Strategic Acquisition of a direct bank by an international banking group

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Dipl.–Ing. Josef El–Rayes, BSc.

Betreuer

Univ.–Prof. DDDr. Anton Burger

General Management MBA   Wien, am 14. Jänner 2015

I would like to dedicate this thesis to my loving wife.

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Dipl.–Ing. Josef El–Rayes, BSc.

Wien, am 14.Jänner 2015

Acknowledgements

Abstract

Financial services are a volatile industry. Since the financial crisis, the industry has been dominated by historically low interest rates – the main source of income for retail banks and ever increasing regulations.

Mergers & Acquisitions are an important strategic tool in order to gain competitive advantage inorganically – economies of scale, market share or access to new technology. Yet a major challenge in the acquisition of a company is the determination of a fair value. There is no objective price for a company but based on the expectation of synergies and future income as well as an assessment of the seller's current situation, each buyer is ready to pay a different price.

This Master's Thesis compares established valuation methodologies and their applicability on financial institutes. A case study evaluates strategic considerations and their outcomes for a banking merger.

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Research Question

Mergers & Acquisitions are an important strategic tool for gaining competitive advantage inorganically – economies of scale, market share, or access to new technology. A major challenge in the acquisition of a company is the determination of a fair value. There is no objective price for a company but based on the expectation of synergies and future income as well as an assessment of the current situation of the seller, each buyer is ready to pay a different price.

The increasing speed of digitalization has led to an increase in customer's demands to interact with their financial institutes on a number of levels. Banks without a strong digital platform are facing a competitive disadvantage which can only be overcome through expensive investments. A recent study of the management consulting firm A.T. Kearney identifies digitalization as a key success factor in retail banking [6]. The historically low long-term interest rates and growing regulations have put additional pressure on banks. In order to survive in the market place, especially retail banks who are engaged in a low margin business need to reduce their operating costs. Banks which do not own a sophisticated banking platform for online service then have to consider either to develop their own banking platform, or buy an off-the-shelf solution and customize it to their needs or acquire the needed capabilities inorganically. While the costs and benefits of employing a system integrator for developing and individual software solution or deploying and customizing an off-the-shelf product are pretty straightforward, the acquisition of a financial institution is a complex and sophisticated task.

The Masters Thesis will evaluate as research question the strategic acquisition of a direct bank from the point of view of an international banking group.

Methodology

The Master's Thesis examines motivations for M&A with an emphasis on the banking sector. The first chapter of the thesis outlines the specifics of financial institutes, types of banks and peculiarities of bank accountancy. This is followed by a systematic evaluation of methods for valuation, while considering the applicable aspects of implementation based on a study of respective literature regarding valuation theory.

Based on a literature research regarding technical reports surrounding the European retail banking market the author evaluates the current situation of retail banks. Within the above mentioned context the Master's Thesis applies the results to a case study focusing on the strategic acquisition of a direct bank by an international banking group.

As a result the Master's Thesis evaluates the acquisition from the banking group's point of view and compares the difference between the individual valuation methods.

Conclusion

Multi-Channel Strategy

This Master's Thesis evaluates the acquisition of an Austrian direct bank by a Swiss global banking group as a strategic measure for lowering operating costs and gaining access to more favorable financing on the Austrian capital market.

The target is a market leading direct bank in Austria with an established brand which has about 460,000 current and savings accounts. The acquisition gives the buyer access to the marketing capabilities and know-how in direct banking. By shifting the budget-conscious clients to the direct bank the banking group is able to thus reduce its costs relating to its retail services. Yet clients with a low technology affinity who prefer face-to-face contact with their financial advisory are still able to visit a banking office.

The case study finds that depending on a successful post-merger integration the banking group is able to decrease its cost/income ratio and improve its Economic Value Added.

Valuation

Over the course of this Master's Thesis the author evaluates, applies and compares established valuation methods. Discounted Cash Flow valuation relies on a forecast of the future cash flows which are discounted to result in a net present valuation of the company. Yet this

a method is a sophisticated tasks and requires thorough analysis of the company at hand, the market environment and its future development.

Relative valuation is a more pragmatic approach for deriving a market valuation in relation to comparable companies. While it is more straightforward in its application, relative valuation depends on the choice of the peer group and in case an entire market is over or undervalued, the valuation result is influenced accordingly.

Asset-based valuation is a method used to derive a company's value based on the company's net assets. The result of this valuation does not depend on a peer group and is much simpler in its application than the DCF method, but does not investigate to the company's future earnings and growth potential, making it more suitable for mature institutions [9].

