EQUITY VALUATION- SOTIPAPIER

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Abstract:

Title: Equity Valuation of Sotipapier –Tunisia

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This dissertation aims to value the equity of a Tunisian company :Sotipapier. As pointed in the corporate finance literature review -under the first section of the dissertation-, distinct valuations methods usually result in different outcomes. In order to increase the robustness of the fair value of the share price, I use the DCF method as well as the relative valuation approach. Indeed, each method applied generates slightly distinct valuations. Therefore, I Consider an average share price of two approaches that yields a share price of 4.54 TND -for the end of FY 2015 .In a further step, I compare in the last section the results that I find with a recent valuation of Sotipapier‟s equity performed by KPMG -Tunisia in mid 2015. The comparison highlight a divergence of 5.3% that falls within a reasonable margin given the particular context of each valuation.

Resumo:

Título: Avaliação do Capital Próprio da Sotipapier – Tunisia

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Esta dissertação tem como objectivo avaliar o capital próprio de uma empresa Tunisina: Sotipapier. Tal como indicado na revisão de literatura de Finanças Corporativas – na primeira parte da dissertação -, métodos de avaliação financeira distintos normalmente conduzem a diferentes resultados. Para aumentar a robustez do valor justo de mercado do preço das ações, utilizo o método DCF e a abordagem da avaliação relativa. De facto, cada método aplicado resulta em avaliações ligeiramente distintas. Por isso, considero uma média do preço de ação de dois métodos que resultanum preço de ação de 4.54 TND – para o fim do ano financeiro de 2015. Num passo seguinte, comparo na última parte os resultados que obtenho com uma avaliação recente do capital próprio da Sotipapier realizada pela KPMG – Tunísia em meados de 2015. A comparação destaca uma divergência de 5,3% que se encontra numa margem de erro razoável dado o contexto particular de cada avaliação.

Preface

This dissertation is the last step in a challenging but wonderful academic experience. I am lucky that I was able to write this dissertation on a subject that interests me. Through my progress, I had to know a lot about the Tunisian‟s accounting system and to accommodate to the French notations in the corporate area. I also learned what it takes to perform an accurate valuation in Tunisia besides a good model; good network and tight relations with people from the field. In that sense, I would like to thank Mr.Selim Mghirbi, analyst at KPMG-Tunisia, who helped me through sharing data about the company‟s valuation. I am grateful to my supervisor Mr. Henrique Bonfim who dedicated his time and energy to help me accomplish this dissertation. I would never forget the meetings on Saturdays morning that we had.

Last but not least, I dedicate this work to my family who supported and believed in me.

Contents

Literature review

The reasons behind addressing the valuation topic are diverse and multiple. It could be for M&A purposes, for IPO‟s, or for providing recommendation on stocks for investors (buy, sell recommendation).It could be also used as a performance measure for executives and managers‟ performance in a company. It is an intuitive tool that helps identifying the value drivers within a company and thus to optimize budgeting and planning.

1. Discounted cash flow (DCF) valuation

The discounted cash flow models can be determined using the free cash flow to the firm "FCFF" or the free cash flow to equity "FCFE". It is true that FCFF is more common for DCF approach as it fits the majority of sectors. However, FCFE is usually used when performing a valuation for service companies such as banks and insurances. The Academics and professionals in the field paid special attention to this approach. (A.V.Bilych 2013) states that the DCF is the most intuitive as it models the expectations of investors and other stakeholders as it concerns the company‟s performance and growth.

The main idea behind the Discounted Cash Flow models is the time value of money theory. The worth of any assets today is not constant over time and is expected to change as inflation rates are fluctuating and as the ability of a firm in generating profit is conditioned by multiple variables. Thus, cash flow is adjusted by a discount rate "r" that reflects the expected risk associated to a business and its ability to create value and generate profit. According to Damodaran, when considering the DCF approaches, one should distinguish between valuating the equity stake in a company and valuating the whole business including equity and debt in the business. Before getting the distinction between the two models, it is important to understand the common part of them, the "free cash flow"-FCF. Stern, in his papers "Earnings per Share Don‟t Count, (1974) defined the free cash flow (or FCF) as "net operating profit after taxes (or NOPAT) minus the amount of new capital invested. Ronald et al.(2001), suggest that cash flow is defined as: "Sources=uses" detained as :

Formula 1

$$R_T + \Delta B_T = O_T + Int_T + Div_T + Taxes_T + \Delta I_T + \Delta WC_T$$

Where (t) is used to indicate time and:

R_T: Operating revenues

ΔB_T: Net debt issuance

O_T : Operating costs

Int_T Interest payment on debt less interest income

Div_T : Dividends

Taxes: paid taxes

ΔI_T : Long term investment

ΔWC_T : Net investment in working capital (cash and marketable securities are taken into account).

Defining the cash flow is a first step of the DCF models as the name implies. The second step is getting the discount rate that will be used .The discount rate would sets a part the different categories that belong to this valuation class. Following this reasoning, the literature categorized among others three main types under the DCF approaches that are wildly recognized. While Damodaran (2002) defined three categories:"equity valuation", "firm valuation "and" adjusted present value", Jacob Oded and Allen Michel (2015) recognize a similar classification- of DCF models to the ones proposed by Damodaran–and add a fourth type known as" Capital Cash Flow". In a more specific classification, Fernandez (2007) argues that the DCF approaches are ten taking into account the different discount rates used for different purpose in the valuation:

"1. Equity cash flows discounted at the required return to equity 2. Free cash flow discounted at the WACC 3. Capital cash flows discounted at the WACC before tax 4. APV (Adjusted Present Value) 5. Residual income discounted at the required return to equity6. EVA discounted at the WACC7. The business‟s risk-adjusted free cash flows discounted at the required return to assets8. The business‟s risk-adjusted equity cash flows discounted at the required return to assets9. The risk-free-adjusted free cash flows discounted at the risk-free rate 10. The risk-free-adjusted equity cash flows discounted at the risk-free rate" (Fernandez 2007)

As the classification is wide under the DCF models, I choose to develop the commonly used ones and the most agreed on among researchers: Equity valuation, firm valuation and APV models.

1.1. Free Cash Flow to the Equity (FCFE)

The Free Cash Flow to the Equity is used to determine the value of the equity of a firm by discounting the cash flows by K_E[1]. Damodaran (2002) and Oleg Deev (2011) claim that the logic behind using the FCFE, is to measure the firm"s ability to return to its shareholder their investments under the form of dividend or stock buyback. In that context, the two authors consider that the discount dividend model "DDM" is another theoretical extension of the neoclassical discounted cash flow models" (Oleg Deev2011).

The Free Cash Flow to the Equity is calculated as follow:

Formula 2

$$\mathrm{FCFE} = \mathrm{NI} - (\mathrm{Capex} - \Delta\mathrm{Dep}) - \Delta\mathrm{NWC} + \Delta\mathrm{D}$$

Where NI is the net income, Capex is the capital expenditure, Dep is the depreciation, WC is the non cash-working capital and the D is the debt. Using this cash flow, the equity value will be:

Formula 3

$$\text{Equity's value} = \sum_1^{\mathrm{n}} \mathrm{FCFE}/(1+\mathrm{K_E}) + (\mathrm{FCFE_{N+1}}/\mathrm{K_E}\text{-}\mathrm{g})/(1+\mathrm{K_E})^{\mathrm{n}}$$

Considering this approach, the implicit assumption is that all the FCFE are distributed as dividend. Nevertheless, this assumption is not realistic since firms are distributing only a portion of it as dividend to its shareholder." In 1998, for instance, the average dividend to free cash flow to equity ratio across all firms on the NYSE was 51.55 %"(Damodaran 2002). Thus, one should consider the Dividend Discount Model to separate equity repurchase from dividend. Norman et al. (2013) claim that this model is intuitive as it represented as discounted CFs byK_E and the expected growth of the dividend distribution. The same ration is used in the dividend discount model DDM or the Gorden (1962) model given by:

[1] The rate required by investors

Formula 4

$$\text{Value of stock} = \frac{\text{DPS}_1}{(\text{k}_\text{E} - \text{g})}$$

Even though the model might seem to be simple, it has some limitations. The required rate of return and the dividend growth are constant for the model, yet those assumptions are not realistic in most of the cases as k_E is affected by investors‟ sentiments and expectations. Moreover, the dividend‟s distribution policy for one firm is subject to changes during the life cycle of the company. As an attempt to adapt the DDM model to non-constant growth firms. Robert Irons suggests an alternative method. The author takes into account the firm‟s life cycle and its dividend policy enhancing the DDM original model **"**for accelerating share price growth" (Iron 2014). The model was criticized by Michaud (1980) and by Michaud and Davis (1982) since authors are arguing that the DDM model might be misleading considering variant scales of returns, which might enhance errors in firm valuation in the first place and in portfolio optimization in the second place. Therefore, the authors identify the "ex ante bias in the DDM" as one of the main ambiguity in the model making it conditioned by the "market outlook".

Taking into account the nature of Sotipapier‟s sector and low predictability of dividends, I am not considering this approach for the valuation.

1.2. Free Cash Flow to the Firm (FCFF)

The free cash flow to the firm is calculated to value the debt and equity side of the company. For that purpose, Steiger (2008) states that the inputs for calculating the FCFF should be "based on accounting figures before any interest payment is made to the debt holder". FCFF is more used when the valuation is made in an acquisition or a takeover context as the acquirer is also concerned with the target‟s debt. The free cash flow to the firm is calculated as follow:

Formula 5

$$\text{FCFF} = \text{NI} + \Delta\text{D\&}A + IE - Capex - \Delta NWC \quad (5.\text{a}) \textit{ or}$$

$$\text{FCFF} = \text{EBIT}(1 - \text{T}) + \Delta\text{D\&}A - Capex - \Delta NWC \quad (5.\text{b})$$

Using the free cash flow to the firm and discounting it by the weighted cost of capital "WACC" (that I develop in a further section), we get the firm‟s value that can be written as:

Formula 6

$$\text{FirmValue} = \sum_{i=1}^{n} \frac{\text{FCFF}}{(1+\text{WACC})} + \frac{\text{FCFF}_{n+1}/_{\text{waac}-g}}{(1+\text{WACC})^{n}}$$

The "WACC" approach assumes that" the company follows a fixed debt/value policy. Inselbag and Kaufold (1997) argue that this assumption is the main weaknesses of this approach.

1.3. Adjusted Present Value (APV)

Stewart Mayers initially introduced the adjusted present value in 1974.The author aimed to give a comprehensive approach that recognize the interactions between the corporate and investment decisions within a company. This approach lies on the "additively" principle, as the firm is valued as all equity financed plus any "incremental value originated by leverage. Damodaran, -among others- defined and modeled three main stages to the APV approach, which are summarized as follow:

1.3.1. The value of unlevered firm

As the title implies, one considers that the firm is 100% equity financed assuming that he levels of debt is equal to zero. Thus, we consider the cash flow to the firm and discount it by the unlevered cost of equity$\rho_u$derived from the unlevered β of the firm that I will develop in a later section.

Formula 7

$$\text{Value of unlevered firm} = \frac{\text{FCFF}(1+g)}{_{u}-g}$$

1.3.2. Determine the tax shield

The tax shield is the firm tax savings that results from its borrowings. This concept is one of the most debated ones as different definitions were proposed. Myers (1974) proposes to discount the tax shield by the cost of debt, while Harries and Pringle (1985) claim that it should be discounted according to the cost of capital. Later, Fernandez (2001) defines it as the residual between the present value of taxes of unlevered firm and the present value of a levered one. Damodaran, for instance uses the cost of debt as discount rate for the tax benefit and assumes a constant rate of tax.

Formula 8

$$\text{Expected tax shield} = \frac{(\text{tax rate})(\text{cost of debt})(\text{debt})}{(\text{cost of debt})} = (\text{tax rate})(\text{debt})$$

1.3.3. Estimate of the bankruptcy cost

As firms are engaging in high level of leverage, they are increasing their cost of capital and paying larger amounts of interest. Consequently, it leads to a potential financial distress and thus the probability of bankruptcy increase. This implies a direct correlation between the level of debt for a given firm and its default risk. The present value of bankruptcy costs is calculated as:

Formula 9

$$Expected\ BC = (\pi_{BC})PV(BC)$$

Bankruptcy costs include direct and indirect costs. Direct bankruptcy costs include legal, accounting, filing and other administrative costs. The indirect costs refer to "the lost profits that can be expected due to significant bankruptcy potential" (Edward I. Altman1984). The vague definition of indirect costs is the major problem regarding this concept as it has a limited accuracy measures. Sebsequently, the total bankruptcy costs are affected ending up with a wrong firm value. According to an empirical study conducted by Edward I. Altman, on average the bankruptcy costs range from 11% to 17% of the total firm value up to three years before the actual bankruptcy. Such percentage remains significant toward the final value of a firm.

The final step of the APV approach is to derive the value of a levered firm by adding up the value of unlevered and the additional value of leverage and taking into account the probability of bankruptcy.

Formula 10

$$\text{Value of levered firm} = \frac{\text{FCFF}(1+\text{g})}{\rho_{\text{u}} - \text{g}} + \text{D} - \pi_{\text{BC}}$$

Several authors recognized the APV approach as suitable approach for a firm that has a dynamic capital structure. It is also a relevant method can be used to evaluate international projects as it separates the value of the financing of the project and the corporate tax situation of the firm. Yet, estimating the bankruptcy costs remain a main limitation for APV.

1.4. Key Drivers of the DCF

1.4.1. Weighted Average Cost of Capital (WACC)

The Weighted Average Cost of Capital, "WACC" is defined as the average cost of financing sources. It considers all the potential financing sources such as common stock, preferred stock, bond as well as other long term debt that a firm is having. It is used as a discount rate of the free cash flows in the DCF approaches and expressed:

Formula 11

$$\mathrm{WACC} = {}^{\mathrm{E}}\!/_{\mathrm{V}} * \mathrm{R_E} + {}^{\mathrm{D}}\!/_{\mathrm{V}}\,\mathrm{R_d}(1 - \mathrm{T})$$

The formula above shows that the WACC is related to the cost of equity and cost of debt as well as the capital structure of the company. I detail the WACC components in the following sections.

1.4.1.1. Cost of Equity (K_E)

"Estimation of cost of equity is required for many financial applications such as capital budgeting and performance evaluation using EVA" Bartholdy and Peare (2000). The most common way to estimate the cost of equity K_E is using the Capital asset pricing model CAPM. Theory suggests that higher risk is associated with higher returns. Investors usually require a higher returns"K_E" when they think that the risk is higher. Thus, risky businesses and younger firms usually have a higher K_E comparing to more mature and stable ones. According to CAPM, it is written as:

Formula 12

$$\mathrm{K_E} = \mathrm{R_f} + \beta_{\mathrm{E}}(\mathrm{E_{RM}} - \mathrm{R_f})$$

Where R_f is the risk free rate and E_{RM} is the expected market return of a diversified market portfolio. As K_E reflects the investor"s expectations about the riskiness of their investment, this discount factor depends on various risk factors that are macroeconomic or firm specific. Several researches and studies aimed to understand and to build an intuition of estimating the cost of capital. For example, Gebhardt, Lee, and Swaminathan (2001) suggest that companies with high book to market value, high growth rate and high industry risk premium have high cost of capital. In a further step, numerous studies were conducted to derive a relation between the cost of capital and the disclosure level. Yet, the results were divergent since Gebhardt, Lee, and Swaminathan (2001) and Botason (1997) failed to find any evidence supporting this hypothesis. Contrary to

Wei and Gaofeng (2004) that confirm the inverted correlation between the disclosure level and K_E.

1.4.1.2. Cost of Debt (K_d)

The cost of debt is viewed as the cost of borrowing money. It incorporates the company default risk and the market interest rate. As interest expenses are deductible, the after tax cost of Debt is the most used. The cost of debt, noted R_d iscalculated as:

Formula 13

$$R_d = (R_f + \text{Credit risk rate})(1 - T)$$

The Credit risk rate or the default spread reflects the riskiness of the business. Considering firms that have long term liquid bonds,R_d is estimated considering the yield to maturity of those bonds. However, if the firm is not issuing bonds, the default spread is determined according to the firm or the peers‟ rating. Sengupta (1998) suggests that firms with high ratings in terms of disclosure quality are having lower effective interest costs of debt, in other words their R_d is relatively lower compared to other firms with lower ratings.

