risk involved in the international trade wherein more than one currency is involved. Explained differently, a risk faced by the company where, while trading internationally, the currency exchange rates may change before making the final settlement is termed as a transaction risk.

Let us suppose that Ceramiche Musa has a receivable of 5m JPY due five months from now. In the meanwhile, the JPY depreciates with respect to the EUR, following that Ceramiche Musa will suffer the loss in cash.

However, in the case of a same amount payable, the company would have gain from a depreciation of the JPY.

Therefore, once the cross-currency agreement for the specific amount of goods and money has been signed by the firms operating in different currencies, the value of the contract is subject to changes related to the fluctuations in the foreign exchange rates. This risk arising from changes in the exchange rates is called transaction exposure.

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[31] *Eiteman et al, Multinational Business Finance, p. 258, 2007*

The larger the time gap between the agreement and the maturity date, the greater is the risk associated with the fluctuations in the foreign exchange rates. Yet, firms could protect themselves against transaction exposure by engaging in hedging techniques.[32]

3.6.2.2 Translation exposure

Being Ceramiche Musa and Italian company, its annual report is in Euros and opening a subsidiary in Japan will make the Yen the functional currency of the subsidiary. Differences in the currencies are used for the presentation and those actually used in the operations will give rise to Translation risks. The company will have to repatriate sales and other items to the parent company properly managing those transactions.

The euro yen exchange rate is described by a pattern showing a volatile development of the currencies relationship during the whole period from the Euro's creation till today.[33] In fact we notice a much higher yearly standard deviation for the EUR/JPY than for the EUR/USD. Based on historical data we should expect more volatile changes with the yen than with the US.

According to a study conducted by Ranaldo, Angelo, Söderlind (2010), the yen can be regarded as a safe haven currency with respect to the dollar. If those results hold, the yen could create a natural hedge if the company is willing to invest in the US and in the case of potential distress in the US market. [34]

Although translation risk can be of major consideration, various tools exist which can be used as a hedge against this type of exposure. Those tools can be distinguished in contractual (futures, forwards and options) and operating hedges (risk sharing agreements, leads and lags in payment terms, back-to-back loans and cross currency swaps).

While consolidating its financial statements, Ceramiche Musa must translate the assets and liabilities of its foreign operations, which are stated in a foreign currency, into its main reporting, in this case the euro. Basically, the foreign stores must restate their local currency into the main

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[32] *http://businessjargons.com/transaction-exposure.html, consulted on August 2017*

[33] *http://www.xe.com/, consulted on August 2017*

[34] *Review of Finance, Angelo Ranaldo and Paul Söderlind, Safe Haven Currencies, Vol. 10, University of St. Gallen Economics Discussion Paper No. 2007-22, pp. 385-407, 2010*

reporting currency so the foreign values can be added to the flagship's store reporting currency denominated balance sheet and income statement.[35]

Usually, it is not possible to eliminate translation risk together with transaction risk. Often, the elimination of one exposure actually generates the other. Since transaction risk involves real cash flows, it is traditionally argued that it should be considered the most significant between the two. As a consequence, companies should not legitimately expose the company to transaction risk at the expense of minimizing or eliminating translation exposure. A major motivation for this rationale is that the translation process does not have a direct response on reporting currency cash flows, and will only have a realizable effect on the net investment upon the sale or liquidation of the assets.[36]

In the process of translating the items denominated in the foreign currency to a demonization in the domestic currency, two issues come up:

- whether the items denominated in foreign currency are converted in the financial statement at the actual exchange rate or at the rate that was in use at the time the transaction occurred (the historical exchange rate);
- whether the profit or loss arising from the rate adjustments should be considered into the current period profit and loss statement or should be postponed.

If any change occurs in the exchange rate from the previous accounting period, it follows that the translation of all the items denominated in the foreign currency will cause foreign exchange gains or losses.

The translation risk involves the profits and the balance sheet values and the way they are recorded; whereas it does not have an impact on the overall value of the firm. In fact, the gains or losses arising from the translation of financial items don't have any significant impact on the

[35] *Butler, Multinational Finance, p. 333 f, 2004*

[36] *Eun et al, International Financial Management, p. 256 f, 2007*

stock prices of the firm. Furthermore, the investors think that this kind of risk can be diversified and so does not require any extra premium for it.[37]

3.6.2.3 Economic exposure

The economic risk, also known as operating exposure, measures any change in the present value of a company arising from changes in future operating cash flows caused by unexpected variations in currency exchange rates. By analysing economic risk, one can observe how changing exchange rates impact the company's operations during months and years, and it is possible to compare its competitive position in comparison with other companies. The analysis of the effects of economic exposure on future cash flows, the objective is to identify the strategic behaviour and operating techniques that the company should adopt to enhance its value in case of unexpected exchange rate variations.[38]

It may follow unexpected exchange rate fluctuations, which could impact the company's competitive position, and eventually the firm's value.

The level of currency risk exposure can be calculated by the sensitivity of future value in home currency terms of the company's assets and liabilities, as well as its operating cash flows, to random moves in the exchange rates. It follows that to measure risk one should forecast and analyse all the company's future individual transaction exposure along with all the company's worldwide competitors' future exposures.[39]

Some practitioners argue that while the effect of random exchange rates on the value of the company's assets and liabilities in terms of home currency is widely understood, there is a little understanding of the effect of volatile exchange rates on operating cash flows. Therefore, the more the economy becomes international and globalization increases, more company are exposed to international competition. In this fashion, fluctuations in exchange rates may deeply

[37] *http://businessjargons.com/translation-exposure.html, consulted on August 2017*

[38] *Eiteman et al, Multinational Business Finance, p. 301, 2007*

[39] *Eun et al, International Financial Management, p. 225 ff, 2007*

alter the relative positions of those companies in both domestic and foreign markets responding to operating cash flows variations.[40]

From a larger perspective, economic risk can be perceived as not only the sensitivity of a company's future cash flows to unexpected variations in foreign exchange rates, but also as the sensitivity to other macroeconomic variables, like interest and inflation rates. Hence, practitioners argue that some aspects of economic exposure have deeper impact for the long run health of a company than variations caused by transaction or translation exposure. Yet, economic exposure is perceived as being subjective rather that an objective risk, as it depends on estimates of future cash flows over an arbitrary time horizon. Therefore, it does not arise strictly from the accounting process, but rather from the operating analysis and thus it includes factors that are of the responsibility of management, such as the interaction of strategies in finance, marketing, purchasing, technology and production.[41]

The operating exposure is very broad in nature, and is associated to most of the investment of the firm. If a change occurs in the exchange rates, the overall value of the firm is affected.

It is challenging to identify operating risk since the cash flow, which depends mostly on the cost of firm's inputs and the prices of its outputs, gets altered in a considerable way with the change in the foreign exchange rates. Moreover, these kinds of risks relate to the unseen challenges from the competitors, entry barriers, etc., that by definition are subjective and are interpreted in a different way by different experts.

It follows that operating exposure may have a substantial influence on the competitive position of the firm. [42]

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[40] *Eun et al, International Financial Management, p. 228 f, 2007*

[41] *Eiteman et al, Multinational Business Finance, p. 302 ff, 2007*

[42] *http://businessjargons.com/operating-exposure.html, consulted on August 2017*

3.7 Assessing the company's main risk

After having listed all the possible risks affecting Ceramiche Musa's business, I will proceed with an analysis of the main type of exposure concerning the company, in order to provide the management with a possible strategy to apply in the event of an expansion to Japan.

3.7.1 Methodology

In order to be able to study the impact of the above-mentioned risks, I will interview the CEO of Ceramiche Musa and we will proceed with a review of the main risk which could come up to the company in case of investing in Japan, assigning a score to each of them based on two parameters. The chosen parameters to determine which is the major risk to take into account at this stage are:

- Its impact on the gross profit
- The probability of occurrence

The risks will be classified from a qualitative point of view, after having assigned them a score between 1 and 5, where 5 is the highest level for each category and 1 is the lowest. For what concerns gross profit, decreases in revenues and increases in expenses will be evaluated. The changes will be measured in the following way:

Score of severity concerning the decrease in sales:

- 1: decrease in sales by 5%
- 2: decrease in sales by 10%
- 3: decrease in sales by 15%
- 4: decrease in sales by 20%
- 5: decrease in sales by 25%

Score of severity concerning the increase in cost of goods sold:

- 1: increase in costs by 5%

- 2: increase in costs by 10%
- 3: increase in costs by 15%
- 4: increase in costs by 20%
- 5: increase in costs by 25%

Instead, probability of occurrence will be measured in the following way:

- 1: once every 5 years
- 2: once every 4 years
- 3: once every 3 years
- 4: once every 1 years
- 5: once every year

3.7.2 Assumptions

In order to get a sense of the dimension for Ceramiche Musa's market in Japan, I will try to estimate the revenues in Japan from the forecasted revenues in Italy for the end of 2017. The annual revenues for Ceramiche Musa at the end of 2016 were about 300,000 EUR and are estimated to be 350,000 EUR at the end of 2017. The population in Italy which is part of the category of high net wealth individuals is 0.3m[43], representing the 0.5%[44] of the population, while in Japan it is 2.7m[43], meaning that the 2.13%[44] of the population is super-rich.

Since the highly wealth individuals in Japan are 9 times those that are in Italy, potentially sales in Japan can reach nine time the sales in Italy, with revenues of:

$$9 \times 350{,}000 = 3{,}150{,}000\ EUR$$

[43] https://www.theguardian.com/business/2016/jun/23/china-japan-super-rich-asia-pacific-north-america-wealth, *consulted on September 2017*

[44] *Google, consulted on September 2017*

That we can simplify to 3m EUR.

From an analysis studied during my internship in the company, we derived the gross margin, which was evaluated by taking gross profit over sales for the years from 2010 to 2016. Gross profit is calculated by subtracting discounts and cost of goods sold from revenues.[45] Calculations provided a margin of more than 55% over sales, however for simplicity I will consider margins of 55%. It follows that the forecasted gross profit for the Japanese market are:

$$3m \times 55\% = 1.65m\ EUR$$

As a consequence, cost of goods sold can be evaluated as Revenues less Gross Profit:

$$3m - 1.65m = 1.35m\ EUR$$

or as the remaining percentage of Revenues which is not included in the Gross Profits:

$$3m \times (1 - 55\%) = 3m \times 45\% = 1.35m\ EUR$$

In the analysis, I will stress the forecasted gross profit as a consequence of the projected impact of each risk, trying to understand which kind of risk may have a greater impact on the company's result, and thus which risk should be provided mitigation strategies ex ante in the context of a feasibility study.

3.7.3 Presentation of the risk scenarios

The following risk scenarios will be presented to the CEO of the company, who will have to assign the scores related to severity and probability of occurrence for each scenario.

3.7.3.1 Political Risk

The government introduces quota for imported ceramic tiles, so the items sold are restricted to a certain quantity lowering sales revenues.

[45] *Appendix, table 1*

3.7.3.2 Financing Risk

Due to financing problems, the firm cannot pay for the required amount of inventory or raw materials and sales revenues decrease following a decrease in goods available for sale.

3.7.3.3 Product Risk

Problems during transportation ruins material increasing the cost of the inventory that has to be replaced.

3.7.3.4 Counterparty Risk

An insolvent counterparty doesn't supply raw materials, that has to be re-ordered doubling the cost of the inventory for that order.

3.7.3.5 Operating Risk

Natural disasters, such as earthquakes that are very common in Japan, can ruin materials increasing the cost of the inventory.

3.7.3.6 Currency Risk

If the JPY appreciates with respect to the EUR and the company has receivables from clients in JPY, the revenues in EUR will be lower, while if the JPY depreciates and the company has payables in JPY to a Japanese supplier, the cost in EUR would be higher. Summing up in the table that follows the different scenarios we can notice that some of them include a reduction in sales revenues, while others in cost of goods sold. Differs from the others the case of currency risk which allows for both of the two events to happen.