Chapter 1

Introduction

1.1 Motivation

In recent years there have been many developments in the financial sector. If nothing else, the financial crisis led to increased competition and lower margins. Besides lowering barriers to enter a market, and changes in the competitive situation due to technological developments or market consolidation - there are many reasons for mergers & acquisitions (M&A) as a strategic instrument [37].

A major challenge in the acquisition of a company is the determination of the company's value as there are different methods for corporate valuation which lead to different results. There is no objective price for a company as it depends on the buyer and the seller's individual perspective [39].

Established valuation methods regularly face criticism as they are sensitive to the input parameters and even slight adjustments can lead to large discrepancies when it comes to results. As an example, in a recent article published in the Financial Times the author questions the accuracy of one of the most common valuation methods the price/earnings ratio method [34].

While there is a lot of literature on the valuation of industry companies, there is hardly any literature on the valuation of financial institutes. "In a bestselling book on the valuation of business firms written by consultants there is one chapter on bank valuation towards the end. It states: 'Valuing banks is conceptually difficult' [33]" [10].

1.2   Objectives of the Thesis

The basic objective is to examine how established valuation methods can be applied on financial institutes and what their respective strengths and weaknesses are. Other objectives are the research of current drivers within the banking market and the verification of the thesis that an acquisition of a direct bank can be a successful strategic measure in terms of improving the Economic Value Added of the buyer.

1.3   Research Methodology

The Master's Thesis will begin with an overview of the banking market (Chapter 2 "Foundations of the Banking System", on page 3). It will analyze the role of banks in the economy, distinguish different types of banks and review the European banking market.

In Chapter 3 ("Corporate Valuation in Context of Mergers & Acquisitions, on page 11 the thesis researches established valuation theories.

These theoretical chapters are then complimented by a case study. An international banking group and its current challenges are examined (Chapter 4, "Case Study - UBS Enters Direct Banking Market", on page 25). As a strategic measure to reduce the high cost/income ratio and improve the interest spread a direct bank is acquired.

In Chapter 5 ("Case Study - Seller Side", on page 29) the target institute is analyzed and compared against its national peer group. Subsequently the Master's Thesis applies a DCF valuation, a relative valuation and an asset-based valuation on the target institute and evaluates the impact of the merger on the future development of the banking group.

Chapter 6 ("Case Study - Valuation", on page 37) compares the above mentioned valuation frameworks and concludes the thesis.

The author will conduct a literature study on established valuation methodologies and market studies on the retail banking market in Europe. Subsequently the author will apply the derived information to a case study. The discussed valuation methods are then applied to examine the impact the acquisition of the direct bank would have on the banking group's future performance.

Chapter 2

Foundations of the Banking System

2.1 Role of Banks in the Economy
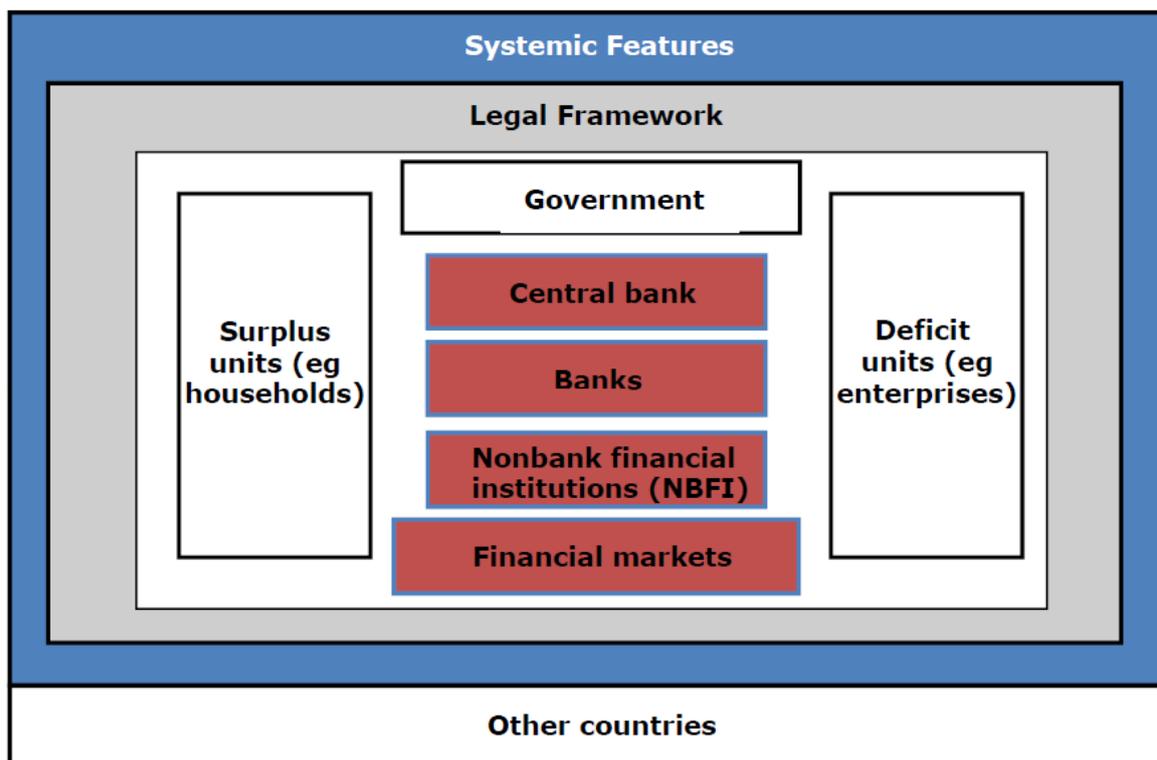
Fig. 2.1 Banks and other financial institutions act as intermediaries between economic surplus and deficit units [38]