1.4.2. Risk free rate (R_f)

Bearing risk means that the expected and actual returns are not necessarily equal. Indeed, investors in most of the cases end up having an actual return distinct from the expected one. Investors are getting the reward of investing in a risky asset through the risk free rate return plus risk premium. Under this context, we define the risk free rate asset as an asset with known returns having the expected and the actual returns equal. In his paper “Estimating risk free rate”, Damodaran point out two main conditions for an asset to be risk free. The first one is “no default risk”. This condition implies that the suitable type of securities is government bonds because even when the government defaults, it can still be able to print money and payback the bondholder. The second condition is “no reinvestment risk “meaning that the coupon payment of a bond can be reinvested at a constant interest rate. Therefore, the zero coupon government bond seems to be the only fixed income instrument that matches with the risk free conditions.

For valuation purposes, it is optimal to have the same currency of the target company and the government bond used to determine the risk free rate in order to adjust for inflation and country specific risk accurately. Koller, Ghadhart and Wessel (2005) recommend using for DCF the cor-

responding government bond rather than making ad hoc adjustments. Regarding the bond‟s duration, theory suggests to "discount each cash flow at a cost of equity that matches the maturity of the cash flow". I consider a 5-year Tunisian bond as a proxy of risk free rate.

1.4.3. Beta

The beta is a risk measure that reflects the "systemic risk", which is the market risk as a whole regardless of a company‟s specific performance. This measure is trying to answer the following question: How much is a particular asset‟s performance correlated to whole market returns. For example, if a beta of stock is 1 it means that the security price will be as volatile as the market. If it is less than 1 it means that the stock is less volatile relatively to the whole market.

This risk measure is an important input in the CAPM for calculating the cost of equity as mentioned in the previous section. A higher beta implies a higher cost of equity and consequently a higher cost of capital. In fact, one needs to distinguish between levered and unlevered beta noted respectively as β_{levered} and $\beta_{\text{unlevered}}$. Several theories and models were developed with different assumptions suggesting different relationships between levered and unlevered betas. The relation is expressed as:

Formula 14

$$\beta_{\text{levered}} = \beta_{\text{unlevered}} + (\beta_{\text{levered}} - \beta_{\text{unlevered}})\text{D}(1 - \text{T})/\text{E}$$

Fernandez (2007) tests the validities for the seven theories for the case of a constant growth and perpetuity growth. The main contribution of the paper is that the relations defined (formula 14) between betas do not always hold. Thus, some restrictions should be considered when applying them.

1.4.4. Terminal Value (*TV*)

When performing an equity valuation, one should consider the principle of "ongoing concerns" that means the continuity of the business in question. Whether the valuation method is a DCF or a DDM, the terminal value reflects the infinity of the cash flows generated by the company (in a case of DCF) or an infinity of dividends that are assumed to be distributed to the shareholders in the future (DDM case). For a DCF method the Terminal value (TV) is usually calculated according to the perpetuity growth model or the Exit multiples based on EBIT and EBITDA multiple.

The multiple approach assumes that the company‟s terminal value is determined based on market multiples of comparable firms. Thus, the peer group would have a significant impact on the terminal value. TV is then calculated as:

Formula 15

$$TV = EBITDA \times multiple$$

While the growth model assumes that, the last cash flow estimated in the explicit period will continue to grow at a constant level:

Formula 16

$$TV = \frac{FCF_n \times (1 + g)}{WACC - g}$$

Where:

FCF_n: The last free cash flow considered in the explicit period

g: The long-term growth rate

$WACC$: The weighted average cost of capital.

Even though it is frequent to use both methods to determine the terminal value, I consider only the growth model method as Damodaran-when answering "The 25 questions on DCF valuation"- argues that using the multiple approaches for estimating the TV might violates the principle of valuating the equity according to the cash flows generated by the company.

2. **Relative valuation**

The relative valuation, also known in the financial literature as "the multiple valuation" is a complementary method to an absolute valuation such as DCF. While this latter determine the firm‟s net worth based on its own free cash flows, the relative method is estimating the company‟s value by comparing it to its competitors or to companies that have similar characteristics (such as fundamentals or risk measures). In order to apply this approach, two main steps are required that I detail in the remaining of this section.

2.1. Value Drivers

The first step is about deciding what will be the value drivers used for a specific valuation. This approach has numerous drivers and thus a wide range of multiple packages that can be put together for one valuation. The arbitrary choice of the package composition created a debate about the performance of the multiple and their classification among researchers and practitioners.

Koller, Ghadhart and Wessel (2005) explain that enterprise multiples are generating more accurate results than equity multiples. The paper suggests that the P/E multiples are affected by the company‟s capital structure since a company that is equity financed would have a P/E that is greater than $1/R_d$. Therefore, an unlevered company can manipulate the P/E by replacing the debt for equity in term of capital structure. Besides, earnings usually include non-operating items that are in most of the cases unique event(such as write offs or restricting charges) that might mislead the ratio. With accordance to that, Elik and Lie (2002) show that asset multiples are resulting in a more accurate valuation comparing to sales and earnings multiples.

In an attempt to evaluate the historical versus the forward looking multiples, Liu, Doron and Jacob (2002) examine a set of historical cash flow multiples (cash flow from operation and EBITDA) and a forward looking derived mainly from earnings per share. The results support that forward multiples seem to outperform the other multiples. In addition, a longer forecast period improves the valuation accuracy. Kim and Ritter (1999) share this conclusion where the scope of the study was focused on IPOs valuations. The paper shows evidences that forward multiples outperform the trailing multiples. Those findings support the claim that forward multiples are more relevant and more deterministic than historical multiples in a relative valuation. Yoo (2006) found that combining a several simple multiple valuation based on both stock prices and historical performance improve the accuracy of a valuation outcome when it is based on historical multiples. However, adding historical multiples to a stock price valuation does not enhance its value accuracy. This implies that the historical multiples are not improving the valuation accuracy contrary to the forward multiples (stock price based) that generates better results.

2.2. Peer group identification

The peer group identification consists in selecting the comparable firms used as a benchmark to compare the concerned company‟s performance. The selection criteria are usually focused on

having the same industry, growth rate and business risk. Leary and Roberts (2014) show that the choice of peer group is important for valuation purposes as well as for determining the corporate capital structure of the company. Conventionally, firms within a peer group should belong to the same industry and having a relatively close size in terms of market cap and revenues. Ferri and Wesley (1979) argue that firms in the same industry and producing similar outputs should bear the same amount of risks. In addition, they should have a close leverage ratio since it is-according to the authors- determined by the firm‟s size. However, this perspective has been progressively rejected through time. Gebhardt, Lee and Swaminathan (2001) claim that filtering the peer group for industry, size and leverage ratio does not improve the accuracy of the relative valuation. The paper confirms that profitability, growth and risk level are the main factors that should be considered when constructing a peer group. As a support, the results mentioned above, Damodaran is arguing that two firms operating in the same businesses are not systematically comparable as they might have different cash flows, risk level and potential growth.

3. Option pricing valuation

The option pricing valuation is not very common as it concerns specific sectors .It is usually used when valuing companies that are operating within a natural resources (gold, oil or natural gas) or commodities that are traded in secondary markets. The intuition behind this approach lies on the fact that the firms‟s value is highly related to the price of the commodity considered. For instance, a firm that owns a mine can increase or decrease its production according to the price of the commodity in order to maximize its wealth. According to Damodaran (2009), when valuing similar companies, the value of its asset is determined using the Black-Schols model. The undeveloped resources are viewed as options on the commodity in question.

Formula 17

$$C_{(S,t)} = N(d_1)S - N(d_2)K^{e^{-r(T-t)}}$$

with;

$$d_1 = \frac{1}{\sqrt{1-t}} \times \left[\ln\left(\frac{S}{K}\right) + \left(r + \frac{^2}{2}\right)(T-t)\right]$$

$$d_2 = d_1 - \sqrt{T-t}$$

In a first stage, Damodaran uses the formula 17 to value the mine of the natural resource in question. Then he extends this approach to value a company that has more than one natural resource by aggregating the value of each one of them.

Obviously, this method is not suitable for valuing Sotipapier as the company is not operating in the natural resource or commodity related sector.

4. Valuating a firm in emerging/developing economy

I consider the specificities of valuing a firm in an emerging market context as Sotipapier is operating in Tunisia –that is considered an emerging economy**.** Emerging economies are characterized by their rapid growth as compared to developed ones. Their financial markets are usually not market efficient and the local stock exchanges are not very liquid. Numerous empirical studies focused on emerging market during the past two decades. They attempt to highlight the differences and similarities of the stock market behavior in an emergent and developed context. The traditional principle of bearing more risks versus higher expected returns was one of the main topics addressed. Al Janabi et al. (2010) studied the daily market returns in the Gulf Cooperation Council (GCC) and Middle East - North Africa (MENA). The results show that most of the financial markets are not "informationally efficient".

Damodaran (2009), contributed by determining the main characteristics of the financial market in emerging economies. He lists six major elements that should be considered when valuing an emerging market firm :1) Currency volatility : reflected by a fluctuating exchange rate and inflation, 2) Country risk : that emerges from the tradeoff between the high growth potential and the significant macroeconomic risk, 3) Unreliable market measure: caused by the illiquid markets misleading the estimation of the cost of debt and equity, 4) Information gaps and accounting differences: the accounting standards in many developing countries are requiring less information disclosure regarding essential elements that affect the final value of the firm. Besides, the differences between accounting norms make it hard to compare firms from the advanced and emerging markets .5) Corporate governance: in the sense that most of the businesses in emerging market are family business. Even when becoming publicly traded, the family is still the owner of the majority of the shares which may cause some conflict-interest among shareholders reflected in the voting rights among other control devices, 6) Discontinuous risk: besides the country risk

mentioned above, some countries due to the unstable political or economic situation might be exposed to sudden events that generate dramatic consequences on the firm „s performance.

Considering the political and economic uncertainty of Tunisia, I am considering in the valuation of Sotipapier the first, second and sixth points mentioned above as they are the most pronounced risks for the country.

II. Micro and macroeconomic environment of the company

1. Macroeconomic environment

1.1. Tunisia: main economic indicators

Tunisia is located in North Africa with a population of 11 million in 2014 according to the Word Bank. It is classified as developing country with a GDP of $46.99 billion dollar in 2013. In January 2011, the country witnessed a political revolution against the former president Ben Ali who was in power for 23 years. Since then, the economy has a relatively slow growth compared to the past decade. In 2013, the GDP grow by 2.5% versus an average of 4.6% in 2006 –2010(according to the Word Bank). In 2015, after the two terrorist attacks in Bardo and Sousse, the expectations of IMF and the World Bank were less optimistic about the country"s GDP. It is estimated to grow by 1 % for 2015. In 2012, the central bank of Tunisia adopted a stricter monetary policy that aims to maintain an inflation rate below 6% -figure 1-(in 2014, the rate is around 4.9%). The Local currency depreciated in 2014 against the US dollar and the Euro by 15% and 5% respectively and it is maintaining this trend in 2015.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Population (million)	10,5	1,07	10,8	10,9	11	11,1	11,2	11,3	11,5	11,6
GDP per capita (USD)	4123	4095	4203	4225	4393	4157	4147	4368	4594	4851
GDP(USD bn)	43,5	43,7	45,3	46	48,3	46,2	46,5	49,5	52,6	56,1
GDP(TND bn)	63,1	64,7	70,7	76,4	82,4	89,3	96,9	105,2	114,2	123,8
Economic Growth (nominal GDP , ann, var in %)	7,5	2,6	9,2	8,1	7,9	8,4	8,5	8,5	8,5	8,5
Economic Growth (GDP , ann, var in %)	3,3	-0,5	4,8	2,5	2,6	3,6	4	4,4	4,6	4,7
Private consumption(annual var in %)	4,3	4,1	4,1	3,6	3,2	3,7	3,9	3,9	3,9	4
Fixed investment (annual variation in %)	4,3	-12,6	4,9	-0,9	0,3	2,8	5,5	5,6	5,3	5
Industrial production (annual varaition in %)	7,7	-3,7	2,1	1,7	0,4	2,9	4,2	4,7	4,8	5
Unemployment(% of active popualtion)	13	18,3	17,6	15,9	15,8	15,2	14,5	13,4	12,4	11,4
Fiscal Balance(% of GDP)	-1	-3,3	-5,5	-6,8	-5	-5	-4,2	-3,5	-2,9	-2,4
Public Debt (%of GDP)	4,07	44,5	44,5	45,7	51,6	52,4	53	52,6	51	49,3
Inflation (CPI,annual variation in %,aop)	4,2	3,5	5,1	5,8	4,9	4,8	4,5	4,2	3,9	3,7

Table 1: Forecast of Tunisian economic performance (source: Focuseconomics 2015)

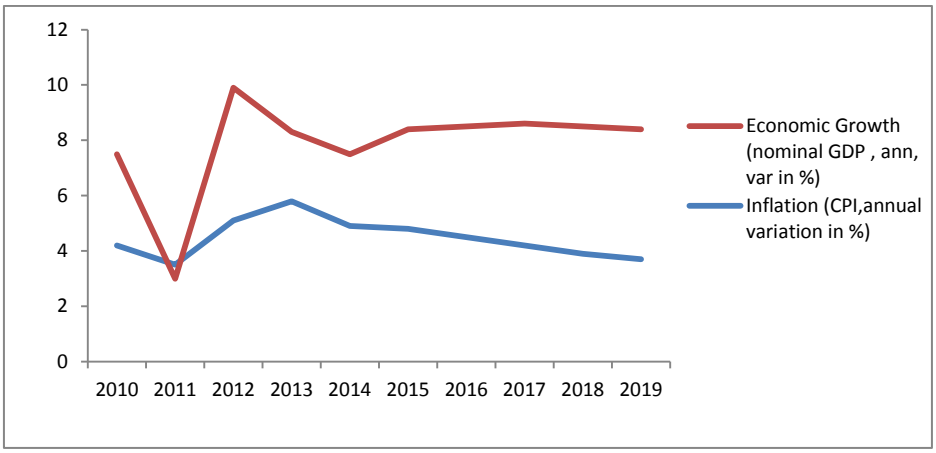

Figure 1: Trend of the economic growth and inflation rate in Tunisia (source: Focus economic estimates (April 2015))

1.2. The industry in Tunisia and internationally

1.2.1. The International market

The paper production is considered a basic material industry. It is used in several contexts whether it is for other industries or for final consumers. According to the Food and Agriculture Organization, the world production increased from 371 million tons in 2009 to 398 million ton in 2013. In fact, packaging paper is the main portion of the sector production in the international market. It represents 57% of the whole sector. Recycled papers and the wood plumb are the principle raw materials used in the industry. Thus, it promotes sustainable development through a constant and cyclical recycling that aim to protect the forest resources. The major producers in the world are China, US, Japan, Canada, Sweden and Finland. Those countries are contributing with 75% of the total production. The paper industry is defined as capital (heavy machinery) and energy (electricity) intensive.

1.2.2. Tunisian Market

The Tunisian market includes 9 companies specialized in the Pulp, Cardboard and paper industry and 114 companies that operate in the paper transformation. "La Societé Tunisienne des emballage modernes", STEM is considered an indirect competitor in industrial Kraft[2] packages as its

[2]A Strong paper made mainly with wood plumb and used frequently in industrial packaging.

target industry is distinct from the one considered by Sotipapier. For the Test liner[3], TPAP, Tetra Pack and Tanit Emballages are the rival of Sotipapier in this category. The wood pulp that is a raw material for the industry is normally imported .However, there is one company –SNCPA (Societé Nationale de Cellulose et de Papier Alfa) –that is producing the pulp used mainly as cigarettes and filter paper. In general, the quality of the produced paper is slightly lower than the imported one. Therefore, the prices are relatively low. Nevertheless, a medium quality of paper is sufficient for to the needs of the Tunisian local market. Regarding the raw materials of the industry, Tunisia is importing the wood pulp (raw fiber) and some other recycled paper that increased in 2013 and 2014 as shown in the figure 2.

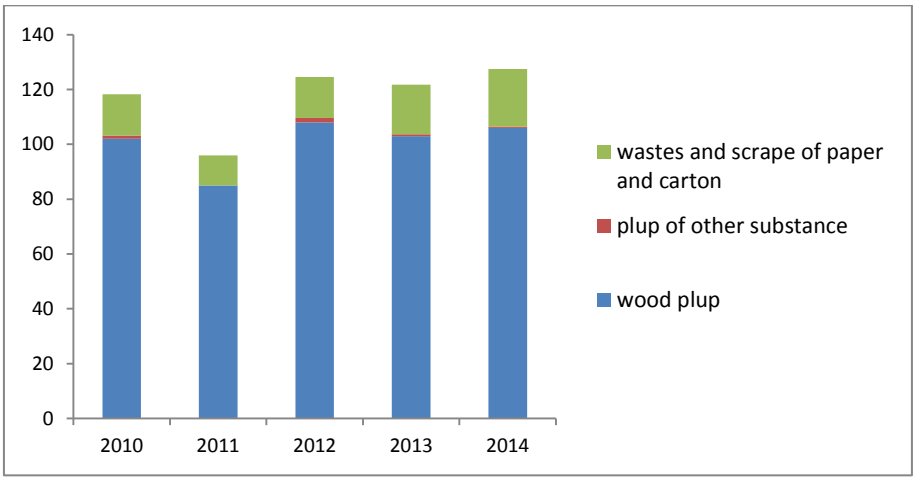

Figure 2 :Imports of raw material for paper production (in MTND)

The local demand of the paper industry is exceeding the supply as the production does not cover the totality of the needs. The Tunisian exports of paper and transformed paper declined due to a significant reduction in the number of tissue factories within the country. In 2014, the exports related to the sector totaled 227.5 MTND of which 56.8MTND are mainly packaging for the cement. On the other hand, the imports of paper and transformed paper increased in 2014 to 611MTND of which nearly half of it (335.8 MTND) are imports of paper and carton for packaging.