RISKS	↓sales	↑costs	Scenario
Political risk	x		The government introduces quotas for imported ceramic tiles
Financial risk	x		Due to financing probles, less funds are available for production
Product risk		x	Problems during transportation ruins material increasing the cost of the inventory
Commercial risk		x	An insolvent counterparty doesn't supply raw materials, that has to be re-ordered doubling the cost of the inventory for that order
Operating risk		x	Natural disasters, such as earthquakes that are very common in Japan, can ruin materials in creasing the cost of the inventory
Currency risk	x	x	If the JPY appreciates with respect to the EUR and the company has receivables from clients in JPY, the revenues in EUR will be lower, while if the JPY depreciates and the company has payables in JPY to a Japanese supplier, the cost in EUR would be higher.

3.7.4 The Analysis

This paragraph will show the results of the interview with the CEO of Ceramiche Musa. Each score will be associated with a scenario and its related probability, which results from a score as well.

In order to be able to compare the risks, the scenarios will be analyzed in monetary terms according to the scores assigned. The results will be compared to assess the major risk to be considered before formulating the expansion strategy, so that a useful set of mitigation strategies can be provided to the company ex ante.

The scores assigned during the interview with the CEO were the following:

RISKS	Severity (1-5)	Probability (1-5)
Political risk	2	1
Financial risk	1	1
Product risk	3	2
Commercial risk	2	1
Operating risk	3	2
Currency risk	2	2

Since the risks affect the gross profit differently according to whether they impact sales or cost of goods sold, I will analyze them distinctly according to this feature. Let us first consider those risks acting by decreasing sales.

As introduced in the paragraph "methodology", we want to see the impact on gross profit in monetary terms to be able to compare the shocks.

Each score is attributed with a corresponding percentage decrease in sales, similarly to the scores attributed to probability which are associated to an annual probability percentage.

The following formula used to determine the level of sales after introducing each risk is the following:

$$R_{after\ risk} = R_{before\ risk} \times (1 + \gamma) \times (1 - \rho)$$

Where $R_{before\ risk}$ is the value of sales revenues without considering the impact of the risks; $R_{after\ risk}$ is the value of sales revenues after introducing the risks; γ is the decrease in sales; and ρ is the probability.

The resulting numbers are provided in the following table:

Risks related to ↓ in sales	score of severity	% ↓ in sales	score of probability	probability	sales after risk
Political risk	2	-10%	1	20%	2,16
Financial risk	1	-5%	1	20%	2,28
Currency risk	2	-10%	2	25%	2,03

Then risks acting on cost of goods sold will be analyzed.

The following formula used to determine the level of expenses after introducing each risk is the following:

$$C_{after\ risk} = C_{before\ risk} \times (1 + \delta) \times (1 + \rho)$$

Where $C_{before\ risk}$ is the cost of goods sold without considering the impact of the risks; $C_{after\ risk}$ is the cost of goods sold after introducing the risks; and δ is the decrease in sales.

The resulting numbers are provided in the following table:

Risks related to ↑ in costs	score of severity	% ↑ in costs	score of probability	probability	costs after risk
Product risk	3	15%	2	25%	1,94
Commercial risk	2	10%	1	20%	1,78
Operating risk	3	15%	2	25%	1,94
Currency risk	2	10%	2	25%	1,86

After having determined the new level of either sales or expenses, or both of them in the case of currency risk, I will calculate the gross profits generated by these numbers.

Two formulas will be used in this case, according to whether sales or expenses have changed:

When the impact is on revenues, gross profit is determined by:

$$\pi_{after\ risk} = R_{after\ risk} \times 0.55$$

$\pi_{after\ risk}$ is the gross profit after risk, which is calculated by multiplying the revenues after risk with the estimated margins percentage of 55%.

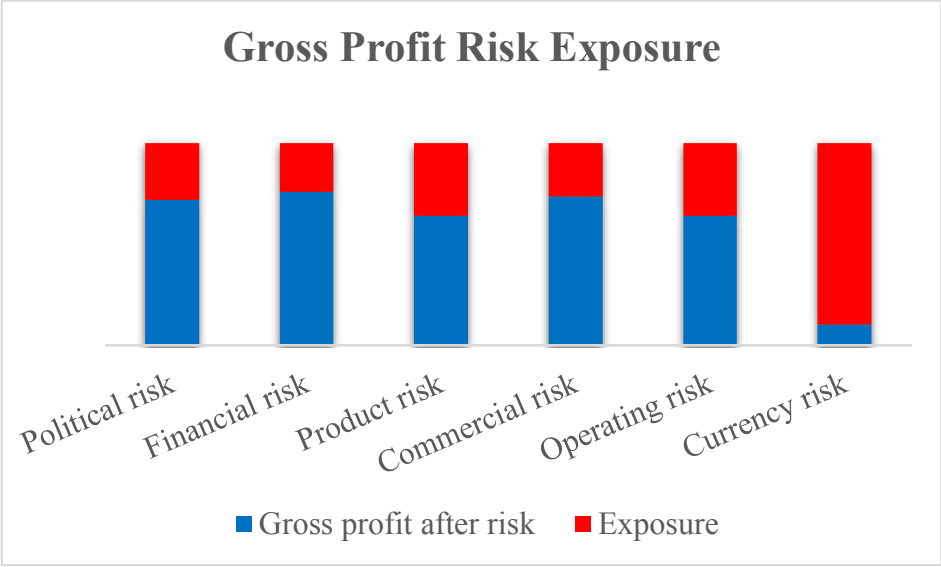
When instead costs are affected, gross profit is:

$$\pi_{after\ risk} = R - C_{after\ risk}$$

The resulting numbers are provided in the following table:

All Risks	Revenues	Costs	Gross Profit	Exposure
Political risk	2,16	0,97	1,19	-28%
Financial risk	2,28	1,03	1,25	-24%
Product risk	3	1,94	1,06	-36%
Commercial risk	3	1,78	1,22	-26%
Operating risk	3	1,94	1,06	-36%
Currency risk	2,025	1,86	0,17	-90%

If we summarize the results on a graph showing the impact of each risk on the forecasted gross profit, we can easily notice that the forex risk is the one showing the highest results in terms of exposure. In fact, it could have an impact on gross profit worth 90% of its value. Of course, we should consider the other side, and the upward potentials associated with currency risk, however even the positive risk is considered a risk, and thus the part of the gross profit subject to exposure is large both positively and negatively. So, it is important to find strategies that can mitigate the downside exposure while letting for upward exposure to happen.



In the chapter that follows, I will further break down this type of risk, providing the company with some strategies which could help mitigating it.

4 CURRENCY RISKS MANAGEMENT STRATEGIES

4.1 Interest Parity

Before explaining the details of the strategies that Ceramiche Musa can use to hedge currency risk, first I would like to go through the theory of Interest Rate Parity as it is a concept of major importance while taking into account which strategy should be used.

The Interest Rate Parity theory (IRP) says that the forward rate should be different from the spot rate in a condition of equilibrium, and the difference is an amount equal to the interest rate differential between the two countries.[46]

IRP is said to be a "no arbitrage condition". In fact, if the condition doesn't hold, an astute trader would be in the position to make unlimited money exploiting the arbitrage opportunity.

4.1.1 Covered Interest Parity

The CIP relation is:

$$F_{t,T} = S_t \times \frac{(1 + r_{t,T})}{(1 + r^*_{t,T})}$$

It can be rewritten as:

$$\frac{1}{S_t} \times \left(1 + r^*_{t,T}\right) \times F_{t,T} = (1 + r_{t,T})$$

which means that the cost a T of borrowing HC 1 abroad must be equal to the cost at T of borrowing HC 1 at home. So, according to CIP, if you hedge currency risk appropriately, borrowing cost should be the same across countries. However, we should consider that this is true only in frictionless markets.

The CIP relation can be interpreted also in the way that forward contracts can be replicated through transactions in the following markets:

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[46] *Notes from Nikolaos Tessaromatis PhD, Professor of Finance, Edhec Business School and EDHEC Risk Institute, course of Corporate Treasury Management, Fall 2016*

- The spot market;
- The domestic market;
- The foreign money markets.

When CIP relation doesn't hold we have covered interest arbitrage.

Several tools can be used to manage currency risk. We can distinguish between:

- External currency risk management strategies
- Internal currency risk management strategies

4.2 External currency risk management strategies

As I explained in the previous chapter, the exposure to currency risk may affect current business transactions, future business transactions and translations in the financial statement. However, some strategies can be used to deal with those risks. Companies can use a number of external methods to manage currency risk, which require the application of financial derivatives.

The term derivative comes from the fact that the value of these instruments is taken from an underlying asset like a stock or a currency. By using these instruments, one can cut the cost related to the management of corporate cash flow, through a method known as hedging. Financial market hedging instruments are:[47]

- Currency Forwards
- Currency Futures
- Currency Swaps
- Currency Options
- Money Market Hedge

[47] *Butler, Multinational Finance, p. 296, 2004*

4.2.1 Currency Forwards

By using forward contracts, a company can eliminate exchange rate risk when it has a deal to receive or make a foreign currency payment, and the transaction arises in the future. Essentially, a forward contract involves pre-selling or buying a determined amount of a certain type of currency at a rate which is determined now, for a transaction happening at a specified time in the future. By using this approach, it is possible to completely remove the exposure to currency fluctuations by locking in the exchange rate quoted today through the forward market.[48]

Forward contracts are the most widely used among the external hedging strategies. Banks provide for forward contracts in both short and long-dated time frames, in a variety of different currencies for various kinds of situations. Yet, it is important to consider that, even though the exchange risk is reduced through this method, the company is prevented from gaining if currency fluctuations are in favour, as the exchange rate is locked in with the forward rate quotation.[49]

For example, assume Ceramiche Musa has an order to deliver some material to a client in Japan with a sales value of 10 million JPY. The parties agree on payment in three months. The current currency spot rate is JPY 130 / EUR 1, which means the sales value is yen 10m / 130 = 76.9k EUR. Assuming Ceramiche Musa is concerned that the yen will depreciate in value, it will turn to the forward market offered by banks and similar financial institutions which offer forward contracts.

If the company in analysis believes the forward market is predictable, it may decide to sell its anticipated yen 10m receipt for JPY 10m / 132 = 75.7k EUR, which can be collected after the date of payment, that is three months. In this case, the hedging method cost the company (euro 76.9k-75.7k) approximately 1k EUR, which is more or less 1.5% of the total sales value. However, if the yen would have depreciated to an exchange rate of yen 140/euro 1, the hedging strategy would have protected the company from losses worth over 5k EUR.

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[48] *Smith et al, The Link Between Price and Profit Margin in a Global Market, Volume 8, 2005*

[49] *Pike et al, Corporate Finance and Investment, p. 469, 1999*

The management of the company should assess whether or not this is a lucrative deal, as there is always the possibility that the sales currency would not depreciate at all, or possibly even appreciate, in which case the company would lose revenues.[50]

The value of a forward contract can be evaluated in the following way:

- at initiation date the value of the contract is:

$$V_t = 0$$

- at maturity, the value is:

$$V_t = S_T - T_{t,T}$$

- at time t+1 the value is:

$$V_T = S_t + \frac{1}{(1 + r^*_{t+1,T})} - \frac{F_{t,T}}{\left(1 + r_{t+1,T}\right)} = \frac{F_{t+1,T}}{1 + r_{t+1,T}} - \frac{F_{t,T}}{1 + r_{t+1,T}}$$

Forward contracts have two major limitations:

- default risk;
- illiquid secondary market

Futures contracts have been designed to address these kinds of limitations.

4.2.2 Currency Futures

A currency futures contract (also called futures) is a standardized contract between two parties representing an obligation to transfer a predetermined amount of a predetermined currency at a predetermined date for an agreed price (the futures strike price) determined in the contract. By definition, a future contract can be filed for any type of product or commodity, including financial instruments and currencies. Futures contacts perform in a matter that is similar to forward contracts, although they have some features that differ.

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[50] *Pike et al, Corporate Finance and Investment, p. 470, 1999*

Some characteristics are specific to currency futures:[51]

- Currency futures are marketable instruments and are traded on organized futures markets.
- They can be liquidated before the terminal date, whereas forward contracts must end until maturity. In this way, they address the problem of illiquidity that characterizes forward contracts.
- Futures are somewhat inflexible, being available for only a limited range of currencies and for predetermined maturity dates.
- The deals occur in standard lot sizes, or contracts.
- Futures require a down-payment of margin worth about 5 percent of the contract value, while forward contracts involve a single payment at maturity.
- They are usually cheaper than forwards contracts, and require a small commission rather than a buy/sell spread.

Yet, it is important to enlighten that the main difference between the two hedging strategies lies within the settlement price. Considering that the price of a forward contract is linked to the spot exchange rate, the settlement price of a futures contract can fluctuate according to variations in the futures market.

The positive aspect of a futures contract is that there is no counterparty risk since a clearing house guarantees transactions and consequently more liquidity is available. Conversely, the negative side is that it could be difficult to hedge the risk perfectly as the number of maturity dates is limited.

Ceramiche Musa could hedge its position with futures in the same way it could do it with a forward contract, provided that futures exist with size and maturity equal to the company's position to hedge.

[51] *Pike et al, Corporate Finance and Investment, p. 472 f, 1999*

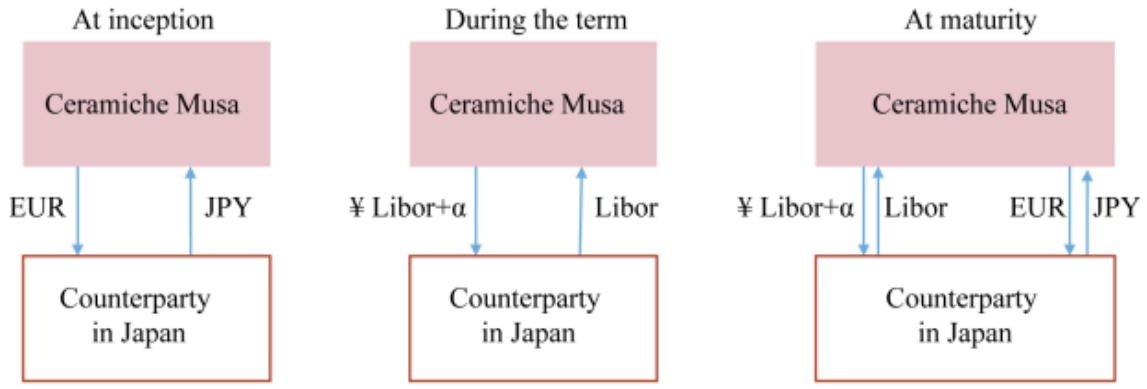
4.2.3 Currency Swaps

Usually, currency swaps are adopted to replace a cash flow scheduled in a certain currency with a flow in a more preferred currency, which is often the one used by the company to register generated operating revenues.

Sometimes companies raise capital in currencies that are different from the one in which they generate significant revenues or generate other natural cash flows. The main reason behind this fact is cost. In fact, a company might find it cheaper to borrow in a specific currency in a particular period, because of favourable conditions. However, after having raised the capital, the company might be willing to swap the repayment into a preferred currency, that is the one in which it generates operating revenues.[52]

The currency swaps hedging strategy involves two companies which have to be matched considering their mutual requirements in terms of type and amount of currency, as well as in terms of financing. When each company has a differential borrowing advantage in one currency, and the advantage can be transferred to the other company, the final agreement can be settled. This condition is crucial as a currency swaps involves an interest swap as a matter of usual practice.

Let us consider that Ceramiche Musa, being an Italian company finds it easier to raise capital in euro from an Italian bank, let us also consider that the company needs that capital to finance its expansion strategy in Japan, thus the money will be needed in yen. Ceramiche Musa can swap its loan with another company which has a better borrowing capacity in yen and worse in euros.



[52] *Eiteman et al, Multinational Business Finance, p. 480, 2007*

4.2.4 Currency Options

A foreign currency option is a contract that gives the purchaser the option the right, but not the obligation, to buy or sell a given amount of foreign exchange at a fixed price per unit for a specified time period.

The buyer of an option is 'the holder', whereas the seller is referred to as 'the writer'.[53]

Any option contains three different price elements:

- the "exercise (strike) price", which is the exchange rate at which the foreign currency can be purchased or sold;
- the "premium", which is the cost or value of the option itself and finally;
- the "underlying (actual) exchange spot rate" in the market.

There are two types of currency options:

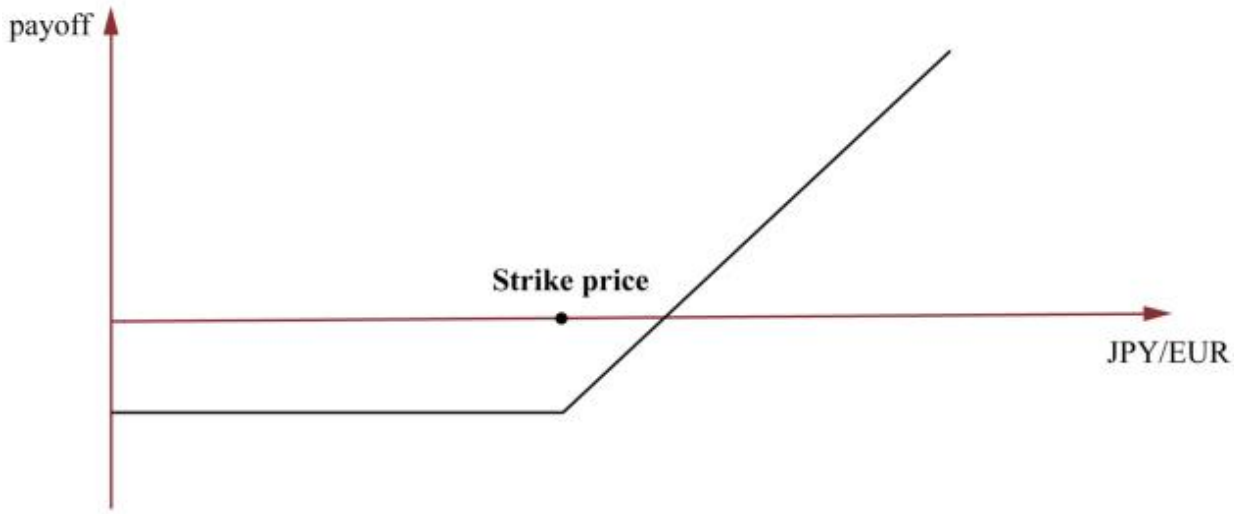
- Call Options
- Put Options

4.2.4.1 Call Options

A currency call is a contract giving the holder the option to buy a stated amount of foreign currency at a predetermined price from a counterparty.

Call options should be used to hedge account payable. Suppose that Ceramiche Musa has payables worth 1m JPY. The payoff of a currency call option is shown in the graph.

[53] *Ross et al, Corporate Finance, p. 618 f, 2005*



Let us compare a call option with a forward contact. In the forward contract, you are allowed to buy the 1m JPY at maturity with the exchange rate of 130 JPY/1 EUR, exchanging 7,692 EUR for the JPY, on the other side the call option allows you to give up 7,692 EUR at maximum by using the exchange rate of 130 JPY/1 EUR when the actual exchange rate is lower or equal to 130 JPY/1 EUR and by not exercising the option when the exchange rate is greater than 130 JPY/1 EUR.

It is important to take into account the premium price.

Let us say that the strike price is 130 JPY/1 EUR, when the exchange rate JPY/EUR is higher than the strike price, for example the actual exchange rate is 132 JPY/1 EUR, we do not exercise the option as 1m JPY is worth less euros when the exchange rate is 132 than 130. This is shown in the right side of the graph. The company starts to make profit with respect to the forward contract when the exchange rate is such that the payables in euros plus the money paid for purchasing the option (the premium) are lower than the payables in euros if the exchange rate was 130 JPY/1 EUR.

In this case if the premium was 100 EUR, the company makes profit when:

$$\frac{1m\ JPY}{X} + 100 < \frac{1m\ JPY}{130} \rightarrow X > 131.7$$

for example, if the actual exchange rate is 127 JPY/1 EUR, the amount gave up in euros will be:

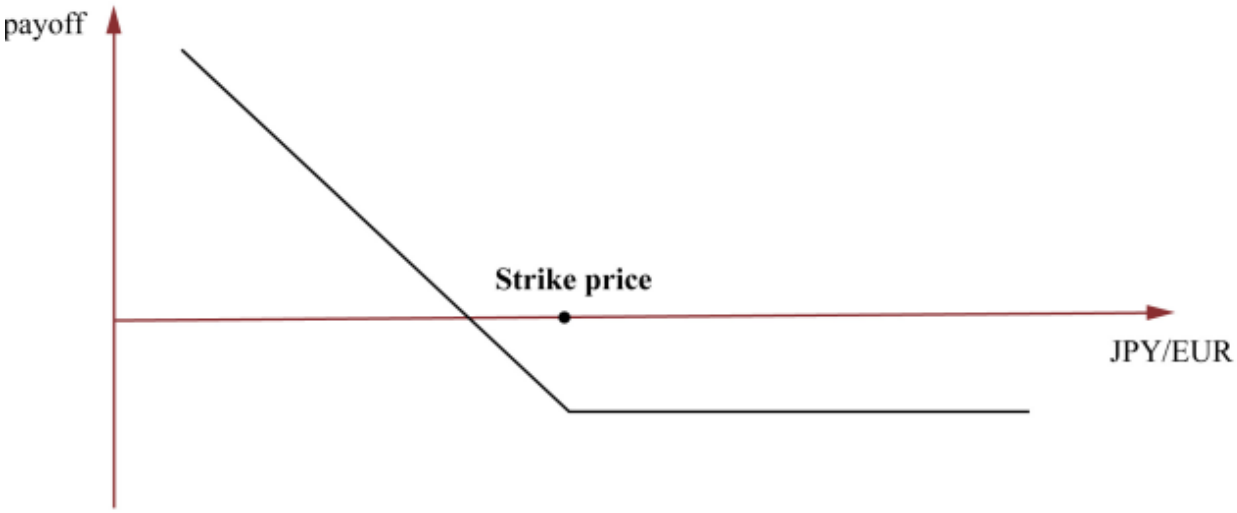
$$\frac{1m\ JPY}{132} + 100 = 7.675k\ EUR$$

compared to the 7.692k EUR collected through the forward contract.

4.2.4.2 Put Options

A currency put is a contract giving the holder the option to sell a stated amount of foreign currency at a predetermined price from a counterparty.

Put options should be used to hedge account receivables. Suppose that Ceramiche Musa has receivables worth 1m JPY. The payoff of a currency put option is shown in the graph.



Let us compare a put option again with a forward contact. In the forward contract, you are allowed to sell the 1m JPY at maturity with the exchange rate of 130 JPY/1 EUR, getting 7,692 EUR, whereas the put option allows you to get at least 7,692 EUR by using the exchange rate of 130 JPY/1 EUR when the actual exchange rate is greater or equal to 130 JPY/1 EUR and by not exercising the option when the exchange rate is lower than 130 JPY/1 EUR.

In the same way, as in the call option case, we should consider the premium price.

Let us say that the strike price is 130 JPY/1 EUR as before, when the exchange rate JPY/EUR is lower than the strike price, for example the actual exchange rate is 128 JPY/1 EUR, we do not exercise the option as 1m JPY is worth more euros when the exchange rate is 128 than 130. This is shown in the left side of the graph. The company starts to make profit with respect to the forward contract when the exchange rate is such that the receivables in euros minus the money paid for purchasing the option (the premium) are bigger than the receivable is euros if the exchange rate was 130 JPY/1 EUR.

In this case if the premium was 100 EUR, the company makes profit when:

$$\frac{1m\ JPY}{X} - 100 > \frac{1m\ JPY}{130} \rightarrow X < 128.33$$

for example, if the actual exchange rate is 127 JPY/1 EUR, the amount collected in euros will be:

$$\frac{1m\ JPY}{127} - 100 = 7.774k\ EUR$$

compared to the 7,692 EUR collected through the forward contract.