[3] The Test Liner "TL", made partially with recycled fibers of Kraft.

2. Microenvironment: the activity of the company

Sotipapier is a Tunisian company that is specialized in the production of paper for heavy packaging (mainly for cement factories).It was founded in 1981 by Mr Hamrouni. It is the market leader in Tunisia for cement packaging. It has a production capacity of 60.000 tons a year. The company has a market share of 80% of kraft and around 29% in the Test Liner category. The company went public in March 2014 with intially 33.7% free float. The private equity Swicorp[4]owns 44% under its three funds HAN TN, Value Consulting and HAN LUX.

2.1. Products

2.1.1. Kraft

Sotipapier has a nominal production capacity of Kraft 30,000 tons/year that is sold entirely in Tunisia. The demand of this product category is estimated to be 30,000-35,000 tons/year in 2015 according to the management. The Kraft bags are made for to the cement factories. Sotipapier is considered the market leader in this specific type of Kraft production. As the demand exceeds the supply capacity, the company is importing the quantity needed to satisfy its clients. In that sense, investments were made in 2015 to increase the production capacity in order to match the production with the demand.

2.1.2. Test Liner

The local producers are contributing to 43% of the national market that is estimated in 2014 to 70,000 tons/year while the remaining 57% are imported. In 2014, Sotipapier had a market share of 29% (20,593 ton). The major competitor of the company is T‟PAP that belongs to the Tunisian group POULINA. T‟PAP entered the market in 2010 which caused the loss of a major client for Sotipapier UNIPACK as this latter belongs to POULINA.

[4]Swicorp is a private financial services group providing solutions in the spheres of investment banking, private equity and asset management in the Middle East and North Africa (source:www.swicorp.com)

2.1.3. Energy production

As the paper industry is requiring a big consumption of energy, Sotipapier invested in 2007 around 6 MTND to produce energy in order to reduce its costs. It produces gas of a capacity of 10MW and two heaters to receive steam with a total capacity of 20T/hour.

2.2. Shareholder's structure

Shareholder	Amount(in MTND)	Percentage
Hamrouni Aabdelkader	4,942	18,93%
Value Consulting	4,377	16,77%
HAN TN	4,377	16,77%
HAN LUX SARL	2,854	10,93%
CTKD	1,308	5,01%
Free folat	8,245	31,58%

Table 2:The shareholder‟s structure of Sotipapier (source: semestrial financial statement of the company, June 2015)

As the table shows, Mr. Hamrouni the founder of the business is the major shareholder with 18.93% of shares. In fact, the company witnessed major changes in the shareholder structure throughout the years. In 2012, Swicorp gained control of around 44% of the total shares under its private equities: Value Consulting (16.77%) HANTN (16.77%) and HAN LUX SARL (10.9%). Since the IPO in 2014, the company maintained relatively a stable free float percentage with an average of 32% of its shares outstanding.

2.3. Dividend policy

Sotipapier is paying dividends to its shareholders maintaining an average payout ratio of 70% that is claimed to hold for the upcoming years. The figure 3 shows that the dividend distribution policy became more generous since 2011, which is explained by the major changes in the company‟s shareholder structure.

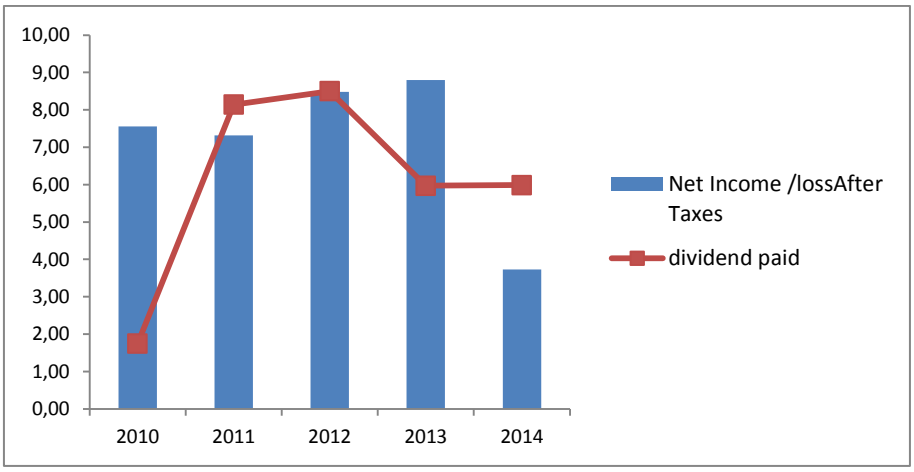

Figure 3: Net income versus Dividends paid .

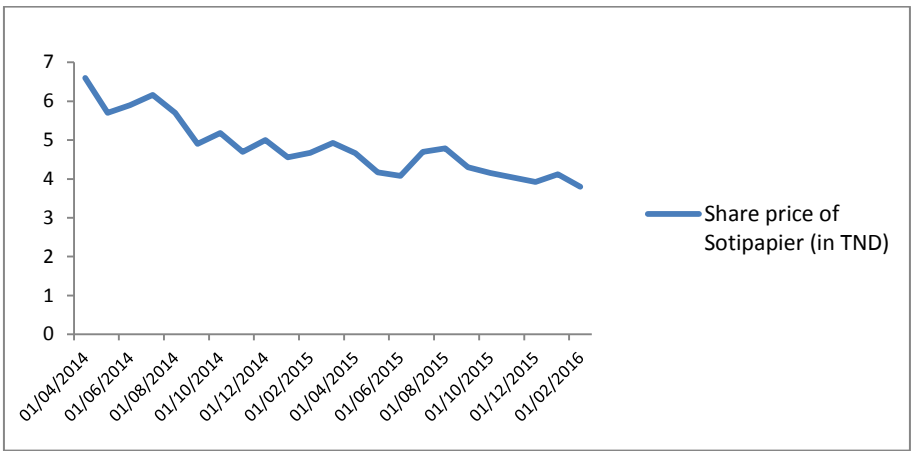

Figure 4: Stock price performance (source:Thomoson Reuters)

Since the IPO in April 2014, the share price of Sotipapier ranged between 6.6 TND and 4.7TND with a variation range of 40%. For 2015, the price maintained its decreasing trend but with relatively more stable values (with a variation of 20% along the year). The highest price in 2015 was 4.93 TND in March while it reached a lowest value of 4.08 TND in June. Axis Bourse (A Tunisian brokerage firm) in its last recommendations report claims that the share price is undervalued and recommended a strong buy. (See appendix 1).

Key financial indicators

2.4. Revenue analysis

2.4.1. Kraft revenues

Despite the economic downturn in Tunisia during the period 2012-2014, Sotipapier"s revenues on Kraft increased with an annual growth of 10% versus a growth of 4.4% in 2010-2012. On average, the sales of Kraft represents 68% of the total sales. The company deals mainly with 6 clients that absorb 99% of its sales for the category. As shown in the figure 5, the Kraft revenues increased after 2012 as a response to an increase in the national demand of the Kraft. The national consumption of Kraft packaging increased by 4 million tons between 2012 and 2014. This expansion is driven by a boost of the cements production capacity. Besides, it is important to note that the company increased its prices by 10% due to an increase in the production costs (raw material and natural gas prices).

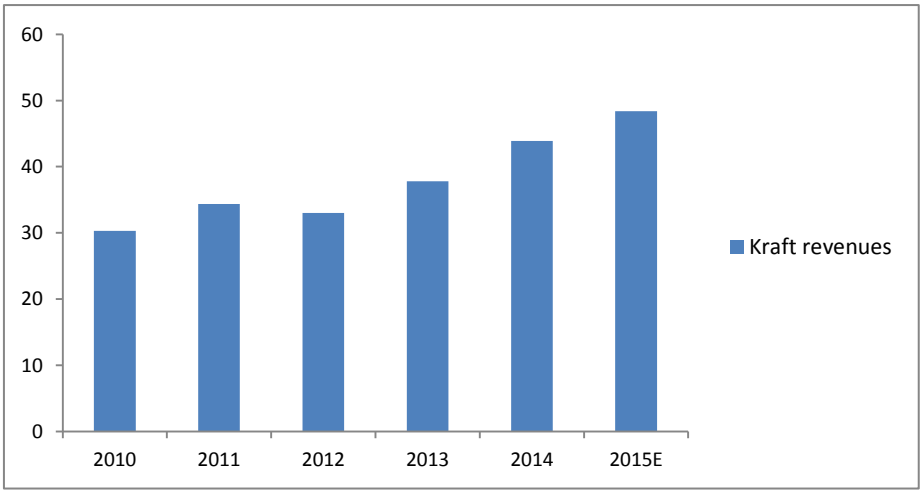

Figure 5:The Kraft revenues (in MTND)

During the last two years, Sotipapier had to import Kraft packages to resale them (a value of 4.1 MTND and 8.5 MTND in 2013 and 2014 respectively) to fulfill the supply–demand gap. For this reason, the company made an investment in 2015 to raise its production capacity of Kraft. The management claims that starting from 2016; Sotipapier should be able to cover 100% of the Kraft production needed to meet its clients demand.

2.4.2. Test Liner revenues

Figure 6 reflects the evolution of the revenues of the TL starting from 2010. The TL revenues were negatively affected by the political and economic situation in Tunisia. They decreased in 2011- as shown in the figure 6- relatively to the previous year from 17.89 in 2010 MTND to 12.1MTND in 2011. The declining trend of TL is caused by a decrease in the imports of the recycled paper, which is the main raw material for this category. In addition, the situation in important target –Libya- is not stable making the LT demand shrink for Sotipapier notably. Yet, the revenues of TL grew by 6.6% (13.8 MTND in 2012 to 16.7 MTND in 2014). The reduced list of clients is apparently a policy that the company is following as the 80% of TL sales are also designated to 6 main clients. In light of the company‟s expansion plan, the management expressed its willingness to invest in the machinery that would improve the quality and quantity of the products.

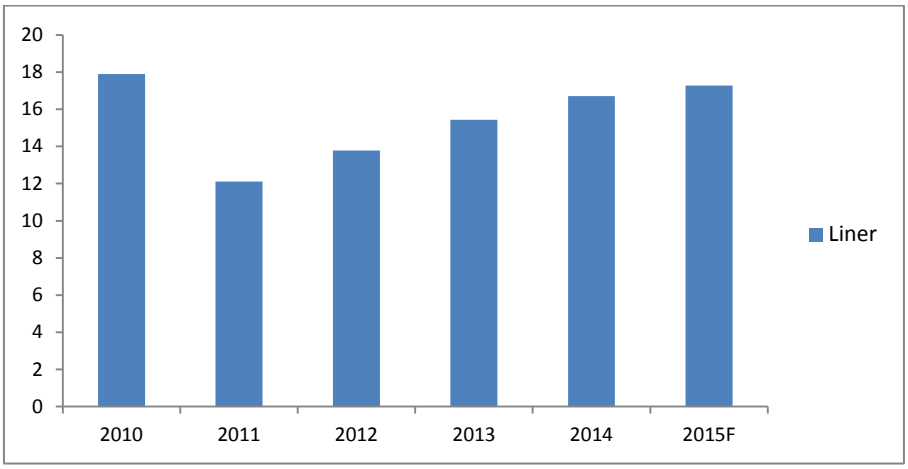

Figure 6: The Test Liner revenues (in MTND)

2.4.3. Energy revenues

As I highlight in the section 21.3, the energy revenues are not considered a core business of Sotipapier but it is rather a production that helps the company to reduce its costs. The energy revenues are the sale of the excess production of electricity that Sotipapier does not need . According to the national law concerned with the energy production and consumption for industries, Sotipapier has right to sell the energy exclusively to the National company of Electricity and Gas “STEG”. The company is not allowed to go beyond certain amount of electricity production. Thus, the energy sales remain relatively small (2% of the total revenue for 2013 and 2014). The

management is expecting a modest increase from 1.8 MTND in 2014 to 2.3 MTND correlated with the overall production growth in 2016 as shown in the figure 7.

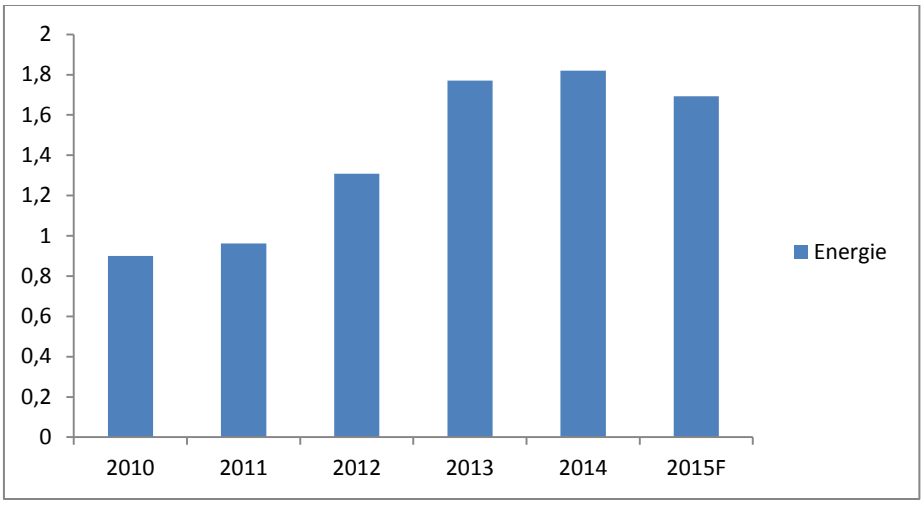

Figure 7:Energy revenues (in MTND)

2.4.4. Total revenue evolution

The total revenues of the company grew by 9% annually between 2012 and 2014. The growth was accelerated in 2014 as it reached 13.2% (from 55.4 MTND in 2013 to 62.7 MTND). The figure 8 shows the evolution of total revenues that maintained an increasing trend along the period. This increase is driven mainly by the Kraft production. Historically, this latter accounts for an average of 68% of the total revenues as the figure 9 reveal, the TL about 29% and the energy 3%. Even though the management claims that those proportions should be maintained in the coming years, the increase in the TL production capacity is an important strategic aspect for Sotipapier.

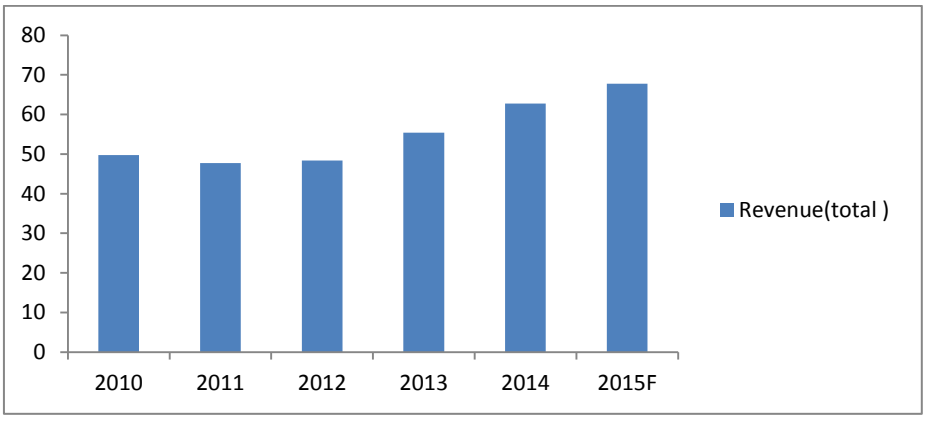

Figure 8: Total revenues evolution (in MTND)

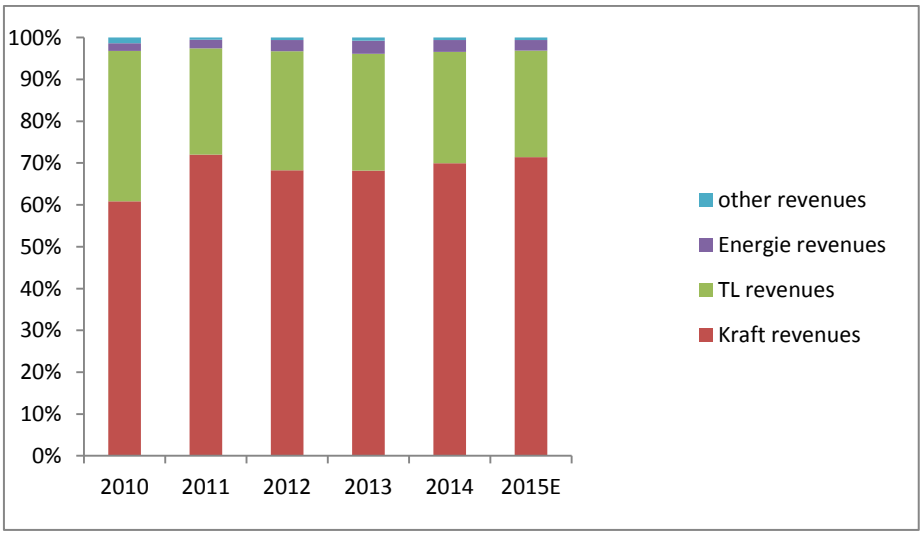

Figure 9: Revenues composition

2.5. Cost of goods sold (COGS)

The raw material represents on average 67% of the COGS. For the Kraft production, Sotipapier is importing all the quantity of the paper pulp (the main component of Kraft). Regarding the supplies of TL -the recycled paper-the company is both importing and buying from local suppliers. Energy and water is also an important portion of the total COGS as they represent 22% of the total as represented in the figure10. The paper pulp is imported from diverse suppliers from several countries(eg; USA, Sweden, Chili). In fact, 80% of the imports are paid in US Dollar and 20% in Euro. The raw material price increased by 3% in 2014 versus an average increase of 15.6% during 2013-2014(figure 11). For 2015, the prices went down from 932 USD in December 2014 to 808 USD in the same period of the next year.

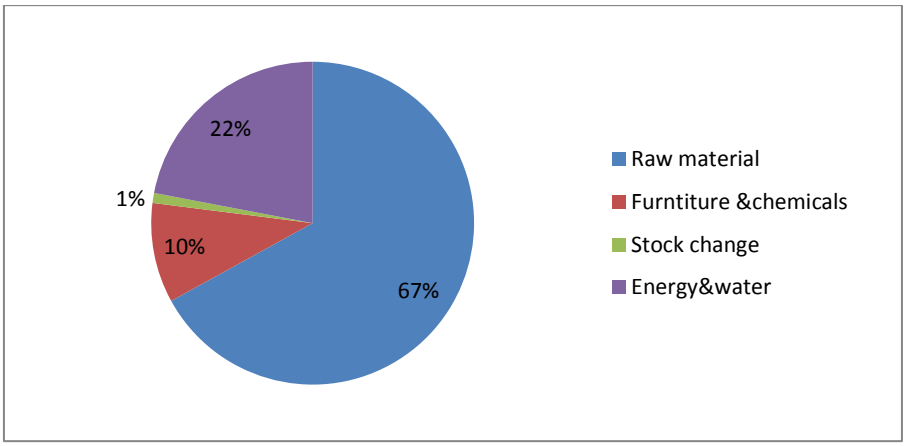

Figure 10:COGS average composition

However, Sotipapier is not getting the full advantage of the low prices of pulp for this year as the Tunisian Dinar depreciated by 4.2% against the US Dollar between December 2014 and July 2015. Regarding the Natural Gas, the price increased by an average of 20% annually leading the COGS to increase. In 2014, the energy bills (water and gas) represented around 16% of the revenues. Nevertheless, thanks to its energy production, the company is able to reduce its original consumption by 10%.

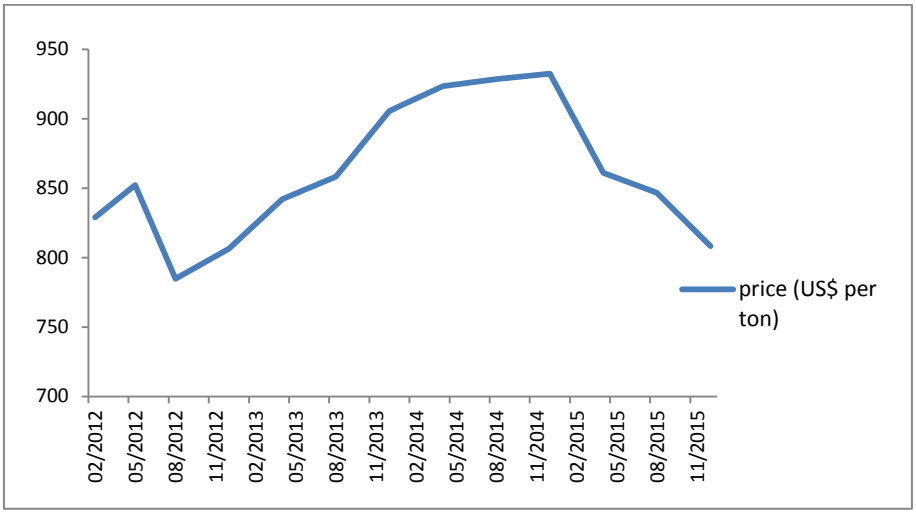

Figure 11 International prices of imported wood plumb (source: Chicago index NBSK)

2.6. Gross margin

The figure 12 shows the evolution of the gross margin along the period 2010-2014. The value in 2014 was the lowest in the period: 14MTND versus an average of 17.7 MTND for the last 3 years. This trend is driven by a remarkable increase in the COGS. The revenues increased by 13.2% (62.7MTND) while the costs of raw materials and energy increased by more than 25%. The expansion of the COGS affected the gross margin that dropped by 26.7% from 19.1 MTND in 2013 to 14 MTND in 2014. In an attempt to cover the high increase in the production costs, Sotipapier adjusted the prices of Kraft in August 2014 and later the TL prices in the same period of the following year. The increase in prices did not cancel the effect of costs on the gross margin as the company is trying to retain its customers and be competitive in the market.

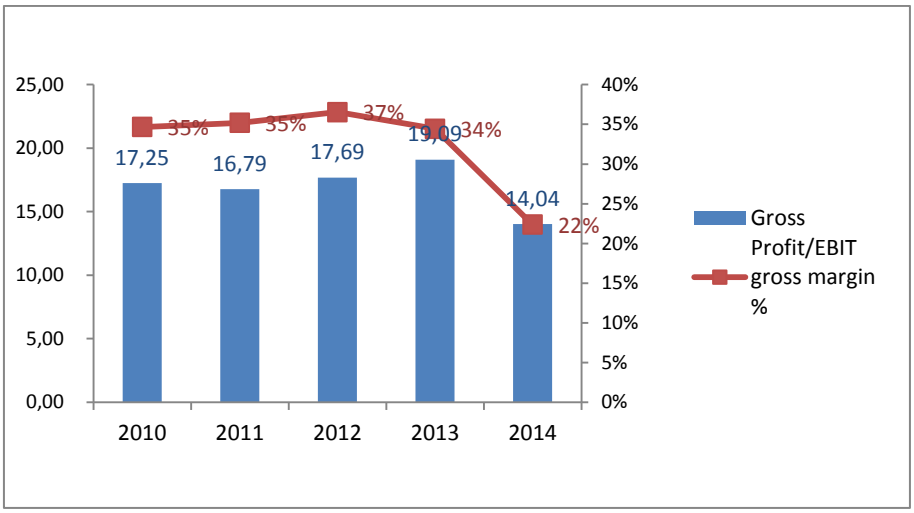

Figure 12: Gross margin evolution

2.7. Capital expenditure

When Swicorp became a major shareholder in Sotipapier, an investment plan was established to improve the production capacity and the quality of the final goods. As shown in the figure 13 the investing cash flow picked significantly from an investment below 2 MTND in 2012 to an average of 4MTND in 2013 and 2014. Between 2014 and the first semester of 2015, the company invested more than 10MTND in machinery and equipment while seeing a recovery of the OCF after the downturn in 2014. The company is expected to follow an expansion plan to increase its production of TL. This expansion should be completed in mid 2017.

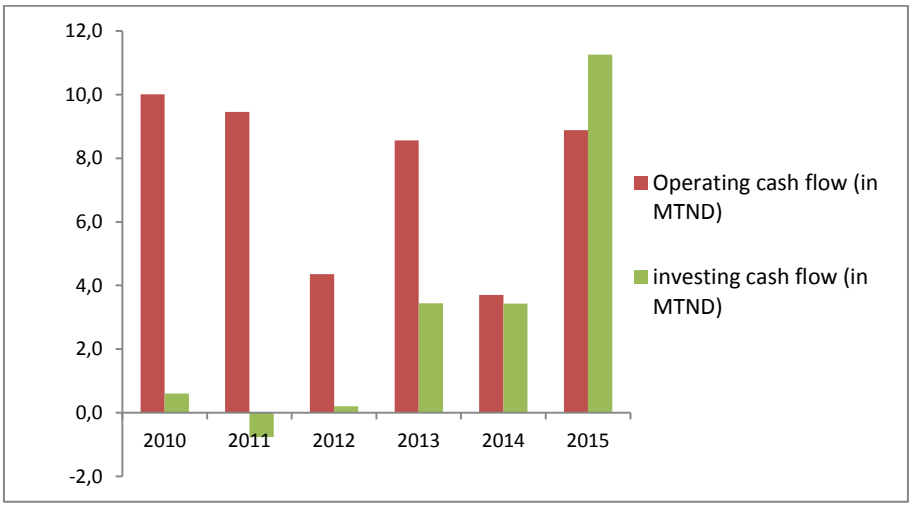

Figure 13: Operating cash flow versus Capex

2.8. Working Capital

The working capital as a percentage of sales is on average 41% for the period 2010-2015. It increased in 2012 to 46% driven mainly by a higher stock. The current assets increased by 10.41% in 2013 as compared to the previous year (31.17 MTND versus 28.23 MTND). Such trend is related to the prices adjustment made by the company on one hand and a relatively fixed cash collecting policy on the other hand. By observing the figure 14, we can see that the working capital structure is relatively stable .Indeed, the current liabilities represents on average 23% of the total assets.

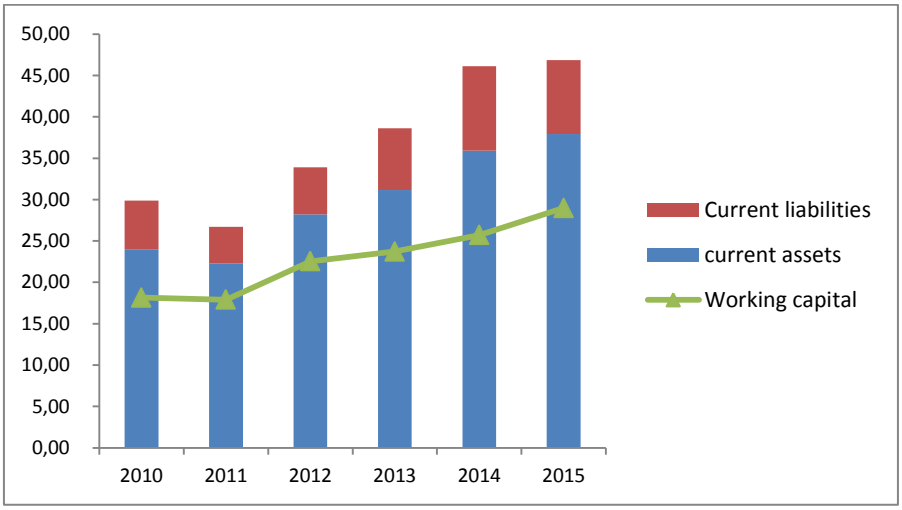

Figure 14: Working Capital structure and evolution

2.9. Dividend versus Net income

The figure 15 reflects the net income and the dividend paid for the historical period. The net income during 2014 decreased significantly compared to the previous year by more than a half from 8.8MTND to 3.73MTND. However, the payout ratio for the dividend remains high at an average of 70 %. As we can see from the figure 15, the payout ratio for 2014 was more than 70% considering the lag between the dividends announcement payment for the fiscal year on one hand. Besides, the net income in 2014 is it the lowest in the period. The management claimed that it would maintain a 70% payout ratio at least until 2017 (as reported in the business plan delivered at the IPO in April 2014).

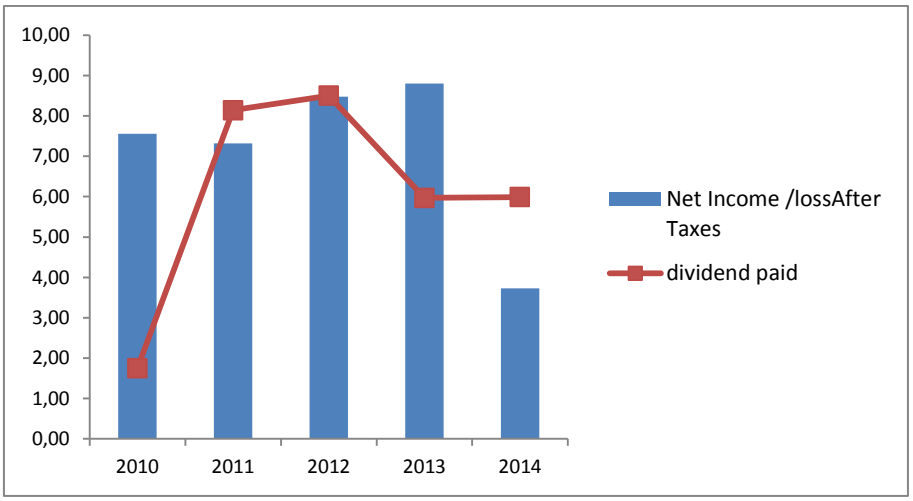

Figure 15: Net Income versus Dividend

2.10. Net Debt versus Operating Cash flow

The company has historically little debt (an average of 3% of the equity for the period 2010-2014). It included short-term debt and overdraft only. This debt structure was not maintained afterwards. In 2015, it changed significantly as Sotipapier had to finance its investment by issuing long-term debt. Thus the net debt jumped from -0.32 TND in 2014 to 9MTND for the following year. Even though the value of the net debt in 2015 seems to be high, the operating cash flow for the same year is covering almost the totality of the net debt as shown in the figure16. Besides that, the amount of net debt is expected to decline as the company will repay its debt and thus it should be able to maintain a higher operating cash flow when comparing to the net debt.

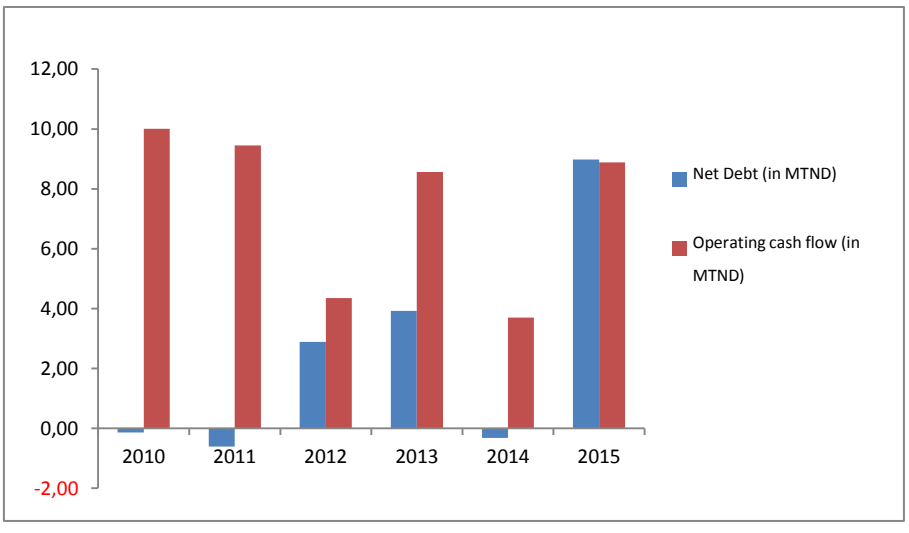

Figure 16: Net Debt versus operating CF

III. Company valuation

1. DCF method

1.1. Main assumptions

I develop in this section the main assumptions that I use for the projection period 2015 -2020. I use the business plan communicated by the management at the IPO (delivered in March 2014) for the period 2016-2017. For the years 2013-1014, I compare the IPO business plan with the actual performance of the company according to the financial statements to check the validity of the business plan. I keep the general trends for Capex, dividend policy distribution and product segmentation (with some minor changes) as the forecasted figures do comply with the actual performance until 2015.