Currency option have some features making them more attractive with respect to futures and forwards:

- They are more liquid;
- They can be designed to hedge non-linear payoffs;
- They are better suited that forwards and futures to hedge cash-flows with uncertain timing;
- They are more suited than forwards and futures to hedge cash-flows that are contingent on some event;
- They are better suited to hedge accounting risk depending on the average exchange rate;
- They can be used more easily to speculate on the exchange rates.

If Ceramiche Musa is worried about the possibility of the yen to depreciate with respect to the euro, it could purchase a put option on the yen at a fixed cost on the base of its prediction. In this way if the yen actually depreciates with respect to the euro, Ceramiche Musa will exercise the option, hedging its position; on the other side if the yen doesn't depreciate or if it appreciates, Ceramiche Musa won't exercise the option.

In this way, with a small upfront investment, Ceramiche Musa has been able to mitigate a possible risk arising from the depreciation of the yen.

4.2.4.3 Range forward

A range forward arises from a short position of an out-of-the money foreign currency call option designed to finance the long term out-of- the money put option, aimed at providing the desired downside protection.

When the nominal amount of the put and the call options are the same, the two exercise prices are chosen so that the premiums are equal.

A range forward contract allows companies to protect against unfavourable currency fluctuations, and at the same time allowing limited participation in favourable market movements without upfront premium.

4.2.4.4 Participating forward exposure hedge

The participating forward is a combination of options that allows companies to share potential upside movements, and at the same time providing option-based downside protection, in all the transaction the premium is zero. The participating forward is built in two steps:

- First, buy a put option with a strike price which is lower to the forward rate for the full amount of the long currency exposure;
- Then sell a call option with a strike equal to the put option, for a portion of the total currency exposure (less than 100% coverage).[54]

4.2.5 Money Market Hedge

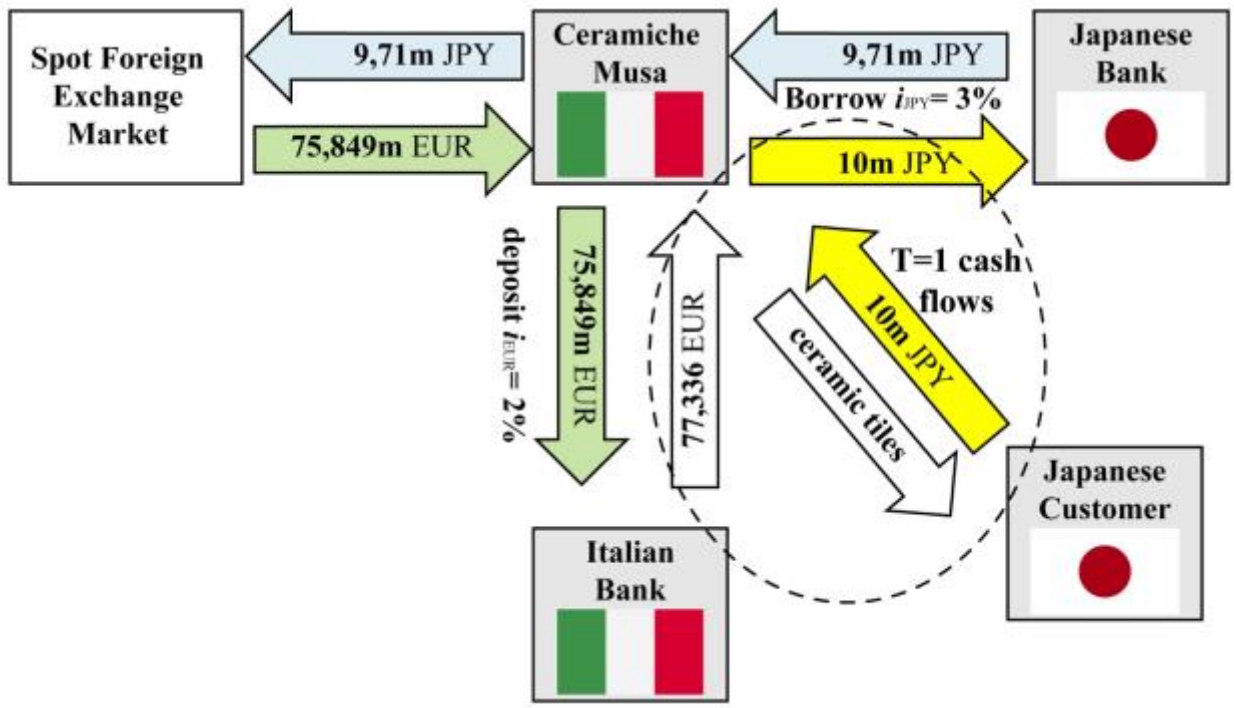
The money market hedge strategy is similar to the forwards, in the matter that they both involve a contract and a source of funds aimed at fulfilling the contract. With money market hedge, the contract is a loan agreement.

[54] *Notes from Nikolaos Tessaromatis PhD, Professor of Finance, Edhec Business School and EDHEC Risk Institute, course of Corporate Treasury Management, Fall 2016*

Let us Ceramiche Musa borrow in yen and exchange the amount into euros. The cost of money market hedge is determined by different interest rates whereas in a forward contract it derives from the forward rate quotation.

The method for exercising the money market hedge is to borrow the amount in yen, then immediately convert the loan into euros, which is Ceramiche Musa's operating currency and then repay the yen loan within a cash settlement date with the proceeds of the receivable transaction.[55]

Let us say that Ceramiche Musa has a receivable from a Japanese client worth 10m yen in one year from now.



To hedge this position through the money market hedge strategy, the company should borrow from a Japanese bank the present value today of the 10m yen one year from now (the yellow arrow on the right in the graph). Suppose that the interest rate for borrowing in the Japanese bank is 3%, so the present value today is:

[55] *Eiteman et al, Multinational Business Finance, p. 263 f, 2007*

$$PV = \frac{10m\ JPY}{(1 + 3\%)} = 9.71m\ JPY$$

The present value today of the 10m yen is 9.71m yen.

Thus, Ceramiche Musa should borrow this amount and then invest it in the spot foreign exchange rate market to convert it into euros (the yellow arrow on the left).

Let us assume that the exchange rate today is yen 128/euro 1. The amount in euro will be 75,849 euro (the transaction is described by the green arrow on the top).

Then the firm should deposit this amount in a European bank, let's say an Italian bank (the transaction is described by the green arrow on the bottom). Suppose that the annual interest rate for deposit is 2%.

$$FV = 75k\ EUR \times (1 + 2\%) = 77k\ EUR$$

In one year, money will be worth 77,336 euro (the blue arrow).

One year after the beginning of the transaction, Ceramiche Musa will collect the 10m yen from the Japanese customer, that will be transferred to the Japanese bank to repay the debt; at the same time the company will receive the 77k in euros from the Italian bank, having hedged completely the transaction.

This technique can be used provided that interest parity does not hold and that counterparty risk is negligible.

4.3 Internal currency risk management strategies

When the company want to hedge currency risk within the corporate group itself, internal currency risk management strategies are used.

Those hedging techniques adopt features of the company's trading relationships without any need to recline on either external currency or money markets and accordingly they usually are understandable in both concept and operations.

We can distinguish between four different types of internal currency risk management strategies:

- Netting
- Matching
- Lead & lag
- Choice of invoice currency

4.3.1 Netting

The strategy of netting requires to offset the value of multiple positions or payments due to be exchanged between two or more parties, and it can be used to determine which party is owed remuneration in a multiparty agreement.[56]

The technique of netting reduces risk as well as saves costs of transfer and commission, although it requires the same currency to flow two ways.[57]

Netting can be divided into:

- Bilateral netting
- Multilateral netting

4.3.1.1 Bilateral Netting

Bilateral netting applies when couples of companies that operate in the same group net off their own positions with respect to payables and receivables, without involving a central treasury.

4.3.1.2 Multilateral Netting

Multilateral netting is carried out by a central treasury with the subsidiaries interacting with the head office.[58]

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[56] *http://www.investopedia.com/terms/n/netting.asp, consulted on September 2017*

[57] *Pike et al, Corporate Finance and Investment, p. 467, 1999*

[58] *Pike et al, Corporate Finance and Investment, p. 467 f, 1999*

Ceramiche Musa could use the strategy of netting if it happens to have both payable and receivables in yen. For example, if it owes a payable account to a supplier in Japan or for a rental payment, whereas receivable could be referred to some clients.

In this case Ceramiche Musa could offset its exposure with the technique of netting. However, it is exposed to counterparty risk. In fact, if the account receivable is subject to risk of default by clients, the payable account suffers from this kind of exposure.

4.3.2 Matching

The strategy of matching is similar to that of netting, except that the former involves third parties instead of foreign subsidiaries.

By applying this strategy, the company aims at matching its currency outflows with the same amount and time of its expected currency inflows. [59]

Ceramiche Musa could hedge its position with the strategy of matching in a similar way to what it would have done with Netting. However, in this case the net off is not internal to the company, but it involves an agreement with another firm. It might be used to hedge either receivables or payable, matching with the other company's opposite account. Again, the firm would be exposed to counterparty risk in both situations. If Ceramiche Musa wants to hedge a receivable position, it could agree to match with a company trying to hedge a payable position. If the party owing the account to Ceramiche Musa defaults, the firm won't be able to fulfil its agreement with the other company. On the other side, if Ceramiche Musa wants to hedge a payable position, it is subject to counterparty risk from the side of the other company.

4.3.3 Lead & lag

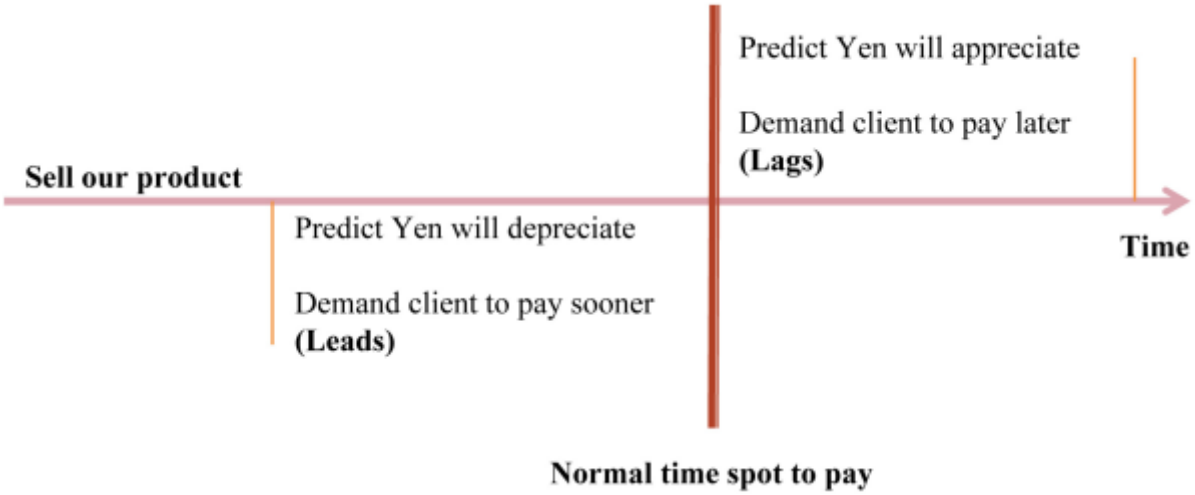
Another operating strategy that can be used by companies to hedge their position is the lead and lag method for foreign currency receipts and payments. Leading means to paying or collecting cash early, whereas with lagging we intend paying or collecting late.

Ceramiche Musa should be willing to lead soft currency receivables, while at the same time lagging hard currency receivables in order to avoid losses from depreciation concerning the soft

[59] *Pike et al, Corporate Finance and Investment, p. 468, 1999*

currency and benefits from the appreciation with respect to the hard currency. Similarly, it should try to lead hard currency payables while lagging soft currency payables.[60]

This technique should be used under the situation in which it is estimated that the JPY would either depreciate or appreciate in the future



4.3.4 Choice of invoice currency

The strategy choice of invoice currency allows companies to shift, share or diversify the currency risk. Let's say, if the company invoices in its own currency, it does not deal with the forex risk any longer. However, we have to consider that the risk hasn't disappeared, but it has shifted from the company to the buyer. Yet, instead of entirely shifting the exposure to the buyer, the company can decide to share the risk by invoicing half of the bill in its accounting currency and the other half in the buyer's currency, thus reducing the exposure by half.