1.1.1. Revenues

As Sotipapier‟s main clients are cement factories, I consider that the company‟s activity is correlated to the cement production. Zhang and Yao (2013) confirm the tight relation between construction and economic growth. Thus, I choose the GDP growth as a proxy for the production growth of Sotipapier and the inflation rate as a proxy of the price increases. I analyze the product segmentation for the historical period to derive the products contributions to the total revenues. Consequently, I assume that revenues are divided as follows: 64% Kraft, 33% TL, 3% Energy and 1% for other revenues. I forecast the revenues growth according to the average GDP growth that is 4.5% for 2016-2019 as reported in the table 1. Then I derive the prices according to the inflation forecast. The table 3 shows the revenues projections for the 2015-2020.

Prodcution (in ton)	2013	2014	2015	2016	2017	2018	2020
kraft	24300	24382	28187	29455	30781	32166	35126
Kraft growth		0,3%	15,6%	4,5%	4,5%	4,5%	4,5%
Tl	22258	20593	23787	24857	25976	27145	29643
TL growth		-7%	16%	4%	4%	5%	4%
inflation	6%	5%	5%	5%	4%	4%	4%
Price per tone (in TND)							
Kraft	1556,44	1799,49	1717,86	1795,17	1870,57	1943,52	2090
Tl	693,57	810,72	726,03	758,70	790,57	821,40	883,31
Revenues(in MTND)							
Kraft	37,82	43,88	48,42	52,88	57,58	62,52	73,41
TL	15,44	16,70	17,27	18,86	20,54	22,30	26,18
Kraft and TL reveneus (in MTDN)	53,26	60,57	65,69	71,74	78,11	84,81	99,60
Energy	1,78	1,78	1,78	2,99	3,25	3,53	4,15
Other	0,40	0,40	0,40	0,75	0,81	0,88	1,04
Total reveneus (in MTND)	**55,43**	**62,74**	**67,87**	**75,47**	**82,18**	**89,23**	**104,78**

Table 3: Revenues forecast for 2015-2020

1.1.2. Depreciation& Amortization "D&A"

I analyze the fixed assets structure for the historical period. I conclude that the structure is stable in relative terms. The figure 17 summarizes the average structure of the PP&E over 2010-2014.

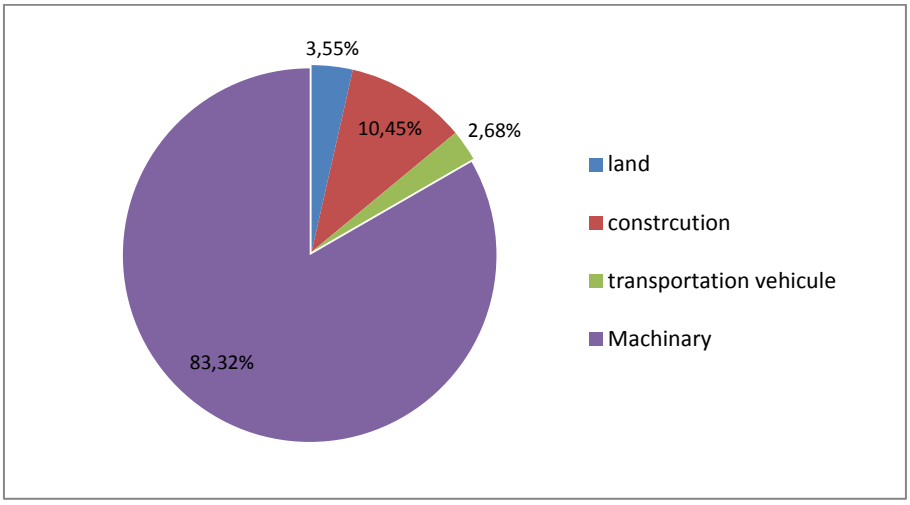

Figure 17:The structure of the depreciation of tangible assets

The machinery contributes with 83%, while construction represents 10.45%. Land and Transportation vehicle represents 3.55% and 2.68% of the total D&A respectively. I maintain this structure for the projection period. Moreover, Sotipapier used the liner method for the depreciation of its assets. Therefore, I decide to derive the depreciation percentage from the historical data by dividing the depreciation of PP&E for a given year over the gross amount. The average depreciation is 2.92% that I use for projections as shown in the table 4.

(in MTND)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
PP&E (gross)	43,58	42,81	43,81	47,11	50,40	61,15	64,92	69,03	71,71	74,61	77,75
Depreciation of PP&E		(1,91)	(0,79)	(1,19)	(2,04)	(1,07)	(1,89)	(2,01)	(2,09)	(2,18)	(2,27)
Depreciation as % of the gross PP&E		4,46%	1,80%	2,53%	4,05%	1,75%	2,92%	2,92%	2,92%	2,92%	2,92%

Table 4: The forecast of depreciation

Moving to the amortization of the intangible asset , I detail the forecast of the amortization in the appendix 2 as the amounts considered for the patent are small .In fact the intangible assets for Sotipapier did not exceed 0.17% of the revenues through the historical period.

1.1.3. Cost of goods sold "COGS" and other expenses

1.1.3.1. COGS

I assume for most of the expenses evolution are related to the revenue growth. Thus, they are projected as a percentage of the revenues. The table 5 summarizes the COGS"s main items for the historical and the projection period. I recognize that the COGS represent 67% of the total revenues. Then, I allocate to each item a weight that corresponds to the historical COGS structure (67% for raw material,10% for furnitures and chemicals,22% for energy and water and 1% for the change in stock).

(in MTND)	2010	2011	2012	2013	2014	2015E	2016f	2017f	2018f	2019f	2020f
COGS	32,51	30,91	30,73	36,34	48,71	46,78	50,57	55,06	59,78	64,79	70,21
Raw material	18,61	21,53	22,79	25,68	30,96	33,44	33,88	36,89	40,06	43,41	47,04
Furniture&Chemicals	3,41	2,37	2,73	3,65	5,39	4,17	5,06	5,51	5,98	6,48	7,02
Energy &Water	8,40	6,77	6,70	7,71	10,05	9,94	11,12	12,11	13,15	14,25	15,45
stock change	2,09	0,24	1,50	0,70	2,30	0,76	0,51	0,55	0,60	0,65	0,70

Table 5:The evolution and projection of the main components of the COGS

1.1.3.2. Other expenses

Other expenses include selling and general administrative expenses, unusual expenses and other operating expenses. I calculate for each one of them their percentage of revenues for the historical period and I assume the same percentage for the projection period. The table 6 displays the evolution of those expenses for the period 2010-2020.

Other expenses (in MTND)	2010	2011	2012	2013	2014	2015E	2016f	2017f	2018f	2019f	2020f
Selling/General/Admin. Expenses,	1,45	2,85	3,43	3,84	4,02	3,15	4,53	4,93	5,35	5,80	6,29
Unusual Expense (Income)	0,27	0,28	0,28	0,08	0,35	0,00	0,75	0,82	0,89	0,97	1,05
Other Operating Expenses	3,41	2,37	3,10	3,55	3,27	0,00	4,53	4,93	5,35	5,80	6,29

Table 6:The evolution and projection of other expenses

1.1.4. Capital expenditure "Capex"

The table 7 shows the evolution of Capex versus the revenues. I assume that the Capex is equal to the acquisitions of machinery and industrial tools. I relate the Capex and revenue in the historical data. The Capex is 5% of the revenues. For the last three years, and as the company is approaching the steady state I reduce the Capex from 5% to 3% and 2% of revenues to converge into the depreciation percentage (depreciation is of 2.92%).

(in MTND)	2010	2011	2012	2013	2014	2015E	2016f	2017f	2018f	2019f	2020f
Revenues	49,76	47,70	48,41	55,43	62,75	67,79	75,47	82,18	89,23	96,69	104,78
PP&E	43,58	42,81	43,81	47,11	50,40	61,15	64,92	69,03	71,71	74,61	77,75
Capex	1,02	-0,77	1,01	3,30	3,28	9,30	3,77	4,11	2,68	2,90	3,14
Capex growth as % of revenues	2%	-2%	2%	6%	5%	14%	5%	5%	3%	2%	2%

Table 7:The evolution and forecast of the capex

1.1.5. Working Capital (WC)

The working capital is an important measure of the company´s efficiency and its financial situation. It measures its ability to cover short-term liabilities using short-term assets. Working capital noted as wc is calculated as follows:

Formula 18

$$wc = current\ assets - current\ liabilities$$

The Current assets include inventory, accounts receivables and other current assets.The current liabilities are composed of accounts payables, and other current liabilities.

First, I project the stock evolution according to the average inventory turnover that is:

Formula 19

$$Average\ inventory\ turnover = \frac{average\ inventory}{COGS} \times 365$$

Moving to the accounts receivable, I calculate the accounts receivables days outstanding for the historical period and I consider the average for the projections.

Formula 20

$$Accounts\ receivables\ outstanding\ = \frac{Accounts\ receivables}{Sales} \times 365$$

Regarding the liabilities side, I forecast the accounts payables referring to the average accounts payable days as the formula suggest:

Formula 21

$$Accounts\ payable\ days = \frac{Accounts\ payables}{Raw\ materials} \times 365$$

The table 8 reports the major forecast components of the working capital (other details are included in the Financial statements appendices)

(in MTND)	2010	2011	2012	2013	2014	2015E	2016f	2017f	2018f	2019f	2020f
COGS	32,51	30,91	30,73	36,34	48,71	46,78	50,57	55,06	59,78	64,79	70,21
Total inventory	16,26	15,70	16,31	11,83	20,64	21,92	22,17	24,14	26,21	28,40	30,78
Inventory turnover		188,69	190,12	141,33	121,65	160	160	160	160	160	160
Accounts Recivables Trade, Gross	6,36	5,95	10,09	18,91	13,39	13,05	15,37	16,74	18,17	19,69	21,34
Accounts recivable days outstanding	46,65	45,53	76,07	124,53	77,89	74	74	74	74	74	74
Accounts Payable	5,44	2,97	4,51	5,82	8,73	6,24	6,24	10,61	11,52	12,48	13,53
Accounts payable days	90,43	42,66	61,22	70,11	87,22	70	70	70	70	70	70

Table 8: The forecast of the main components of wc

1.1.6. Debt

Beginning with the short-term debt, I assume that Sotipapier is having a similar percentage of short-term debt to a benchmark of publicly traded Tunisian industries. Thus, I suppose that the short-term debt would represent 12% of the total liabilities. (See appendix 3 for the benchmark debt structure).

As the company needs to finance its investment activities and paying the dividend, I assume that it would raise long-term debt in the upcoming years implying a change in the capital structure. I suppose that debt is mainly short to medium term (since most of the industries in Tunisia are raising similar types of debt). In the first year of debt issuance, the total face value is reported under the long-term debt. Then, the value reported under the long-term debt for year (n) is equal to the value of the long term debt of year (n-1) minus the principle payment of year (n). When calculating the annual interest paid, I apply the interest rate of year (n) to the long-term debt for the same year. Moving to the principle payment schedule, I assume that the face value is equally divided along the life of debt. (See appendix 4 for details about debt issuance notes).The table 9 displays the evolution of the debt structure for the period.

(in MTND)	2010	2011	2012	2013	2014	2015 E	2016F	2017F	2018F	2019F	2020F
overdraft&short term debt	2,03	1,41	0,55	1,01	0,49	5,48	5,27	3,73	4,49	3,21	6,91
Current portion of long term debt	0,00	0,00	0,00	0,00	0,00	3,56	3,55	3,55	3,17	4,17	1,00
Long term debt	0,00	0,00	0,00	0,00	0,00	10,67	3,55	6,33	6,17	10,00	13,00

Table 9: The evolution of the debt stucture (historical and projection period)

Concerning the interest rate, I consider the average rates reported by the Central bank of Tunisia for the medium and long-term debt for industries in 2015. I assume that the interest rates will increase by 5% as compared to the previous year‟s interest each year starting form 2016. This increase is defined as the average variation for the interest rates between 2013-2015. (See appendix 5 for the interest rates forecast).

1.2. WACC calculation

As the company does not have preferred stocks, the WACC is composed of the cost of equity and Debt. I use the Tunisian Central bank website, Damodaran estimates (updated in February 2016) and Thomson Reuter"s terminal as sources of inputs for the WACC calculations. In the following sections I detail the steps to get the WACC that is shown in table 12.

1.2.1. Cost of equity (K_E)

The cost of equity is calculated according to the CAPM formula (12) as developed in the section1.4.1.1 .The inputs of the formula are considered as detailed below:

The proxy for risk free is the yield of 5- year Tunisian Bond. Thus, $R_f = 5.95\%$ as showed in the table11. The yield is extracted from the Tunisian Treasury bonds list available on the Tunisian Central Bank web site (See appendix 6 for more details).

Description	Maturity Date	Market of Issue	Currency	Issue Date	Yield
5 -year TND bond	Jun 2015	Tunisia	TND	Jun-2014	5,956

Table 10: The yield of 5-years Tunisian Treasury bond.

The $\beta_{unlevered}$is considered as the average of the peer group"s betas as shown in the appendix 7. Then, I calculate the $\beta_{levered}$ using the formula (14). For the tax rate, and the debt ratio, I consider the figures of 2015. The calculation yield a $\beta_{levered} = 0.76$. It is also important to note that I consider $T = 20\%$[5] instead of a 30% that represents the original corporate tax rate in Tunisia. The next step is to determine the country risk premium that I take from Damodaran estimates (updated in February 2016) derived according to Moody"s ratings of the countries (Appendix 8).

1.2.2. Cost of Debt (K_d)

Regarding the interest rate, I consider the weighted average of the long and short-term interest rate. The short-term interest rate is calculated as the average of the implied interest paid on factoring for the accounts receivables (see appendix 9), the calculation yields a rate of 1%. While the

[5]The Article 1 of the law 99-92 of 17 August 1999 related o of the financial market indicates that the corporate reduced to 20% for companies who conduct the admission of their common shares for trading on the stock exchange provided that the free float represents at least 30% of its capital

medium/long term interest rate is derived according to the rule TMM[6](or money market rate) +4 as it is considered the benchmark in Tunisia for 2015 interest rate.

I consider the last TMM for February 2016 as shown in the table 11 of 4.22%.

Indicator	2013	2014	2015	2016
Janurary	4,11	4,71	4,89	4,25
February	4,22	4,68	4,8	4,22
March	4,33	4,72	4,82	
April	4,7	4,72	4,8	
May	4,69	4,7	4,77	
June	474	4,7	4,8	
July	4,73	4,98	4,78	

Table 11: TMM for the Tunisian market (source:Central bank of Tunisia website)

In order to check the validity of the calculated interest rate, I look for the interest rate considered in 2015 for similar loans. Indeed, the derived rate of 8.25% matches with the last interest rate communicated by the central bank for a publicly traded company. Besides, this rate converges also to the average interest rate of similar loans. (See appendix 10 and 11 for interest rate in Tunisia for 2015).

For the Default spread, I use the estimates of Damodaran according to the country‟s rating (Moody‟s ratings).See appendix 8 for further details.

[6]The TMM is used as a reference to determine most of lending and deposits rates applied by banks for economic purposes. According to the Central bank of Tunisia, the money market rates are defined as the interbank transactions that reflect the liquidity among them. Thus, the TMM is the weighted average of those daily interbank rates.

WACC	
Cost of equity (ke)	15,9%
rf	5,95%
Levered beta	0,84
Unleverd beta (comperables)	0,645
Equity risk primum	11,87%
Cost of debt (kd)	7,67%
Default (Damodaran)	4,19%
Default (central bank)	4,25%
Default	4,22%
I(short term)	1,00%
I (long term)	8,22%
Interest Rate	3,45%
Equity	60,46%
Debt	39,54%
WACC	12,64%

Table 12:WACC components

1.3. Terminal value Calculation

The terminal value reflects the company‟s cash flows beyond the projection period assuming a stable performance of the company, in other words, reaching the steady state. As I mentioned in the section 1.4.4, I calculate the TV using the formula (16). I use the last FCFF for the explicit period, the derived WACC and the long-term growth that I detail in the next section.

1.3.1. Long term growth rate g

The long-term growth rate is usually determined according to the forecasted economic indicators (GDP growth or inflation rate) of the country of operations. The GDP growth in Tunisia is expected to grow at an average rate of 2%. (See appendix12). Damodaran (2008) suggests that g is usually above 1% to 2% of the economic growth. Given the current political and economic situation in Tunisia and Libya, I consider that g of Sotipapier should not go beyond 1%.