Forex rate range	Ceramiche Musa	Client
R1>x2	Bear 100% exchange cost	
R1<x1		Bear 100% exchange cost
X1<r1<x2	Bear 50% exchange cost	Bear 50% exchange cost

[60] *Eun et al, International Financial Management, p. 205, 2007*

In order for the strategy to be effective, the chosen invoice currency has to be presented together with the sales quote, or even be included in the sales contract as a clause.

However, many companies may not be able to adopt this kind of risk shifting, as they could be worried of losing sales to competitors. Only a company with great market power is allowed to use this method.[61]

Being Ceramiche Musa a small company, it is unlikely that it would be able to use this strategy, at least for its very first period. Thus, I wouldn't recommend taking into account this technique.

4.4 Motivations for currency risk management strategies

As it was mentioned at the beginning of this chapter, currency risk management techniques are not just a hedging tool within finance, but also a strategy. Like to business-related strategies, there are some motivations for using as well as for rejecting them.

The management should recognize both the risks and the benefits associated with certain strategies, and therefore the motivations concerning these techniques might play an important role. It can be argued that in relation to today's business environment, three specific reasons exist that should be considered relevant, namely:

- The increase of imports in Japan
- The cost/benefit of currency risk management strategies.

4.4.1 The increase of imports in Japan

As of September 2017, imports to Japan jumped by 15.2 percent from a year earlier to JPY 6,164.4 billion in August of 2017. Among the major exchange partners, imports growing at a faster pace are from China (13.8 percent), Australia (51.8 percent), Taiwan (23.9 percent), and the EU (12.3 percent).[62]

[61] *Eun et al, International Financial Management, p. 204 f, 2007*

[62] *https://tradingeconomics.com/japan/imports, consulted on September 2017*

This incredible increase in imports could lead to increasing competition between foreign firms exporting to Japan, thus a correct use of the currency risk management strategies could be a competitive advantage with respect to the foreign competitors.

4.4.2 Cost/benefit of currency risk management

A final reason for the use or not of the currency risk management techniques comes from analysing the costs versus the benefits of the strategy. Such technique and its application for currency risk management is something that comes far from the usual business accounting skills and consequently could require specialized awareness of the subject. In turn, this could require companies to hire or employ specialized consultants, which could be largely expensive.

What is more, it should be considered the cost of the hedging technique itself. Even if some external hedging strategies are more expensive than others, none of the currency risk management strategy that is completely free. Every tool includes a cost, and when you consider also the fact that the currency can move in a favourable direction after the company has paid for consultants and financial derivatives might be proven to be an exposure not worth the possible gain. Moreover, even if on the other side internal hedging strategies might not require a cost themselves, a company can be in the position to afford costs for implementing such techniques which might require changes in business systems and financial control.

In a similar way, the gains arising from implementing currency risk management strategies might not be worth the expenses. Even when hedging strategies have been made correctly and the currencies move towards the predicted direction, the exchange rate itself might move so little that the cost for the hedging outmatches the revenues gained.

Taking all these factors into account, it can be understood why there are both reasons for using as well as for rejecting the implementation of currency risk management. The techniques of currency risk hedging from a point of view can be seen as being too much of a risk gamble for the company, if it is uncertain whether or not the gains will actually cover the costs. Yet, if the currency movements are easy to predict, hedging might reveal itself to be a very useful tool.

4.5 The choice of the strategy for Ceramiche Musa

After having listed all the possible options that Ceramiche Musa has to manage its currency risk, as well as the motivations for the use of those strategy, I will analyse the different techniques, trying to determine which is the best option for the company.

4.5.1 Summary of the pros and cons of all the strategies

4.5.1.1 Currency Forwards:

- PROS: a customized contract that could perfectly satisfy Ceramiche Musa's hedging requirement.
- CONS: they are faced with default risk from counterparty and if the predictions about the volatility of the exchange rate are not correct, can result in a loss for the company.

4.5.1.2 Currency Futures

- PROS: unlike the forwards contract, futures are exempted from counterparty risk since transactions are guaranteed by the clearing house and more liquidity is available.
- CONS: the number of maturity dates is limited which may not contribute to perform a perfect hedge for what concern the company's needs, and similarly to forwards, the value is largely dependent on the predictability of the movements in the exchange rate.

4.5.1.3 Currency Swaps

- PROS: Swaps can be mutually beneficial since a domestic company might be able to borrow on more favourable terms than Ceramiche Musa in Japan.
- CONS: it might be difficult to find a willing counterparty and some companies might not be available for long-term hedging.

4.5.1.4 Currency Options

- PROS: potential loss are limited, whereas potential gains are unlimited and they

require low up-front cash.

- CONS: the option premium may vary, making the cost vary accordingly.

4.5.1.5 Money Market Hedge

- PROS: perfect hedge.
- CONS: it is based on covered interest arbitrage.

4.5.1.6 Netting

- PROS: it doesn't require external transactions.
- CONS: exposed to counterparty risk and the company needs to have both payables and receivables in JPY.

4.5.1.7 Matching

- PROS: since a third party is involved, the company doesn't need to have both payable and receivables.
- CONS: it is subject to counterparty risk and the same amount and timing of cash flows for the two companies must be found.

4.5.1.8 Lead & lag

- PROS: Can be used to avoid further losses on the exchange rate.
- CONS: If the prediction of change rate was biased, the loss would enlarge.

4.5.1.9 Choice of invoice currency

- PROS: forex risk completely disappears.
- CONS: Can be used only by a company with great power.

4.5.2 Proposed solution

Given the peculiarity of the company and of the market in which it wants to operate, I would recommend considering currency options and currency swaps as the preferred hedging strategies.

In fact, being Ceramiche Musa a small company, it won't be able to use the internal strategy "choice of invoice currency".

Moreover, the unpredictability of the JPY/EUR exchange rate makes the currency futures, currency forwards contract and the internal strategy of lead and lag risky rather than risk hedging strategies.

In addition, I wouldn't recommend money market hedge strategy as it requires a condition of arbitrage, which is generally difficult to be detected.

What is more, the internal strategies of netting and matching are conditional to the presence of an account balancing the one to hedge, in the former internal to the company, while in the latter bringing in a third party. Also, those strategies are largely exposed to counterparty risk.

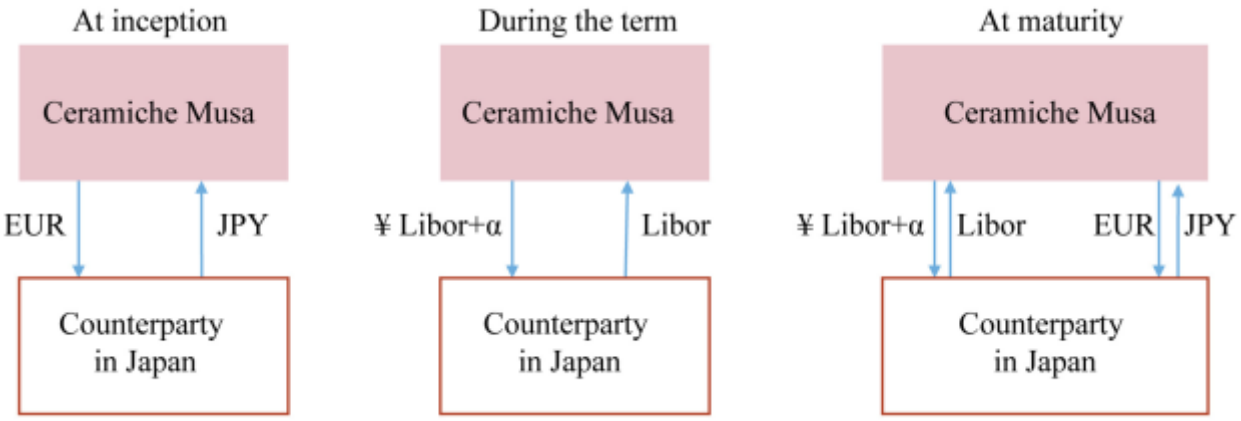
4.5.2.1 Currency Swaps

Ceramiche Musa will find it easier to raise capital in EUR from an Italian bank to finance its expansion strategy in Japan, yet money will be needed in yen. Instead of changing the raised funds into JPY through an intermediary paying for huge commissions, the company can swap its loan with another company which has a better borrowing capacity in JPY and worse in EUR.

At inception Ceramiche Musa would exchange the principal of loan in euro for a principal amount in JPY with the counterparty. The exchange of principal amounts is made at the market rates.

Over the life of the loan, Ceramiche Musa makes interest payments in JPY, and in exchange it receives the interest in EUR. In this way, the company can hedge its receivables' position in JPY using the amount to pay the loan interests. At the same time, interests are received in EUR, which is the home currency of the company, thereby hedging the position.

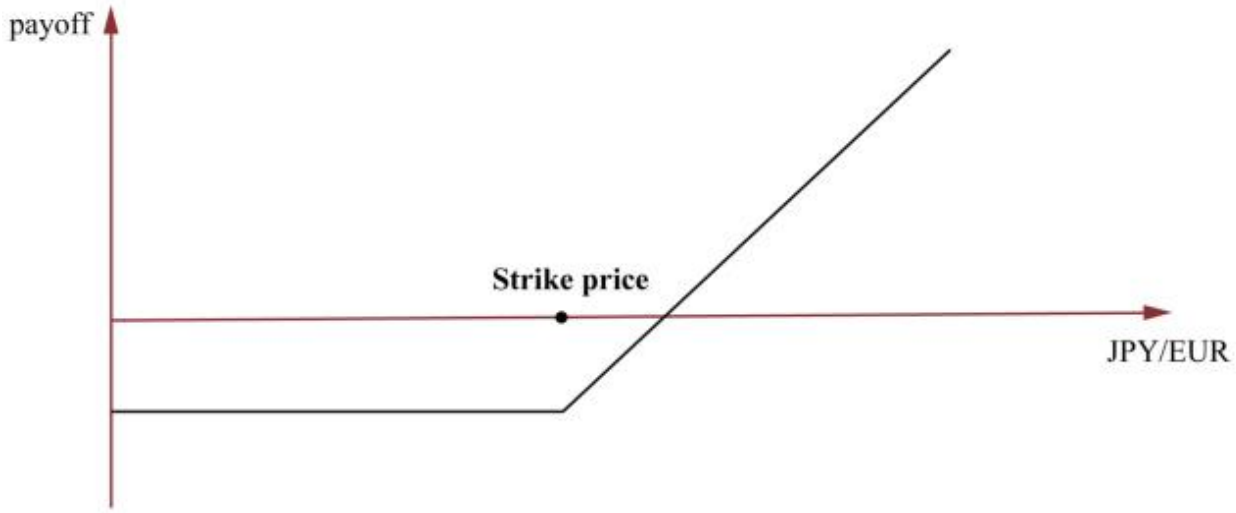
Finally, at maturity, each of the two companies makes the final exchange of the initial amount, thereby revising the initial exchange.



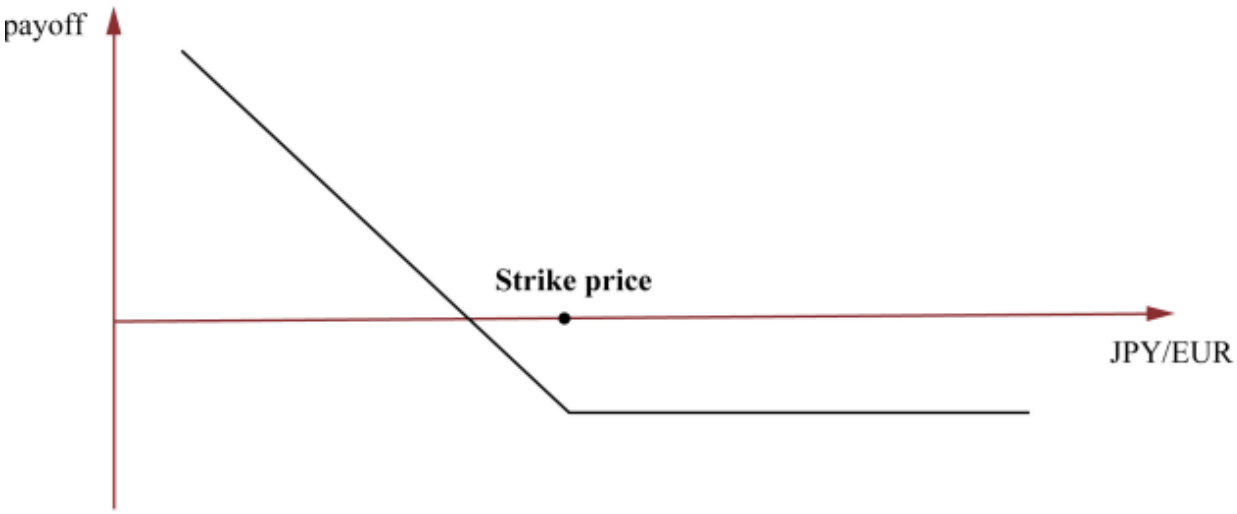
4.5.2.2 Currency Options

Currency Options could perfectly fit the company's need to mitigate risk while allowing for upward exposure when dealing with foreign suppliers and clients.

Considering again the graph representing the call options, we can easily notice how downward exposure is limited to the cost of the call option, while upward exposure is potentially unlimited (the right-side of the graph).



Whereas, the graph showing the payoff of the put options, we can see that downward exposure is limited to the cost of the put option, while upward exposure is potentially unlimited (the left-side of the graph).



In conclusion, I strongly suggested to undertake these two strategies. The former provided that a willing counterparty is found, while the latter following the forecasted direction of the exchange rate.

5 CONCLUSION

Following a brief overview the main political, economic, financial and social features distinguishing Japan's current period, I would encourage Ceramiche Musa to proceed with the expansion strategy towards Japan.

Major positive factors are the increase in consumer spending in Japan within the luxury environment, driven by both high wealth individuals (which represent an increasing portion of the Japanese population) and tourism coming in particular from China. In fact, although of the weakening of the yen with respect to the Chinese yuan is squeezing, consumption arising from such a source is considerable.

Along this line, being present in the Asian market is critical for a company with growing potentials as Ceramiche Musa, following the recovery trend of the Japanese market.

Yet, several risks related to Ceramiche Musa expansion's strategy have emerged. We can categorize them into seven categories: political risk; financial risk; product risk; commercial risk; operating risk; and currency risk. Each of these risks might have a significant impact on the company's value. In particular I estimated a potential market value for the company in Japan, and I tried to stress that value as a consequence of shocks arising from the above listed risks. As a result, the major risk to take into account happens to be currency risk. As the expansive fiscal and monetary policies are expected to be persistent in the future; gross public debt will increase accordingly. Moreover, currency risk is a critical factor both in the form of translation and transaction. Ceramiche Musa should therefore hedge against the volatility of the yen through various hedges hedging techniques.

In the last chapter I provided the company with several strategies to address forex risk, concluding by suggesting that the technique which could better fit the current economic environment and the peculiarities of the company's business and cash transactions are currency swaps and currency options.

Given that Ceramiche Musa will address the risk emerged through the analysis, the opening of a new store in Japan would be an incredible business opportunity, preparing the company also for further development towards China.

In conclusion, I recommend the company to proceed with the development of the Expansion Strategy considered, taking into account all the possible risks listed, and providing for mitigation strategies within the business plan.

Yet the Japanese market is one of the most interesting and challenging, and although several risks can come up, I strongly suggest operating in that market, which could reserve incredible opportunities and growth potentials. As Zuckerberg said: "The biggest risk is not taking any risk… in a world that's changing really quickly, the only strategy that is guaranteed to fail is not taking risks."[63]

[63] Mark Zuckerberg

6 APPENDIX

Table 1:

	2010	2011	2012	2013	2014	2015	2016
Sala mostra	€ 63.073	€ 89.205	€ 73.604	€ 43.382	€ 67.163	€ 88.765	€ 60.804
Negozio di Roma	€ 233.791	€ 234.124	€ 225.572	€ 199.227	€ 90.782	€ 89.314	€ 116.557
Negozio di Milano	€ 194.291	€ 113.172	€ 135.982	€ 79.377	€ 79.145	€ 96.199	€ 96.472
Rivenditori	€ 101.719	€ 81.385	€ 76.095	€ 86.455	€ 38.115	€ 25.789	€ 28.516
Rivenditori estero	€ 28.038	€ 32.526	€ 9.649	€ -	€ 1.961	€ 6.596	€ 9.602
TOTALE GENERALE	**€ 620.912**	**€ 550.412**	**€ 520.902**	**€ 408.441**	**€ 277.166**	**€ 306.663**	**€ 311.951**
FATTURATO	**€ 620.912**	**€ 550.412**	**€ 520.902**	**€ 408.441**	**€ 277.166**	**€ 306.663**	**€ 311.951**
Vendita diretta	€ 491.155	€ 436.501	€ 435.158	€ 321.986	€ 237.090	€ 274.278	€ 273.833
Rivenditori Italia	€ 101.719	€ 81.385	€ 76.095	€ 86.455	€ 38.115	€ 25.789	€ 28.516
Rivenditori estero	€ 28.038	€ 32.526	€ 9.649	€ -	€ 1.961	€ 6.596	€ 9.602
VENDITE PRIMA DELLO SC	**€ 787.415,36**	**€ 695.637,97**	**€ 652.559,87**	**€ 522.898,73**	**€ 345.255,84**	**€ 375.084,52**	**€ 383.400,28**
Vendita diretta	€ 577.829,41	€ 513.530,59	€ 511.950,59	€ 378.807,06	€ 278.929,41	€ 322.680,00	€ 322.156,47
Rivenditori	€ 169.531,67	€ 135.641,67	€ 126.825,00	€ 144.091,67	€ 63.525,00	€ 42.981,67	€ 47.526,67
Rivenditori estero	€ 40.054,29	€ 46.465,71	€ 13.784,29	€ -	€ 2.801,43	€ 9.422,86	€ 13.717,14
SCONTI	**€ (166.503,36)**	**€ (145.225,97)**	**€ (131.657,87)**	**€ (114.457,73)**	**€ (68.089,84)**	**€ (68.421,52)**	**€ (71.449,28)**
vendita diretta	€ (86.674,41)	€ (77.029,59)	€ (76.792,59)	€ (56.821,06)	€ (41.839,41)	€ (48.402,00)	€ (48.323,47)
rivenditori Italia	€ (67.812,67)	€ (54.256,67)	€ (50.730,00)	€ (57.636,67)	€ (25.410,00)	€ (17.192,67)	€ (19.010,67)
rivenditori estero	€ (12.016,29)	€ (13.939,71)	€ (4.135,29)	€ -	€ (840,43)	€ (2.826,86)	€ (4.115,14)
COSTI	**€ (259.847,07)**	**€ (229.560,53)**	**€ (215.344,76)**	**€ (172.556,58)**	**€ (113.934,43)**	**€ (123.777,89)**	**€ (126.522,09)**
vendita diretta	€ (190.683,71)	€ (169.465,09)	€ (168.943,69)	€ (125.006,33)	€ (92.046,71)	€ (106.484,40)	€ (106.311,64)
rivenditori Italia	€ (55.945,45)	€ (44.761,75)	€ (41.852,25)	€ (47.550,25)	€ (20.963,25)	€ (14.183,95)	€ (15.683,80)
rivenditori estero	€ (13.217,91)	€ (15.333,69)	€ (4.548,81)	€ -	€ (924,47)	€ (3.109,54)	€ (4.526,66)
MARGINE OPERATIVO	**€ 361.064,93**	**€ 320.851,47**	**€ 305.557,24**	**€ 235.884,42**	**€ 163.231,57**	**€ 182.885,11**	**€ 185.428,91**
%	*58%*	*58%*	*59%*	*58%*	*59%*	*60%*	*59%*

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8 SUMMARY

Introduction

The company

Ceramiche Musa is a historic Italian brand of ceramic tiles for floors and walls. Since 1943, the company offers a wide range of hand-made products. The company's mission is the same as what was conceived by the founder: to preserve and consolidate positioning in the luxury market, ensuring product quality and customer satisfaction by developing activities, reinforcing the image of brand uniqueness and exclusivity through a progressive and sustainable global development. Its objective is to enlarge its market opportunities by expanding towards Asia, opening a new store in Japan.

Objectives

The purpose of this paper is to study the feasibility of an investment in Japan taken by the Italian company Ceramiche Musa s.r.l. The political, economic and social features distinguishing Japan and its trade relationships with Italy will be investigated in order to assess the potential risks the company would face when entering the Japanese market.

1. Glance at Japan

In terms of GDP, Japan is the third country in the world behind the United States and China. Its economic system continues to be among the most solid and developed, with a pool of consumers of about 127 million individuals and a high GDP per capita. The Abe government is also promoting a growth policy that has led the country out of a long period of economic stagnation. During the last twenty years, a strong interest in Italy and Italian products has been consolidated. This trend, also considering the high standards of living of the Japanese population, favours the specialization of high level Italian production in the export of traditional sectors. In fact, the high-end made in Italy find a mature and highly sophisticated market, such as the Japanese one, a favourable development ground. This could also stimulate market access by SMEs specializing in the production of high quality goods, much appreciated by local consumers. Despite the geographical and cultural distances, Italy and Japan have similar characteristics and are faced with complex common problems, such as energy supply, natural disasters, environmental conservation and aging populations. Thus, exciting opportunities for cooperation in both

innovative and traditional sectors are opened. Although there are still several tariff and non-tariff barriers to entry in the country, which is protectionist by nature, the local legal system does not provide for restrictions or legal discrimination against foreign entrepreneurs.

The Luxury Market in Japan

For the past few years, Japan has been leader in the global market for luxury goods until 2015, when China took its place. Despite its struggling economy in 2015, Japan still had a luxury goods market worth $20 billion, which enjoyed 9 percent CAGR given that exchange rate is constant, according to data provided by consulting firm Bain & Company.[64] The major drivers of the Japanese luxury market are: Tourists and High Net Wealth Individuals.

Tourists

One reason for the discrepancy between the overall Japanese economy and the luxury industry is tourists. Having as major drivers the weakness of the yen, the drop-in tourism in Hong Kong and Macau, and the smoothing of visa rules for Chinese citizens, which became effective on January 2016, Chinese tourists visiting Japan are drastically increasing according to the report Chinese Tourist Boom released by Goldman Sachs.[65] This influx has certainly helped improving the image of Japan as an island of stability and spending power in the global luxury market. According to the Japan National Tourism Organisation, in 2015 about 19.7 million overseas tourists landed in Japan. About 5 million of them came from China showing an increase of over 100 percent from 2014. Of the incredible amount accounting to 3.48 trillion JPY (about 26 billion EUR) spent by foreign visitors in Japan during that year, Chinese people's spending was 40.8 percent. According to Federica Levato, senior consultant at Bain & Company, the devaluation of the yen with respect to the Chinese yuan makes it very convenient for them to buy luxury goods in Japan rather than in China. It follows that tourists represent up to 40 percent of total sales in Japan for most exposed brands, according to Bain's 2015 global luxury goods report.

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[64] www.businessoffashion.com, *consulted on June 2017*

[65] *The Chinese Tourist Boom, Goldman Sachs, 2015*

High Net Wealth Individuals

According to the New World Wealth APAC Wealth Forecast, in 2015, Japan had 1,260,000 high net worth individuals (those with net assets of $1 million or more), accounting for more than twice of China (654,000). And despite the fact that population is getting older and older, Japan is predicted to gain 327,600 HNWIs from 2015 to 2025, number which is higher than any country in Asia Pacific except from China where it amounts to 490,500. Looking further forwards, the 2020 Olympics games in Tokyo might further boost the luxury industry, spurring investment in retail infrastructure, among them new shopping centres and department stores.