1.4. Company valuation

In order to get the FCFF I use the formula (5.b) in the section 1.2. I choose 2015 the valuation year. Thus, I consider the cash flow starting from 2016. The table 13 displays the main steps to get the FCFF‟s (the detailed steps are shown in the appendix 17):

(in MTND)	2016	2017	2018	2019	2020
EBIT	13,69	14,98	16,65	18,13	19,47
minus Taxes	-2,66	-2,99	-4,92	-5,29	-5,50
plus D&A	1,83	2,04	2,12	2,20	2,57
minus Capex	-3,81	-4,15	-2,70	-2,93	-3,17
minus change in WC	2,57	-2,22	-2,29	-2,38	-2,55
FCFF	11,62	7,65	8,85	9,72	10,80

Table 13: The FCFFs for 2016-2020

Later, I discount the FCFF‟s founded below to the WACC. The sum of the discounted cash flows that is noted as $\sum NPV(FCFF)$ plus the TV yields 128.24 MTND which is the enterprise value. By deducting the Net Debt of 2015, I get the equity value of Sotipapier which is 119.23MTND as shown in the table 14.

WAAC	12,64%
Long term growth rate	1%
Terminal value (TV)	93,71
Sum of NPV (FCFF)	34,53
Entreprise value	128,24
Net Debt (2015)	9,01
Equity value (in MTND)	119,23
Number of shares outstanding(in millions)	26,11
Share price (in TND)	4,57

Table 14: A summary of the DCF valuation

1.5. Sensitivity analysis

1.5.1. WACC and g sensitivity analysis

I perform a sensitivity analysis by simulating two parameter-among the drivers of the DCF- as I develop in the section 2.1- g and WACC. The ration behind this analysis is to test the effect of changing the parameters and to see what driver is affecting more the share price. Fixing a row and observing the corresponding values of the share price for each column is nothing but fixing the g and varying the WACC. The other way to read the table 15 is to fix a column-as keeping the WACC constant –and changing rows –for a variant g. The table 15 shows the results of the sensitivity analysis performed. I display in the top row the WAAC values, in the first column the g values and in the rest of the table the share prices.

G \ WACC	4,57	13,41%	13,16%	12,90%	12,64%	12,41%	12,16%	11,91%
0,00%		4,04	4,11	4,18	4,25	4,32	4,40	4,48
0,50%		4,18	4,25	4,32	4,40	4,48	4,56	4,65
0,08%		4,06	4,13	4,20	4,27	4,34	4,42	4,50
1,00%		4,32	4,40	4,48	4,57	4,65	4,74	4,83
1,25%		4,40	4,48	4,57	4,66	4,74	4,83	4,93
1,50%		4,48	4,56	4,65	4,75	4,84	4,93	5,04
1,75%		4,56	4,65	4,75	4,84	4,94	5,04	5,15

Table 15: Sensivitiy analysis for WACC and g

Considering a fixed g=1% (base case) and a fluctuating WACC ranging from 11.91% (4.83 TND) to 13.41% (4.32 TND) yields a maximum variation of 11.83%. Moving to the other case that is fixing the WACC=12.66% and changing the g from 0% (4.25TND) to 1.75% (4.84 TND) yield a variation of 13.91% in the share price. Changing the two parameters within the same range for each one (by decreasing and increasing it by 25 basis point from the base case) results in different variation for the share price. Therefore, I conclude that the share price is more sensitive to a fluctuating g since 13.91%>11.83 %. In fact, Steiger (2008) also confirms that the DCF valuation is very sensitive to changes in g. The author explains that such high sensitivity is due to the importance of the TV within a DCF valuation as it accounts for the main part of the equity value according to that method.

1.5.2. COGS and Capex sensitivity analysis

I attempt through this analysis to see the effect on changing the COGS and the Capex independently on the share price (as I model both of the drivers as a percentage of revenues). Thus, I build several scenarios by varying the COGS or Capex. The tables 16 and 17 summarize the share price changes according to the scenarios considered:

COGS as % of revenues	Share price (in TND)
64%	5,51
65%	5,19
66%	4,88
67%	**4,56**
68%	4,21
69%	3,91
70%	3,58

Table 16: Sensitivity analysis of share price according to COGS

Capex as % of revenues	Share price (in TND)
0,50%	5,73
1%	5,35
2%	4,95
3%	**4,56**
4%	4,16
5%	3,76
6%	3,35

Table 17: Sensitivity analysis of share price according to Capex

Looking to table 16, we can see that lowering the COGS by 300 basis point increased the share price by 20.8%, while the decrease by the same number of basis point yields a decrease of 27.3% of the share price.

Moving to the table 17, the trend of the share price is comparable to the one observed in the table 17. In fact, as Capex should be distinct from zero, I assume that 0.5% is the lowest value for Capex. Thus, I lower the Capex by 250 basis point instead of 300 basis point. Considering the Capex changes, share price demonstrated more sensitivity as it increases by 25%. For the extreme increase of Capex by 300 basis point, (Capex is 6% of revenues) the share price went down by 36.11% to reach a value 3.35TND. Even though both analysis result in a similar share prices for the same basis point change, the effect of changing the Capex is more pronounced.

The sensitivity analysis demonstrates a significant influence on the share price driven by values that might be irrelevant from an economic perspective, yet their impact on the share price remain remarkable. Therefore, one should also consider other valuation methods such as relative valuations.

2. Relative valuation

2.1. Peer group selection

For constructing the peer group, I consider most of the characteristics mentioned in the section 2.2. I select paper and packaging companies that operates in emerging markets. Those characteristics are fundamental to maintain the macroeconomic specificities of the developing markets and to ensure a similar business model that applies to the industry in question. Then, I recognize the importance of the size of the business reflected by the total revenues of the peers. I use the same base peer group that I extract form Eikon[7] multiples categories that includes 15 companies. However, I had to shrink this number to exclude some outliers.

2.2. Multiple selections

When performing a multiple valuation two main categories are usually considered-share price multiple and enterprise value multiples–as they are the most commonly used. Enterprise multi-

[7]The data base available in UCP on Thomson Reuters terminals

ples usually have an operating related metric (EBIT or Sales) in the denominator. Their multiplication by the corresponding company metric would give the firm value from which we subtract the net debt to get the equity value. Price multiples on the other hand, are concerned with the share price in the nominator and a per share metric in the denominator. Subsequently, this category yields directly the share price.

2.2.1. Enterprise Multiples

For this category, I consider three main multiples: EV/EBIT, EV/EBITDA and EV/Sales. I use a larger peer group and smaller peer group alternatives. The larger peer group is presented in the table 18.

Company Name	Country	Sector of Activity	EV/EBITDA	EV/ EBIT	Ev/Sales
Sotipapier SA	Tunisia	Paper Mills & Products	12,34	NA	0,36
Kaplamin Ambalaj Sanayi ve Ticaret AS	Turkey	Paper Packaging (NEC)	18,51	4,51	0,37
Radha Madhav Corp Ltd	India	Non-Paper Containers & Packaging	9,26	NA	
Olmuksan International Paper Ambalaj S	Turkey	Paper Packaging (NEC)	5,42	11,84	1,15
Jordan Paper and Cardboard Factories…	Jordan	Paper Products (NEC)	7,64	8,17	1,12
Suez Bags Co SAE	Egypt	Paper Packaging (NEC)	4,58	4,44	0,48
Ruchira Papers Ltd	India	Paper Mills & Products	9,57	11,05	0,77
Saigon Plastic Packaging JSC	Vietnam	Plastic Containers & Packaging	NA	4,96	0,22
BF Kommunar PAO	Russia	Paper Products (NEC)	5,26	8,99	0,86
Tunas Alfin Tbk PT	Indonesia	Paper Packaging (NEC)	14,49	13,33	0,92
Omani Packaging Co SAOG	Oman	Paper Packaging (NEC)	NA	NA	0,56
Ire-Tex Corporation Bhd	Malaysia	Plastic Containers & Packaging	NA	NA	2,58
General Company for Paper Industry SA	Egypt	Paper Products (NEC)	NA	NA	2,81
Med Paper SA	Morocco	Paper Products (NEC)	92,81	NA	2,49
Saudi Paper Manufacturing Co SJSC	Saudi Arabia	Paper Products (NEC)	2,82	NA	NA
National Packaging Factory Ltd	Oman	Paper Packaging (NEC)	13,23	13,21	1,34

Table 18: Larger peer group of Sotipapier (entreprise value multiples)

I use the median of each multiple (See appendix 13 for the median used) and I multiply it by the corresponding metric. The average of the three multiplication yields the enterprise value of 109.53 MTND. The table 19 represents the main results of the valuation.

(in MTND)	2015	x Median multiple
EBITDA	15,66	145,02
EBIT	14,60	125,28
Total sales	67,79	58,30
Average entreprise value		109,53
minus Net Debt		9,00
Equity Value		100,52
Share price (in MTND)		3,85

Table 19: Summary of entreprise value multiples (Larger peer group)

The share price derived from this multiples is smaller to the one found according to DCF (3.85<4.57). Such value is anticipated as the DCF usually results in higher share price. Another

reason could be the missing data as shown in the table 18 (EV/EBIT). Moreover, the EV/Sales is significantly lower comparing to the other two metrics. In attempt to increase the accuracy of this multiple valuation, I reduce the number of the peers considering the ones that have closer range in terms of size (market cap and Total sales).The table 20 display the smaller peer group considered.

Identifier	Company Name	Country	EV/EBITDA	EV/ EBIT	Ev/Sales
STPAP.TN	Sotipapier SA	Tunisia	12,34	NA	0,36
OLMIP.IS	Olmuksan International Paper Ambalaj S	Turkey	5,42	11,84	1,15
JOPC.AM	Jordan Paper and Cardboard Factories…	Jordan	7,64	8,17	1,12
SBAG.CA	Suez Bags Co SAE	Egypt	4,58	4,44	0,48
RCHR.NS	Ruchira Papers Ltd	India	9,57	11,05	0,77
TALF.JK	Tunas Alfin Tbk PT	Indonesia	14,49	13,33	0,92

Table 20: Smaller peer group (entreprise multiples)

For the peer group shown above I consider two different scenarios: I use the same 3 multiples and again I consider the median. For the second scenario, I eliminate the EV/Sales multiples as it yields a very low enterprise value. The results are reported in the table 21 for the two scenarios.

(in MTND)	2015	x Median multiple
EBITDA	15,84	121,02
EBIT	14,60	161,34
Total sales	67,00	61,64
Average entreprise including Sales metric		114,67
Average entreprise value excluding Sales metric		141,18
minus Net Debt		9,00
Equity Value		132,18
Share price excluding Sales metric (in TND)		5,06
Share price including Sales metric (in TND)		4,05

Table 21: Summary of entreprise value multiples (Smaller peer group)

The share price of the first scenario increased slightly by 4.9% from 3.85 TND to 4.05 TND. However, the increase became more significant for the second scenario as the share price jumped from 3.85 TND to 5.06 TND.

2.2.2. Price multiples

Regarding the price multiples, I only use a reduced peer group as I had to eliminate the price outliers and the empty rows for the considered multiples. I consider the following multiples: P/E,, P/OCF per share, P/CF per share ,P/Sales per share and P/D (See appendix 18 for ratio formulas details).

Identifier	Company Name	P/BV	P/E	P/OCF per share	P/Sales per Share	P/ CF Per Share	P/D
STPAP.TN	Sotipapier SA	2,69	17,87	24,50	1,30	8,62	33,33
SPP.HN	Saigon Plastic Packaging JSC	0,50	10,97	NA	0,14	NA	NA
TALF.JK	Tunas Alfin Tbk PT	1,60	13,07	9,08	1,04	8,69	NA
OP.OM	Omani Packaging Co SAOG	1,81	6,53	28,10	0,71	10,08	NA
IREE.KL	Ire-Tex Corporation Bhd	0,41	NA	NA	0,27	NA	NA
SBAG.CA	Suez Bags Co SAE	2,53	13,00	NA	1,27	NA	15,50
KAPLM.IS	Kaplamin Ambalaj Sanayi ve Ticaret AS	0,95	NA	19,67	0,17	4,80	NA
PAP.CS	Med Paper SA	1,61	NA	3,23	0,31	872,17	NA
RCHR.NS	Ruchira Papers Ltd	1,19	6,55	3,57	0,35	NA	20,19
JET.CS	Jet Alu Maroc SA	1,13	NA	NA	NA	NA	31,94
OLMIP.IS	Olmuksan International Paper Ambalaj S	1,10	48,49	18,66	0,56	337,99	NA

Table 22: Peer group for price multiples

Multiple	Minimum	Median	Maximum
P/BV	0,41	1,16	2,53
P/E	6,53	11,99	48,49
P/OCF per share	3,23	13,87	28,10
P/Sales per Share	0,14	0,35	1,27
P/ CF Per Share	4,80	10,08	872,17
P/D	15,50	20,19	31,94

Table 23: Summary of price multiples metrics

I derive from the financial statement the per share metrics for 2015. I exclude the P/CF per share as the cash flow for 2015 (reported by Thomson Reuters but not updated) is negative. I also omit the P/Sales per share it results a very low value of 0.9 TND. To get the share price of Sotipapier, I multiply the per share metric by the appropriate peer multiple. I present in the table 24 the main findings for the price multiple valuations.

(in MTND)	
Book Value	37,84
Earnings per share	0,43
OCF per share	0,34
sales per share	2,60
CF per share	-0,06
Dividend peer share	0,28
Share price according to:	
P/BV	1,68
P/E	5,12
P/OCF per share	4,72
P/D	5,56
P/Sales per share	0,91
Average	4,27

Table 24: Summary of the price multiple valuation

The P/BV result in the second lowest share price value of 1.86 TND after the P/Sales that return a value per share 0.91TND. P/BV is usually misleading when the peers considered are using differ-

ent accounting methods especially when it concerns the depreciation methods. In addition, P/BV does not generate an accurate multiple as the peers have different capital structure and market cap from Sotipapier. I try to satisfy most of characteristics and consider the limitations mentioned above. However, due to the limitation of available data (from Reuters) I had to omit some selection characteristics for the comparable selection. Nevertheless, the results found for the P/E and P/OCF per share are convergent to the enterprise multiples figures and to the share price deduced from the DCF.

2.3. Transaction multiples valuation

Transaction multiple is usually used to value a company that is a target for a takeover or sale. Therefore, it is a commonly used in mergers and acquisitions. I decide to use it aiming to enlarge my valuation perspectives. It is an intuitive method as it gives an idea about the values of similar companies that were subject of a transaction(such as acquisitions or share buyback). Due to the limited data about recent transactions within the industry, I consider the transactions that were announced between 2013 and 2015. I do not recognize any restriction on the country of the target[8]. Including partial and entire acquisitions[9] as well as share buybacks[10]. I consider five transactions including two acquisitions and three share buyback. (See appendix 14 for the transactions list).I use for all the transactions the same enterprise multiples as considered in other previous section as the table 25 shows.

Multiple	Minmum	Median	Maximum
EV/EBITDA	7,67	8,63	24,71
EV/Sales	0,56	1,43	1,93
EV/EBIT	0	14,97	28,01

Table 25: Summary of transaction multipes˝metrics

[8]The Data for transactions in the paper and packaging industry for the emerging markets were not enough to construct a sample for the valuation purpose. Thus, I remove all filters concerning the countries of the target.

[9] The acquisition of a target consists in buying a portion or the full of its capital by an acquirer.

[10]The share buyback is the act of repurchasing shares from current shareholders. It is usually done by companies to increase the value of its shares or to avoid a takeover threat.

(in MTND)	2015	x Median multiple
EBITDA	15,84	136,70
EBIT	14,60	218,58
Total sales	67,79	96,93
average entreprise value		150,74
minus Net Debt		9,01
Equity Value		141,73
share price		5,43

Table 26: Summary of the transaction multiple valuation

The average of the three-transaction multiples returns a share price of 5.43 TND. This value is relatively higher than previous results for several reasons. One has to take into account that the analyzed transactions are not sharing similar economic characteristics as I highlight above. Besides, the range of two years as a timeframe implies divergent circumstances within the comparables. As reported in the table 26, the resulted share price of the company is 20% more expensive than the one derived from the DCF. However, I believe that it is still a reasonable value considering the timeframe of the transactions and the average share price of Sotipapier-between April 2014 and April 2015-, which was 5.28 TND (See figure 4). In addition to the time frame and the nature of the economies of the targets" nations ,one should bear in mind that the EV of the target include also the value of its goodwill[11].The same applies for the case of a share buyback. The purpose of this transaction is to increase the share price, thus the proposed share price should be higher than the current one.

3. Summary of valuation methods applied

After considering a sensitivity analysis for the DCF and different multiples valuations, I derive a share price range as shown in the table 27:

[11]The premium value paid for a target as compared to its actual worth. It is usually relate to its brand name or its robust customer base and reputation in the market.