2. The Risks

Multinational companies stand before a much wider market than domestic companies due to the global potential. However, with an increased global market come increased risks. Multinational companies stand before a much higher variety of risks than their domestic counterparts, with each risk correlating to a specific aspect of international business. Although it is debated which risks correspond to which specific business aspect, one can generally argue that the different categories of international business risks can be divided into six sectors[66]: political risk; financial risk; product risk; commercial risk; operating risk; currency risk.

Political risk

For what concerns political risk, we can distinguish between firm-specific, country-specific and global risk. Firm-specific risk refers to any conflict possibly arising between the company and the host government, currently there are no restrictions from the Japanese government towards Ceramiche Musa's business. As of country-specific risk, we distinguish between domestic and foreign policies, where for what concerns the former I suggest taking into account joint-venture strategy, while for the latter continuous monitoring and eventually take some actions. Finally, global risk has an impact on the world as a whole.

[66] *Grath, Företagets Utlandsaffärer, 1999*

Financial risk

With respect to financial risk, we distinguish between economic and financing risk. Economic risk is mostly related to the increase in gross public debt in Japan, which could increase interest rates. Financing risk is mainly related to the ability of Ceramiche Musa to raise capital, which could rely not only on the Japanese financial intermediaries but also on the Italian one. In this case, the impact on the revenues comes from the ability to produce less items than what was originally planned, arising from a lower cash availability. However, Ceramiche Musa could rely on financing from its own country, so both of the impacts are quite low, and a major impact would reverse on currency risk, is case of financing being in EUR instead of JPY.

Product risk

It risk is related to any condition which might have an impact on the performance of the product. It is mainly related to transportation risk. Thinking about the specificities of the product, ceramic tiles, product risk is an important factor to consider, since the tiles can be damaged while being transported.

Commercial risk

Commercial exposure is the risk of insolvency from a private supplier, which can be mitigated through several methods. This type of risk is reflected on the revenues, as the company wouldn't be able to respect its orders, with the consequence of selling less items than what was forecasted.

Operating risk

Operating risk relates to natural disasters, such as earthquakes, which are frequent in Japan, and the socio-political environment, which is traditionally hostile to foreigners. The Japanese structures are very modern and are provided with innovative anti-seismic feature, thus the risk related to natural disasters is continuously decreasing. On the other side, regarding the Japanese culture, a big effort is being made towards the openness of the country and its people. Operating risks related to natural disasters may have a huge impact on the costs of the company, as materials could be damaged, however being the company located in different areas, far from each other (Italy and Japan) can help lowering the operating exposure.

Currency risk

The last type of risk we are considering, currency risk, is problematic with respect to a relation between Japan and the EU, in fact the volatility of the JPY/EUR exchange rate is high if compared for example with the USD/EUR exchange rate. The volatility of the exchange rate will have an impact on both revenues and expenses. If the JPY appreciates with respect to the EUR and the company has receivables from clients in JPY, the revenues in EUR will be lower, while if the JPY depreciates and the company has payables in JPY to a Japanese supplier, the cost in EUR would be higher. However, the other way around Ceramiche Musa would be favoured by the appreciation of the JPY in case of accounts payables and by the depreciation of the JPY in case of accounts receivables.

Assessing the Company's main Risk

Methodology

In order to be able to study the impact of the above-mentioned risks, I interviewed the CEO of Ceramiche Musa and we reviewed the main risk which could come up to the company in case of investing in Japan, assigning a score to each of them based on two parameters: the impact on the gross profit; the probability of occurrence. The risks have been classified from a qualitative point of view, after having assigned them a score between 1 and 5, where 5 is the highest level for each category and 1 is the lowest.

Assumptions

In order to get a sense of the dimension for Ceramiche Musa's market in Japan, I estimate the revenues in Japan from the forecasted revenues in Italy for the end of 2017. The annual revenues for Ceramiche Musa at the end of 2016 were about 300,000 EUR and are estimated to be 350,000 EUR at the end of 2017. The population in Italy which is part of the category of high net wealth individuals is 0.3m[67], representing the 0.5%[68] of the population, while in Japan it is 2.7m[4], meaning that the 2.13%[5] of the population is super-rich. Since the highly wealth

[67] https://www.theguardian.com/business/2016/jun/23/china-japan-super-rich-asia-pacific-north-america-wealth, *consulted on September 2017*

[68] *Google, consulted on September 2017*

individuals in Japan are 9 times those that are in Italy, potentially sales in Japan can reach nine time the sales in Italy, with revenues of 3.15m EUR that we can simplify to 3m EUR. From an analysis studied during my internship in the company, we derived the gross margin, which was evaluated by taking gross profit over sales for the years from 2010 to 2016. Gross profit is calculated by subtracting discounts and cost of goods sold from revenues.[69] Calculations provided a margin of more than 55% over sales, however for simplicity I will consider margins of 55%. It follows that the forecasted gross profit for the Japanese market are 1.65m EUR. As a consequence, cost of goods sold can be evaluated as Revenues less Gross Profit and are 1.35m EUR. In the analysis, I stressed the forecasted gross profit as a consequence of the projected impact of each risk, trying to understand which kind of risk may have a greater impact on the company's result, and thus which risk should be provided mitigation strategies ex ante in the context of a feasibility study.

Presentation of the risk scenarios

The following risk scenarios will be presented to the CEO of the company, who will have to assign the scores related to severity and probability of occurrence for each scenario. Summing up in the table that follows the different scenarios we can notice that some of them include a reduction in sales revenues, while others in cost of goods sold. Differs from the others the case of currency risk which allows for both of the two events to happen.

RISKS	↓sales	↑costs	Scenario
Political risk	x		The government introduces quotas for imported ceramic tiles
Financial risk	x		Due to financing probles, less funds are available for production
Product risk		x	Problems during transportation ruins material increasing the cost of the inventory
Commercial risk		x	An insolvent counterparty doesn't supply raw materials, that has to be re-ordered doubling the cost of the inventory for that order
Operating risk		x	Natural disasters, such as earthquakes that are very common in Japan, can ruin materials in creasing the cost of the inventory
Currency risk	x	x	If the JPY appreciates with respect to the EUR and the company has receivables from clients in JPY, the revenues in EUR will be lower, while if the JPY depreciates and the company has payables in JPY to a Japanese supplier, the cost in EUR would be higher.

[69] *Appendix, table 1*

The Analysis

This paragraph will show the results of the interview with the CEO of Ceramiche Musa. Each score will be associated with a scenario and its related probability, which results from a score as well. In order to be able to compare the risks, the scenarios will be analyzed in monetary terms according to the scores assigned. The results will be compared to assess the major risk to be considered before formulating the expansion strategy, so that a useful set of mitigation strategies can be provided to the company ex ante. Since the risks affect the gross profit differently according to whether they impact sales or cost of goods sold, I will analyze them distinctly according to this feature. Let us first consider those risks acting by decreasing sales. As introduced in the paragraph "methodology", we want to see the impact on gross profit in monetary terms to be able to compare the shocks. Each score is attributed with a corresponding percentage decrease in sales, similarly to the scores attributed to probability which are associated to an annual probability percentage. The following formula used to determine the level of sales after introducing each risk is the following:

$$R_{after\ risk} = R_{before\ risk} \times (1 + \gamma) \times (1 - \rho)$$

Where $R_{before\ risk}$ is the value of sales revenues without considering the impact of the risks; $R_{after\ risk}$ is the value of sales revenues after introducing the risks; γ is the decrease in sales; and ρ is the probability. The resulting numbers are provided in the following table:

Risks related to ↓ in sales	score of severity	% ↓ in sales	score of probability	probability	sales after risk
Political risk	2	-10%	1	20%	2,16
Financial risk	1	-5%	1	20%	2,28
Currency risk	2	-10%	2	25%	2,03

Then risks acting on cost of goods sold will be analyzed. The following formula used to determine the level of expenses after introducing each risk is the following:

$$C_{after\ risk} = C_{before\ risk} \times (1 + \delta) \times (1 + \rho)$$

Where $C_{before\ risk}$ is the cost of goods sold without considering the impact of the risks; $C_{after\ risk}$ is the cost of goods sold after introducing the risks; and δ is the decrease in sales. The resulting numbers are provided in the following table:

Risks related to ↑ in costs	score of severity	% ↑ in costs	score of probability	probability	costs after risk
Product risk	3	15%	2	25%	1,94
Commercial risk	2	10%	1	20%	1,78
Operating risk	3	15%	2	25%	1,94
Currency risk	2	10%	2	25%	1,86

After having determined the new level of either sales or expenses, or both of them in the case of currency risk, I will calculate the gross profits generated by these numbers. Two formulas will be used in this case, according to whether sales or expenses have changed:

When the impact is on revenues, gross profit is determined by:

$$\pi_{after\ risk} = R_{after\ risk} \times 0.55$$

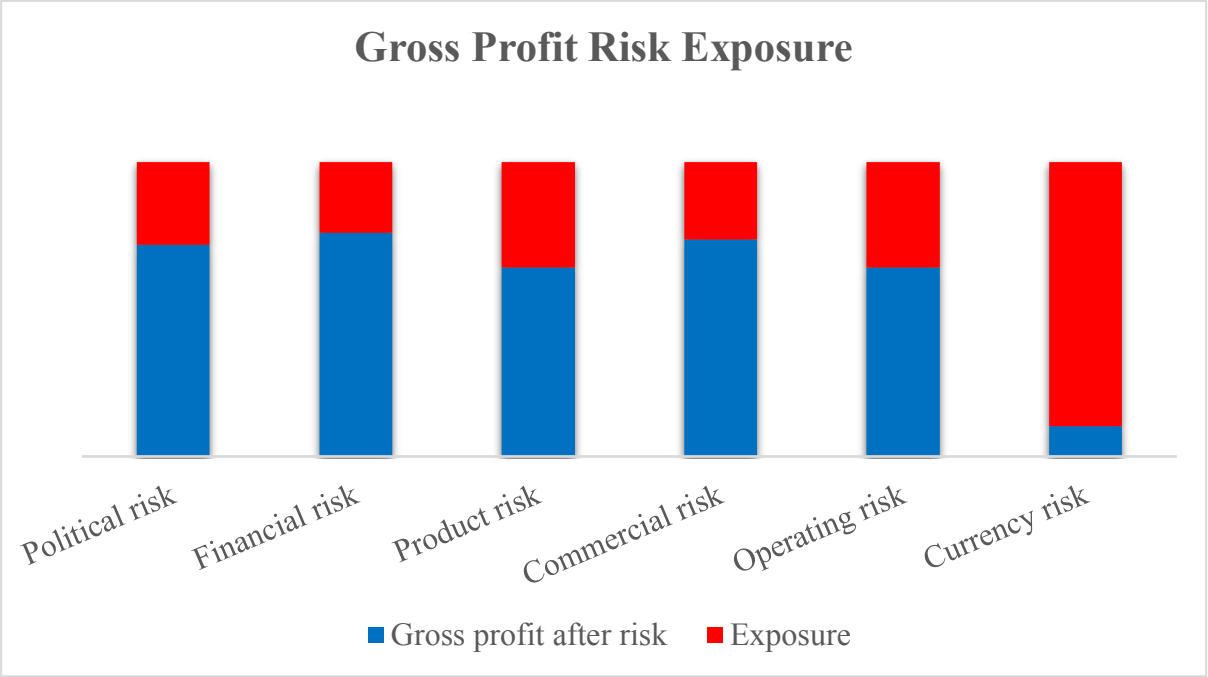
$\pi_{after\ risk}$ is the gross profit after risk, which is calculated by multiplying the revenues after risk with the estimated margins percentage of 55%. When instead costs are affected, gross profit is:

$$\pi_{after\ risk} = R - C_{after\ risk}$$

The resulting numbers are provided in the following table:

All Risks	Revenues	Costs	Gross Profit	Exposure
Political risk	2,16	0,97	1,19	-28%
Financial risk	2,28	1,03	1,25	-24%
Product risk	3	1,94	1,06	-36%
Commercial risk	3	1,78	1,22	-26%
Operating risk	3	1,94	1,06	-36%
Currency risk	2,025	1,86	0,17	-90%

If we summarize the results on a graph showing the impact of each risk on the forecasted gross profit, we can easily notice that the forex risk is the one showing the highest results in terms of exposure. In fact, it could have an impact on gross profit worth 90% of its value. Of course, we should consider the other side, and the upward potentials associated with currency risk, however even the positive risk is considered a risk, and thus the part of the gross profit subject to exposure is large both positively and negatively. So, it is important to find strategies that can mitigate the downside exposure while letting for upward exposure to happen.