Valuation method	(in TND)
DCF method	
Share price base case	4,56
Sensitivity analysis (avearge)	4,54
Relative valuation	
Share price (sales entreprise value ,bsae case)	3,85
Share price (scenario1)	4,05
Share price (scenario 2)	5,04
Average sahre price (price multiples)	4,27
Share price (Transaction multiples)	5,43
Average share price	**4,53**

Table 27:Summary of share price according to valuation methods applied

In the table above, I consider the average[12] of all the methods analyzed . Thus, the share price of Sotipapier is 4.53 TND. However, its share is currently traded at 3.8 TND in last February 2016 . Therefore, I conclude that the stock price of the company is undervalued.

4. Comparing my results with an analyst valuation

In order to compare my results to a recent analyst valuation, I refer to the valuation performed by KPMG –Tunisia that was conducted in mid of 2015. Unfortunately, I had limited information concerning the valuation of Sotipapier. In fact, valuations in Tunisia are publicly available only for IPO purposes. For trading recommendations, the analysts are only concerned with analyzing the fundamentals of the company. Even thought, the analyst provided me with few information about the valuation he performed, he answered several questions that I had about the business specificities. For results comparison, I consider the DCF valuation.

4.1. WACC calculation

As WACC is a main driver of a DCF valuation, it is important to understand the inputs and assumption made for its calculations. For the same share price valuation, having distant WACC leads obviously to different values. Therefore, I compare the WACC used by the analyst versus mine. I consider a WACC of 12.64% while the one considered by the analyst is of 12.37%, that is

[12] For the sensitivity analysis average share price , I consider only the WAAC and g sensitivity.

detailed in the table 28. This distinction between the two values is the result of small and marginal differences for most of the components.

WACC	
cost of equity (ke)	15,40%
rf	5,95%
Levered beta	0,64
Equity risk primum	10,35%
cost of debt (kd)	5,78%
TMM	4,19%
I(short term)	0,98%
I (long term)	0
Equity	75,00%
Debt	25,00%
waac	12,37%

Table 28: KPMG -analyst WACC calculations

For the cost of equity, the values are relatively close as mine is of 15.9% (as shown in table 12) and the one of KPMG is of 15.4%. %. Both weights were calculated according to the CAPM formula. However, the margin of the cost of debt is relatively significant (5.78% for KPMG and 7.7% for mine) around 2%. By looking to the cost of debt components in the table above, we conclude that the analyst did not consider the interest rate for long term as the company in mid 2015 did not raised debt yet. Thus, he considers only the interest rate paid for the short-term debt for factoring.

4.2. The comparison of DCF results

For the DCF valuation I was not provided all details of this valuation method (terminal value, NPV of cash flows…).I report the provided results in the table 29.

WACC	12,37%
long term growth rate	1,50%
Equity value (in MTND)	112,268
number of shares outstanding (in millions)	26,106
Share price (in TND)	4,30

Table 29: Summary of DCF valuation of KPMG analyst

Regarding the long-term growth rate, my assumption was more conservative as I consider 1% and the analyst assumed a higher rate of 1.5%. My equity value(considering the DCF) is higher

by 6.6% (119.72 versus 112.268 in MTND). Thus, I end up with higher share price. Despite the differences in the assumptions considered for both valuations, the divergence in share prices remains small.

As I was not given detailed information regarding KPMG‟s relative valuation, I do not consider it under this section. (See appendix 20 for KPMG main results for the relative valuation)

IV. Conclusion:

I attempt through this dissertation to give an overview of the main approaches in equity valuation field. Then I choose to value the equity of Sotipapier using two main approaches, the DCF and the relative valuation. The two methods yield different share prices .Therefore, I consider the average of the methods applied that yields a value of 4.53 TND. Even though the DCF is considered the most accurate valuation method, we can see that small changes in the FCFF or terminal value inputs could influence the share price easily. Later, I perform a relative valuation using enterprise value multiples sand share price multiples. I consider different peer groups and metrics compositions when performing the valuation for the enterprise multiples. The results confirm that the valuation accuracy depends- among other- on two main factors: the number of companies in the peer group and range of used metrics. In a further step, I perform a precedent transaction multiples. Since I had a limited data about the transactions within the paper and packaging industry, I use a three years‟ period as a time frame of the transactions (2013-2015) and I omit most of the target selection criteria. Yet, I judge that the results are reasonable considering the limitation mentioned above, as the share price is 20% higher than the one found using the DCF.

In the last section, I compare my findings to a recent valuation of Sotipapier. The comparison yields a reasonable difference in the share prices of 5.3 %. It could be explained by a difference in the valuation dates and some other assumptions. Considering the share price derived from my valuations, and the one derived from KPMG analyst, I conclude that the stock price of Sotipapier is undervalued as it is traded at a significantly lower value than its faire value.

In short, equity valuation could be influenced easily by slight changes in the parameters, assumptions made or the choice of the methods used. Thus, the analyst should consider more than one

method when determining a share price to increase the accuracy of his/her valuation and consequently his/her recommendations.

V. Appendices:

Appendix 1:Axis Bourse Recommendation - Tunisian brokerage firm- recommendation about Sotipapier (September 2015)

Acheter (+)	Dernier : 4,38 TND	Flottant : 35,2 MTND (33,6%)

	2014	2015P	2016P
PER	32,1	14,3	10,8
PBV	4,1	3,4	3,1
Div/a en TND	0,150	0,250	0,300
Div Yield	3,0%	5,7%	6,8%

	2013	2014	2015P	2016P
CA en MTND	55,4	62,7	77,4	88,3
RN en MTND	8,8	3,7	7,3	9,8
T Marge Nette	15,8%	5,9%	9,5%	11,0%
ROE	28%	12%	22%	27%

	2014	2015P
CB en MTND	119,8	104,9
Gearing	0,9%	8,3%
VE/CA x	1,9	1,4
VE/EBITDA x	17,9	8,7

Appendix 2:Intangibile Assets Amortization Forecast

(in MTND)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Intangibles, Net	0,18	0,18	0,00	0,00	0,53	0,53	0,00	0,00	0,53	0,53	0,00
Intangibles - Gross	0,18	0,18	0,18	0,18	0,53	0,53	0,27	0,00	0,53	0,53	0,27
Intangible Amortization	0,00	0,00	(0,18)	(0,18)	0,00	0,00	(0,27)	(0,27)	0,00	0,00	(0,27)

I assume that the gross value of the intangible assets for the projection period will remain the same as of 2014.I also assume the same useful life of 4 years renewable as reported in Financial statements. For the amortization method, I maintain the method considered for the past years; the amortization equal to zero for the first two years. For the last two years, the gross value is amortized equally on the two periods.

Appendix 2**:** Debt Structure Analysis of Tunisian Publicly Listed Companies.(Source:Thomson Reuters and own calculations).

(in MTND)	2010	2011	2012	2013	2014	Average
Total liabilities						
Ciment de Bizerte	35,30	45,00	50,60	120,50	164,50	
Assad	46,10	55,60	66,60	67,90	82,30	
Carthage ciment	218,20	507,20	6,60	18,70	31,80	
Alkimia	101,30	61,00	94,80	108,30	120,20	
ICF	15,00	26,20	35,20	42,80	48,70	
GIF	2,17	2,64	2,06	1,99	7,69	
Average total liabilities	69,68	116,27	42,64	60,03	75,87	
Long term debt as a percenatge of total liabailities						
Ciment de Bizerte	0,31	0,15	0,17	0,04	0,44	
Assad	0,29	0,22	0,18	0,00	0,31	
Carthage ciment	0,53	0,74	0,67	0,55	0,45	
Alkimia	0,21	0,08	0,17	0,25	0,28	
ICF	0,00	0,00	0,22	0,31	0,33	
GIF	0,00	0,00	0,00	0,00	0,14	
Average long term debts	0,22	0,20	0,24	0,19	0,32	23%
Short term debt form total liabailities	0,22	0,20	0,24	0,19	0,32	
Ciment de Bizerte	0,26	0,00	0,00	0,00	0,00	
Assad	0,30	0,46	0,39	0,35	0,22	
Carthage ciment	0,01	0,00	0,01	0,03	0,04	
Alkimia	0,14	0,00	0,00	0,01	0,01	
ICF	0,20	0,38	0,16	0,05	0,08	
GIF	0,00	0,00	0,00	0,00	0,40	
Average short term debts	0,15	0,14	0,10	0,07	0,13	12%
Cash & cash equivalant as % of revenues						
Ciment de Bizerte	1,10	1,08	1,03	0,07	0,11	
Assad	0,05	0,04	0,05	0,06	0,06	
Carthage ciment	4,60	1,46	0,03	0,02	0,01	
Alkimia	0,14	0,22	0,09	0,09	0,13	
ICF	0,06	0,04	0,06	0,12	0,07	
GIF	0,68	0,32	0,40	0,49	0,52	
Average cash &equivalent as % of revenues	0,08	0,15	0,12	0,14	0,15	13%

Appendix 3: Debt Note Issuance (forecasted):

Issuance year	2015
Face value (in MTND)	10,67
Inerest rate	8,64%
Maturity year	2017
Annual interest payment (in MTND)	0,92

Issuance year	2017
Face value (in MTND)	6,33
Inerest rate	9,29%
Maturity year	2019
Annual interest payment (in MTND)	0,59

Issuance year	2018
Face value (in MTND)	3,00
Inerest rate	10,00%
Maturity year	2020
Annual interest payment (in MTND)	0,30

Issuance year	2019
Face value (in MTND)	8,00
Inerest rate	11,21%
Maturity year	2026
Annual interest payment (in MTND)	0,90

Issuance year	2020
Principle	6,00
Inerest rate	11,49%
Maturity year	2026
Annual interest payment (in MTND)	0,69

Appendix 4: Interest Rate Forecast:

Interest rates forecast	2015	2016	2017	2018	2019	2020
Medium IR	8,22%	8,63%	9,06%	9,52%	9,99%	10,49%
Long IR	9,00%	9,45%	9,92%	10,42%	10,94%	11,49%

Appendix 5: Yields of Tunisian Treasury Bonds (B,T,A). (Source: Central bank of Tunisia web site)

- Weighted average rate (TMP) of **bonds equivalent to Treasury bonds (B,T,A)** for the last auction (in % per year)

Description	Date of the last auction	Line	TMP
4 years	03/12/2013	December 2016	5.416
	09/03/2016	January 2018	5.627
5-year national debenture loan - Class A	June 2014	June 2019	5.950
6 years	January 2015	January 2021	6.558
7 years	06/09/2011	March 2016	6.082
	07/05/2013	October 2018	6.080
	07/10/2014	February 2020	6,174
	02/12/2014	October 2020	6.397
7-year national debenture loan - Class B	June 2014	June 2021	6.150
8 years	11/02/2016	April 2023	6.631
10 years	04/11/2008	October 2016	6.378
	03/02/2009	July 2017	5.672
	02/12/2008	December 2018	6.428

Appendix 6: Peer Group Unlevered Beta.(Source:Thomson Reuters)

Company name	EBIT	EBITDA	Current EV/EBITDA	EV/Sales	EV/EBIT	beta(unleverd)
Sotipapier	14,60	15,84	13,69	1,39	13,65	0,37
Tunas Alfin Tbk PT	10,802	12,138	5,33	0,87	9,1	0,84
Suez Bags Co SAE	11,743	12,411	5,92	1,18	8,35	0,2
Jordan Paper and Cardboard Factories	1,766	3,93	5,42	1,15	11,84	0,6
Kaplamin Ambalaj Sanayi ve Ticaret SA	0,591	2,923	12,34	0,36	na	0,79
Ruchir Papers Ltd	9,33	12,35	4,53	0,48	4,39	0,76
Olmuksan International Paper Ambalaje	18,143	26,405	9,37	0,68	na	0,71
					average beta	0,65

Appendix 7: Damodaran Estimates of the Equity Risk Premium of Tunisian market (Source:Damodaran web site)

Country	Tunisia
Moody's sovereign rating	**Ba3**
S&P sovereign rating	NA
CDS spread	4,58%
Excess CDS spread (over US CDS)	4,19%
Country Default Spread (based on rating)	3,99%
Country Risk Premium (Rating)	5,56%
Equity Risk Premium (Rating)	11,81%
Country Risk Premium (CDS)	5,84%
Equity Risk Premium (CDS)	12,09%
Region: Africa	
Country Risk Premium (simple average))	6,35%
Total Equity Risk Premium (simple average)	12,35%
Country Risk Premium (GDP weighted)	5,97%
Total Equity Risk Premium (GDP weighted)	12,22%

In order to estimate a country risk premium, Damodaran determine a mature market premium and add an additional country risk premium which is given by the risk of the concerned country. He considers that S&P500 is a proxy for a mature market and calculate its implied equity risk premium. Then he assigns to the country the corresponding default spread of the rating of the Sovereign bonds issued by the country.

Appendix 8: Short Term Loan Interest Rate Calculation for Sotipapier (Source own calculations)

(in MTND)	2011	2012	2013	2014
Recivable Kraft	3,62	7,78	12,87	9,32
Clients-Kraft	0,45	1,09	0,36	2,23
Note reciavebles Kraft	3,18	6,69	12,51	7,09
Recivable White paper	0,00	0,00	0,00	0,00
Clients white paper	0,00	0,00	0,00	0,00
Note reciavble white paper	0,00	0,00	0,00	0,00
Recivable Liner	1,46	1,33	4,95	2,11
Clients Liner	0,70	0,76	0,78	1,20
Note recivable Liner	0,76	0,58	4,17	0,91
Debtors energy	0,30	0,41	0,53	0,66
Bank check	0,51	0,48	0,48	1,23
Other recivables	0,00	0,00	0,00	0,00
Doutdful clients	0,06	0,06	0,07	0,07
Provsion for doutful clients	(0,02)	(0,02)	(0,08)	(0,07)
Total	5,92	10,04	18,82	13,32
Paid intrest (escomptes , discounts)		0,43	0,14	0,35
Intrest		2,15%	0,37%	1,31%
Average				1%

Appendix 9: Interest Rate for 2015 in Tunisia. (Source: Report of the central bank of Tunisia for 2015 Statistics):

Loan type	2013	2014	2015	Average Variation
Short-term loan	7,72%	8,28%	8,54%	
Variation of short-term IR		7,25%	3,14%	5,20%
Medium-term loan	8,16%	8,68%	9,04%	
Variation of medium-term IR		6,37%	4,15%	5,26%
Long-term loan	7,90%	8,65%	8,84%	
Variation of long-term loan IR		9,49%	2,20%	5,85%

Appendix 10: Interest rate for a publicly traded Tunisian industry (Source: Report of the central bank of Tunisia for 2015 Statistics):

7.2)- Emprunts émis par les entreprises

Industrie:								
Meublatex	07/08/2009	28/08/2009	7	10	10	5,4	2	Amortissement constant, avec 2 ans de franchise.Garanti par BH(1,5MD),BIAT (2MD), BTE (1MD), Attijari Bank (2MD), BNA (1MD), BTL (1MD) et ATB (1,5MD).
Meublatex Industries	02/04/2010	26/04/2010	7	10	10	5,4	4	Amortissement constant, avec 2 ans de franchise.Garanti par Amen Bank(3 MD), BT(3 MD), BTL (2MD), BH (1MD), et BNA (1MD).
CHO	28/10/2009	19/11/2009	10	7	7	TMM+1	4,375	Amortissement constant, avec 2 ans de franchise. Garanti par BIAT
CHO Company	10/12/2009	31/12/2009	10	3	3	TMM+1	1,875	Amortissement constant, avec 2 ans de franchise. Garanti par BIAT
ASSAD (*)	01/08/2014	18/09/2014	6	25	25	8,25	25	A défaut de conversion, les obligations seront remboursées le sixième anniversaire de la date de clôture de souscription.
Télécommunications								
Servicom	18/01/2013	04/04/2013	5	8	6,3 1,7	6,9 TMM+2,5	3,78 1,02	Amortissement constant. Notation "B" par Fitch Ratings.

Appendix 11: GDP Growth Forecast for Tunisia (Source: Trading economics web site)

GDP	Actual	Q1-16	Q2-16	Q3-16	Q4-16	2020
GDP growth rate	0,80	0,26	0,55	0,56	0,38	0,43
GDP annual growth rate	0,30	0,90	1,00	1,50	1,82	2,56

Appendix 12: Summary of Metrics of The Larger Peer Group for Enterprise Value Multiples :

Multiple	Minimum	Median	Maximum
EV/EBITDA	2,82	9,26	92,81
EV/Sales	0,22	0,86	2,81
EV/EBIT	4,44	8,58	13,33

Appendix 13: Precedent Transaction Comparables(Source:Thomson Reuters).