In the chapter that follows, I will further break down this type of risk, providing the company with some strategies which could help mitigating it.

3. Currency Risk Management Strategies

Ceramiche Musa has several possible options to manage its currency risk, I analysed the different techniques, trying to determine which is the best option for the company. The strategies are listed in the table below with their pros and cons:

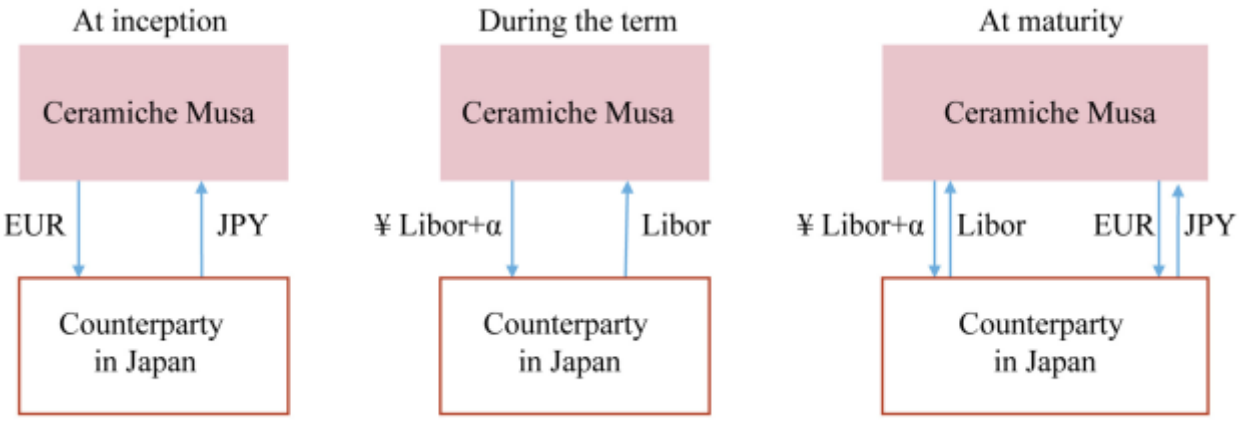
Strategies	PROS	CONS
Currency Forwards	customized contract	default risk from counterparty
Currency Futures	exempted from counterparty risk	the number of maturity dates is limited
Currency Swaps	can be mutually beneficial	difficult to find a willing counterparty
Currency Options	potential loss are limited, whereas potential gains are unlimited	option premium may vary
Money Market Jedge	perfect hedge	based on covered interest arbitrage
Netting	doesn't require external transactions	counterparty risk and the company needs to have both payables and receivables in JPY
Matching	the company doesn't need to have both payable and receivables	counterparty risk
Lead & Lag	avoid further losses on the exchange rate	predictions can be biased

Proposed solution

Given the peculiarity of the company and of the market in which it wants to operate, I would recommend considering currency options and currency swaps as the preferred hedging strategies. In fact, being Ceramiche Musa a small company, it won't be able to use the internal strategy "choice of invoice currency". Moreover, the unpredictability of the JPY/EUR exchange rate makes the currency futures, currency forwards contract and the internal strategy of lead and lag risky rather than risk hedging strategies. In addition, I wouldn't recommend money market hedge strategy as it requires a condition of arbitrage, which is generally difficult to be detected. What is more, the internal strategies of netting and matching are conditional to the presence of an account balancing the one to hedge, in the former internal to the company, while in the latter bringing in a third party. Also, those strategies are largely exposed to counterparty risk.

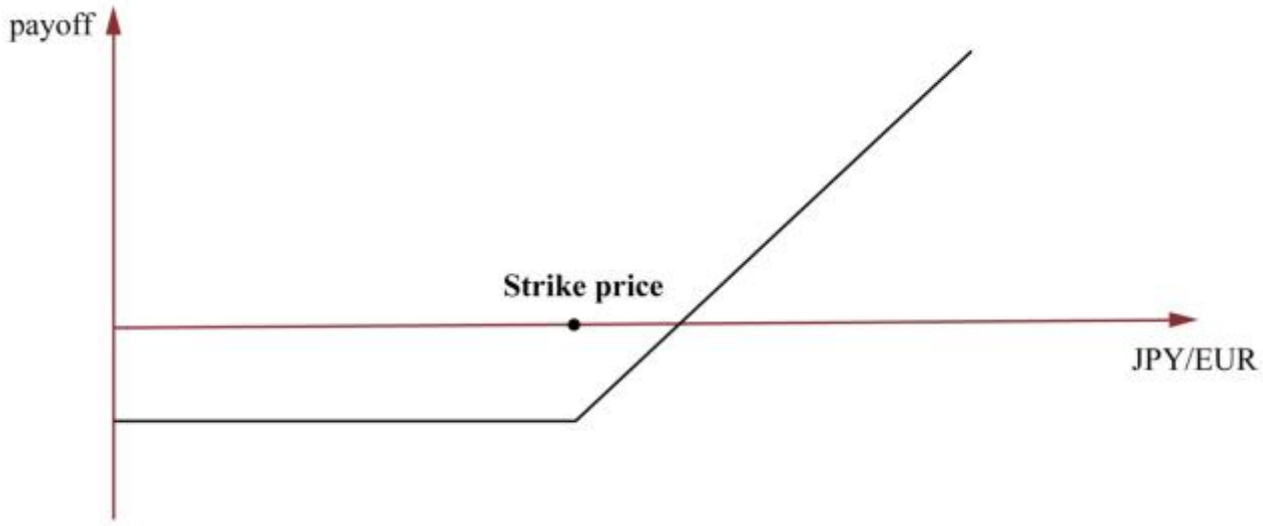
Currency Swaps

Ceramiche Musa will find it easier to raise capital in EUR from an Italian bank to finance its expansion strategy in Japan, yet money will be needed in yen. Instead of changing the raised funds into JPY through an intermediary paying for huge commissions, the company can swap its loan with another company which has a better borrowing capacity in JPY and worse in EUR. At inception Ceramiche Musa would exchange the principal of loan in euro for a principal amount in JPY with the counterparty. The exchange of principal amounts is made at the market rates. Over the life of the loan, Ceramiche Musa makes interest payments in JPY, and in exchange it receives the interest in EUR. In this way, the company can hedge its receivables' position in JPY using the amount to pay the loan interests. At the same time, interests are received in EUR, which is the home currency of the company, thereby hedging the position. Finally, at maturity, each of the two companies makes the final exchange of the initial amount, thereby revising the initial exchange.

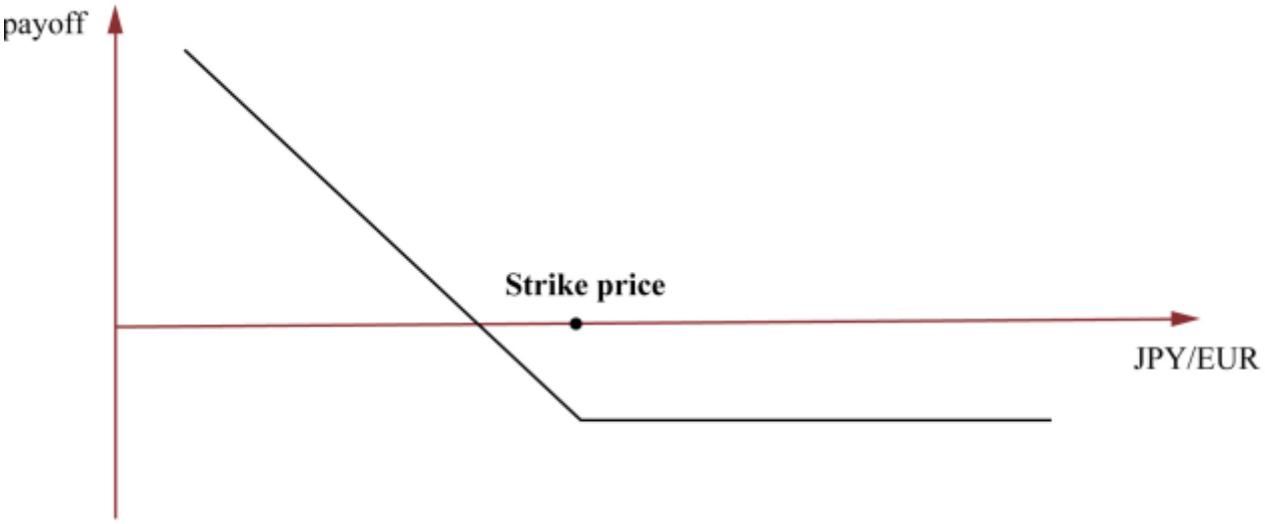


Currency Options

Currency Options could perfectly fit the company's need to mitigate risk while allowing for upward exposure when dealing with foreign suppliers and clients. Considering again the graph representing the call options, we can easily notice how downward exposure is limited to the cost of the call option, while upward exposure is potentially unlimited (the right-side of the graph).



Whereas, the graph showing the payoff of the put options, we can see that downward exposure is limited to the cost of the put option, while upward exposure is potentially unlimited (the left-side of the graph).



In conclusion, I strongly suggested to undertake these two strategies. The former provided that a willing counterparty is found, while the latter following the forecasted direction of the exchange rate.

Conclusion

Following a brief overview the main political, economic, financial and social features distinguishing Japan's current period, I would encourage Ceramiche Musa to proceed with the expansion strategy towards Japan.

Major positive factors are the increase in consumer spending in Japan within the luxury environment, driven by both high wealth individuals (which represent an increasing portion of the Japanese population) and tourism coming in particular from China. In fact, although of the weakening of the yen with respect to the Chinese yuan is squeezing, consumption arising from such a source is considerable. Along this line, being present in the Asian market is critical for a company with growing potentials as Ceramiche Musa, following the recovery trend of the Japanese market.

Yet, several risks related to Ceramiche Musa expansion's strategy have emerged. We can categorize them into seven categories: political risk; financial risk; product risk; commercial risk; operating risk; and currency risk. Each of these risks might have a significant impact on the company's value. In particular I estimated a potential market value for the company in Japan, and I tried to stress that value as a consequence of shocks arising from the above listed risks. As a result, the major risk to take into account happens to be currency risk. As the expansive fiscal

and monetary policies are expected to be persistent in the future; gross public debt will increase accordingly. Moreover, currency risk is a critical factor both in the form of translation and transaction. Ceramiche Musa should therefore hedge against the volatility of the yen through various hedges hedging techniques.

In the last chapter I provided the company with several strategies to address forex risk, concluding by suggesting that the technique which could better fit the current economic environment and the peculiarities of the company's business and cash transactions are currency swaps and currency options. Given that Ceramiche Musa will address the risk emerged through the analysis, the opening of a new store in Japan would be an incredible business opportunity, preparing the company also for further development towards China.

In conclusion, I recommend the company to proceed with the development of the Expansion Strategy considered, taking into account all the possible risks listed, and providing for mitigation strategies within the business plan. Yet the Japanese market is one of the most interesting and challenging, and although several risks can come up, I strongly suggest operating in that market, which could reserve incredible opportunities and growth potentials. As Zuckerberg said: "The biggest risk is not taking any risk… in a world that's changing really quickly, the only strategy that is guaranteed to fail is not taking risks."[70]

[70] Mark Zuckerberg