Target	Target nation	percentage of stake acquired	Aquirer	Ev (target)	Equity value	Total Assets (MM)	EV/Sales	EV/EBITDA	EV/EBIT
Seal Incorporated Bhd	Malaysia	100%	Seal Incorporated Bhd	38,78	49,97	91,00	1,78	24,71	28,01
Semapa SGPS sa	Portugal	23%	Semapa SGPS sa	6220,96	3169,78	8631,47	1,43	7,73	14,97
Miquel y Costas Y Miquel SA	Spain	3%	Miquel y Costas Y Miquel SA	10,82	42,03	814,69	1,93	8,63	13,81
Rougier SA	France	9%	Rougier SA	193,46	80,64	330,84	0,60	14,75	0,00
Rougier SA	France	28%	Rougier SA	167,24	115,53	36,11	0,56	7,67	26,75

Appendix 14: Balance Sheet for historical and projection period.

(in MTND)	2010	2011	2012	2013	2014	2015 E	2016f	2017f	2018f	2019f	2020f
Assets											
Cash and Short Term Investments	11,14	11,42	7,72	7,64	0,81	10,71	6,93	7,71	8,39	9,10	9,87
Cash & Equivalents	3,06	1,08	1,18	2,90	0,20	0,00	2,71	3,02	3,29	3,57	3,87
Short Term Investments	8,08	10,34	5,60	3,77	0,05	0,00	4,22	4,69	5,10	5,53	6,00
Accounts Receivable - Trade, Net	6,36	5,93	10,07	18,89	13,32	11,25	15,33	16,69	18,12	19,64	21,28
Accounts Recivables Trade, Gross	6,36	5,95	10,09	18,91	13,39	13,05	15,37	16,74	18,17	19,69	21,34
Provision for Doubtful Accounts	0,00	(0,02)	(0,02)	(0,02)	(0,07)	(0,06)	(0,04)	(0,05)	(0,05)	(0,05)	(0,06)
Total Inventory	16,26	15,70	16,31	11,83	20,64	21,92	22,17	24,14	26,21	28,40	30,78
net inventory	16,26	15,70	16,68	12,16	20,90	22,18	21,95	23,90	25,95	28,12	30,47
Raw material	9,30	9,66	9,20	2,71	11,92	8,70	11,30	12,31	13,37	14,48	15,70
Furniture and supplies	1,55	1,68	1,61	2,89	3,70	5,15	3,32	3,62	3,93	4,26	4,62
Imported kraft	0,00	0,00	0,00	2,29	1,24	2,60	1,12	1,22	1,33	1,44	1,56
Finished goods	5,41	4,37	5,86	4,28	3,01	7,00	6,32	6,88	7,47	8,09	8,77
Stock in transit	0,00	0,00	0,00	0,00	1,02	0,00	0,33	0,35	0,37	0,40	0,43
Provision for stock depreciation	0,00	0,00	(0,37)	(0,32)	(0,26)	(0,26)	(0,22)	(0,24)	(0,26)	(0,28)	(0,30)
Other Current Assets	1,39	0,67	1,85	0,45	1,97	4,75	2,22	2,43	2,64	2,86	3,10
Total Current Assets	35,15	33,72	35,95	38,81	36,74	48,62	46,65	50,96	55,35	60,00	65,02
Other Property/Plant/Equipment - Gross(Tangible assets)	43,58	42,81	43,81	47,11	50,40	61,15	64,92	69,03	71,71	74,61	77,75
Property/Plant/Equipment, Total - Net	4,78	2,10	2,31	4,42	5,67	15,35	17,23	19,32	19,91	20,63	21,51
Accumulated Depreciation, Total	(38,80)	(40,71)	(41,50)	(42,69)	(44,73)	(45,80)	(47,69)	(49,71)	(51,80)	(53,98)	(56,25)
Intangibles, Net	0,18	0,18	0,00	0,00	0,53	0,53	0,00	0,00	0,53	0,53	0,00
Intangibles - Gross	0,18	0,18	0,18	0,18	0,53	0,53	0,27	0,00	0,53	0,53	0,27
Intangible Amortization	0,00	0,00	(0,18)	(0,18)	0,00	0,00	(0,27)	(0,27)	0,00	0,00	(0,27)
Long Term Investments(Financial assets)	2,08	1,91	1,11	1,25	1,40	1,55	2,26	2,47	2,68	2,90	3,14
Participations		1,24	0,43	0,43	0,43	0,43	0,43	0,43	0,43	0,43	0,43
Total non-current assets	7,04	5,43	3,85	6,11	8,03	17,86	19,92	22,22	23,55	24,49	25,08
Deposits and guarantees	0,00	0,67	0,68	0,82	0,97	1,05	0,75	0,82	0,89	0,97	1,05
Total Assets	42,19	39,15	39,80	44,92	44,77	66,49	66,57	73,18	78,90	84,49	90,11
Liabilities											
Accounts Payable	5,44	2,87	3,83	4,91	7,84	6,24	9,74	10,61	11,52	12,48	13,53
Overdraft	0,00	0,00	0,00	0,00		3,36	2,25	0,40	0,97	0,33	1,97
Short term debt	2,03	1,41	0,55	1,01	0,49	1,02	3,02	3,33	3,52	4,13	4,82
Overdraft&short term debt	2,03	1,41	0,55	1,01	0,49	5,48	5,27	3,73	4,49	3,21	6,91
Other Current liabilities	0,41	1,54	1,86	2,55	2,37	2,70	3,08	3,51	4,00	4,56	5,20
Current portion of long term debt	0,00	0,00	0,00	0,00		3,56	3,55	3,55	3,17	4,17	1,00
Total current liabilities/ liabilities	7,88	5,82	6,24	8,47	10,70	17,98	21,65	21,40	23,18	24,42	26,64
Long term debt						10,67	3,55	6,33	6,17	10,00	13,00
Total Liabilities	7,88	5,82	6,24	8,47	10,70	28,65	25,20	27,73	29,34	34,42	39,64
Shareholders Equity											
Common Stock, Total	18,50	19,70	21,70	23,95	26,11	26,11	29,00	32,20	35,80	35,80	35,80
Retained earning formula	14,75	12,87	11,37	12,26	7,78	11,60	12,27	13,15	13,65	14,17	14,57
Retained Earnings (Accumulated Deficit)	14,75	12,74	10,71	11,26	6,85	9,02					
Profit	7,56	7,35	8,48	8,80	3,73	11,15	10,64	11,98	11,49	12,35	12,84
Reserves	6,64	1,85	1,97	2,17	2,39	2,61	2,61	2,82	3,04	3,29	3,55
Dividend	(1,75)	(8,14)	(8,50)	(5,97)	(5,99)	(7,18)	(7,45)	(8,38)	(8,04)	(8,64)	(8,99)
Other Equity	1,06	0,76	0,49	0,24	0,17	0,13	0,10	0,10	0,10	0,10	0,10
Total Equity	34,31	33,33	33,56	36,45	34,06	37,84	41,37	45,45	49,55	50,07	50,47
Total Liabilities & Shareholders' Equity	42,19	39,15	39,80	44,92	44,76	66,48	66,57	73,18	78,90	84,49	90,10

Appendix 15: Income Statement for historical and projection period:

(in MTND)	2010	2011	2012	2013	2014	2015E	2016f	2017f	2018f	2019f	2020f
Revenue(total)	49,76	47,70	48,41	55,43	62,75	67,79	75,47	82,18	89,23	96,69	104,78
Kraft	30,29	34,37	33,03	37,82	43,88	48,40	52,88	57,58	62,52	67,75	73,41
TL	17,89	12,11	13,78	15,44	16,70	17,27	18,86	20,54	22,30	24,16	26,18
Energie	0,90	0,96	1,31	1,77	1,82	1,69	2,99	3,25	3,53	3,83	4,15
Other revenues	0,68	0,26	0,28	0,40	0,35	0,42	0,75	0,81	0,88	0,96	1,04
Cost of Revenue(COGS)	(32,51)	(30,91)	(30,73)	(36,34)	(48,71)	(46,78)	(50,57)	(55,06)	(59,78)	(64,79)	(70,21)
Raw material	(18,61)	(21,53)	(22,79)	(25,68)	(30,96)	(33,44)	(33,88)	(36,89)	(40,06)	(43,41)	(47,04)
Furntiture &chemicals	(3,41)	(2,37)	(2,73)	(3,65)	(5,39)	(4,17)	(5,06)	(5,51)	(5,98)	(6,48)	(7,02)
Energy &water	(8,40)	(6,77)	(6,70)	(7,71)	(10,05)	(9,94)	(11,12)	(12,11)	(13,15)	(14,25)	(15,45)
Stock change	(2,09)	(0,24)	1,50	0,70	(2,30)	0,76	(0,51)	(0,55)	(0,60)	(0,65)	(0,70)
Gross Profit	17,25	16,79	17,69	19,09	14,04	21,00	24,91	27,12	29,45	31,91	34,58
Selling/General/Admin. Expenses,	(1,45)	(2,85)	(3,43)	(3,84)	(4,02)	(3,15)	(4,53)	(4,93)	(5,35)	(5,80)	(6,29)
Depreciation/Amortization	(3,42)	(2,16)	(1,47)	(1,19)	(2,05)	(1,71)	(2,16)	(2,28)	(2,09)	(2,18)	(2,54)
Unusual Expense (Income)	(0,27)	(0,28)	(0,28)	(0,08)	(0,35)	0,00	(0,75)	(0,82)	(0,89)	(0,97)	(1,05)
Other Operating Expenses	(3,41)	(2,37)	(3,10)	(3,55)	(3,27)	0,00	(4,53)	(4,93)	(5,35)	(5,80)	(6,29)
Other Operating Expense	(3,41)	(2,37)	(2,73)	(3,51)	(3,31)	(1,58)	(4,53)	(4,93)	(5,35)	(5,80)	(6,29)
Other, Net	0,00	0,00	0,37	0,04	(0,04)	(0,04)					
Total Operating Expense	(40,79)	(38,29)	(38,36)	(44,87)	(58,05)	(53,18)	(61,78)	(67,20)	(72,58)	(78,57)	(85,32)
Operating profit	8,97	9,41	10,06	10,55	4,70	14,60	13,69	14,98	16,65	18,13	19,47
Interest Inc.(Exp.),Net-Non-Op., Total	(0,60)	(0,32)	(0,52)	(0,44)	(0,57)	(1,03)	(1,07)	(0,75)	(1,07)	(1,39)	(2,10)
Investment Income - Non-Operating	0,12	0,21	0,28	0,39	0,09	0,29	0,27	0,30	0,33	0,36	0,39
Extarordinary item	0,00	0,00	0,00	(0,17)	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Other ordinary income	0,27	0,31	0,29	0,25	0,35	0,07	0,41	0,45	0,50	0,54	0,58
Other ordianry expenses	0,00	(0,03)	0,00	0,00	0,00		(0,01)	(0,01)	(0,02)	(0,02)	(0,02)
Earning before taxes	8,76	9,61	10,10	10,58	4,57	13,93	13,30	14,97	16,41	17,64	18,34
Provision for Income Taxes	1,20	2,26	1,62	1,78	0,84	2,79	2,66	2,99	4,92	5,29	5,50
Net Income /lossAfter Taxes	7,56	7,35	8,48	8,80	3,73	11,15	10,64	11,98	11,49	12,35	12,84

Appendix 16: Cash Flow Statement for historical and projection period:

(in MTND)	2010	2011	2012	2013	2014	2015E	2016f	2017f	2018f	2019f	2020f
Cash Flow-Operating Activities											
Net Income/Starting Line	7,56	7,35	8,48	8,80	3,73	11,15	10,64	11,98	11,49	12,35	12,84
Depreciation and provison	3,35	2,12	1,16	1,15	1,98	1,06	1,83	2,04	2,12	2,20	2,57
Non-Cash Items/Unusual Items	0,20	(0,29)	(0,27)	(0,25)	(0,07)	(0,05)	(0,21)	(0,24)	(0,23)	(0,25)	(0,26)
Changes in Working Capital	(1,10)	0,27	(5,02)	(1,13)	(1,94)	(3,27)	2,57	(2,22)	(2,29)	(2,38)	(2,55)
Accounts Receivable updated	0,67	0,43	(4,14)	(8,82)	5,57	2,07	(4,08)	(1,36)	(1,43)	(1,52)	(1,64)
Inventories	(3,26)	0,56	(0,98)	4,52	(8,74)	(1,29)	0,24	(1,95)	(2,05)	(2,17)	(2,35)
Other assets	(0,97)	0,72	(1,18)	1,40	(1,52)	(2,78)	2,53	(0,21)	(0,21)	(0,22)	(0,24)
Accounts payables	2,46	(2,57)	0,96	1,08	2,93	(1,61)	3,51	0,87	0,91	0,96	1,04
Other liabilities		1,13	0,32	0,69	(0,18)	0,33	0,38	0,43	0,49	0,56	0,64
Cash from Operating Activities(CFO)	10,01	9,45	4,35	8,56	3,70	8,89	14,83	11,55	11,08	11,92	12,60
Cash Flow-Financing Activities											
Capital Expenditures/purchase of fixed asset	(1,02)	0,77	(1,01)	(3,30)	(3,28)	(10,75)	(3,77)	(4,11)	(2,68)	(2,90)	(3,14)
Disposal of assets	0,35	0,00	0,80	(0,14)	(0,15)	(0,50)	(0,04)	(0,04)	(0,03)	(0,03)	(0,03)
Sale/Maturity of Investment	0,06	(0,01)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Cash from Investing Activities(CFI)	(0,61)	0,77	(0,21)	(3,44)	(3,43)	(11,26)	(3,81)	(4,15)	(2,70)	(2,93)	(3,17)
Cash Flow-Financing Activities											
Cash Dividends Paid - Common	(1,75)	(8,14)	(8,50)	(5,97)	(5,99)	(7,18)	(7,45)	(8,38)	(8,04)	(8,64)	(8,99)
Issuance of debt	(0,20)	0,00	0,00	0,00	0,00	10,67	0,00	6,33	3,00	8,00	6,00
Payment of debt	(2,03)	(1,41)	(0,55)	(1,01)	(0,49)	(9,04)	0,00	0,00	(8,82)	(7,28)	(7,66)
Cash from Financing Activities(CFF)	(3,98)	(9,55)	(9,05)	(6,98)	(6,48)	(5,55)	(7,45)	(2,05)	(13,86)	(7,92)	(10,64)
Net Change in Cash	5,98	(9,06)	(15,77)	(8,57)	(13,36)	(10,37)	(7,14)	(0,98)	(0,86)	(6,58)	(7,27)
FCF	9,40	10,22	4,15	5,12	0,27	(2,37)	11,02	7,40	8,38	8,99	9,42
Net Cash - Beginning Balance	1,67	11,14	11,42	7,72	7,64	0,81	10,71	0,00	1,20	6,93	7,71
Net Cash - Ending Balance/free cash flow	7,65	2,08	(4,35)	(0,85)	(5,72)	(9,56)	3,57	(0,98)	0,34	0,35	0,43
Free cash flow to the firm FCFF	9,41	10,30	4,38	5,35	0,47	(1,65)	11,62	7,65	8,85	9,72	10,80
Free cash flow to the equity (FCFE)	7,37	8,81	3,60	4,11	(0,22)	(11,41)	11,02	7,40	(0,44)	1,71	1,76

Appendix 17: Price multiples ratios formuals :

$$\frac{P}{BV} = \frac{\text{MV per sahre}}{\text{Book value per share}}$$

$$\frac{P}{E} = \frac{\text{MV per share}}{\text{Earning per share}}$$

$$\frac{p}{\text{OCF per share}} = \frac{\text{Share price}}{\text{Opearitng cash flow per share}}$$ (The same formula is used for P/CF and replace the OCF by CF)

$$\frac{P}{D} = \frac{\text{Price per share}}{\text{Dividend per share}}$$

Appendix 18**:** Foreign Exchange Rates (TND).(Source Thomson Reuters)

MARKET INSTRUMENTS

Name	Last	Net Chng
Tunis 20 Index	2,295.46	+0.20
Money Market Rate	4.22	
2Yr Sovereign CDS	220.110	+0.010
5Yr Sovereign CDS	228.050	+0.050
10Yr Sovereign CDS	233.800	+0.080

FX RATES

FX Rates	Last Bid	Net Chng
USD/TND	2.0000	+0.0002
EUR/TND	2.2592	-0.0040
JPY/TND	17.9715	+0.0200
GBP/TND	2.9013	+0.0060
CAD/TND	1.5432	+0.0020
CHF/TND	20.6678	+0.0130
XAU/TND	2,507.75	-7.22

Appendix 19:KPMG relative valuation of Sotipapier stock price :

	Minmum	Median	Maximum
Entreprise value (EV)	67,167	97,525	115,575
EV as an avearge of 3 metrics	93,422		

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