Banks are a special type of company. While classic industrial companies create value by borrowing financial resources to finance their operation, banks mainly create value by acting

as an intermediary between borrowers (deficit units) and lenders (surplus units). Surplus units (typically households) have two possibilities within the financial system to finance deficit units (typically companies): they can buy securities (e.g. bonds or shares) via capital markets or invest their capital via intermediaries. Intermediaries provide financing to deficit units (as illustrated in figure 2.1) [10] and provide the following types of services [38]:

- *Size transformation:* Consolidation of small amounts of savings for financing large projects

- *Term transformation:* Consolidation of small amounts with short maturities (demand deposits) for financing long-term projects

- *Risk transformation:* Management of risk through diversification and conversion of risk into costs

- *Information provision:* Quantify the risk of investment (solvency, credit-worthiness)

2.2 Types of Banks

Banking activity	Lending	Payment services	Deposit taking	Securities market activities	services
Private or public, for profit or not (so) for profit	Universal banks (German-type / conglomerates)				
	Commercial banks			Investment banks	
	Finance companies	Narrow banks		Investment funds	
		Traditional postal banks			
	Savings Banks / Cooperatives and their 2nd tier institutions				

Fig. 2.2 Main types of banks segmented by activities [38]

2.2.1 Universal Banks

Universal banks are common in Europe and especially in Germany and Austria. They engage in all of the traditional banking activities. Examples for universal banks are Deutsche Bank of Germany, UBS of Switzerland or Unicredit Bank Austria.

2.2.2 Retail & Commercial Banks

These types of banks focus on consumer-oriented services for private individuals (retail banking) and companies (commercial or corporate banking). They offer services such as payment services (credit and debit cards), loans, deposits, savings accounts and operate automated teller machines (ATMs). Examples for such banks are HSBC and most of the direct banks [14].

2.2.3 Investment Banks

Such banks act as advisers in M&A and corporate restructurings, trading; support companies in going public (IPO) and issuing of securities. Major independent investment banks include Goldman Sachs and Morgan Stanley [27].

2.2.4 Savings Banks and Cooperatives

These are a special type of retail bank which are dominant in the German and Austrian banking markets. These banks focus on low-income individuals and usually do not offer other banking services [15]. Cooperative banks have a similar marketing strategy but differ to savings banks as they are owned by its members. These banks were usually founded by a local or professional community [20]. Examples for savings banks are the Austrian Sparkassen and for cooperative banks the Austrian Raiffeisenbanken.

2.2.5 Direct banks

Today most banks offer their customers online access to their services. This online access (also known as online banking) is a complementary service in addition to the high-street branch. The lower operating costs of online banking has led to the emergence of so called direct banks which focus on offering retail banking services online at lower fees or no fees

at all. Such banks can be merely a dedicated brand (e.g. Livebank.at) or a legally inde-
pendent subsidiary of a traditional retail bank (e.g. Bankdirekt.at). Some direct banks offer
their customers face-to-face meetings with customer representatives (e.g. ING-DiBa), while
others are strictly virtual.

In this thesis the author refers to such banks that offer their services via the internet,
telephone or fax as *direct banks*.

2.3   Peculiarities of a Bank's Balance Sheets

Fig. 2.3 Simplified balance sheet of a bank[10]

Balance sheets and income statements of banks differ substantially from those of industrial
companies. In Austria the Federal Banking Act - the *Bankwesengesetz* (BWG) regulates the
balance sheets of banks in Austria (see BWG §43-54a for details). Figure 2.3 illustrates the
general parts of a bank's balance sheet:

- *Assets:* Bank's assets mainly consist of financial claims against the above mentioned
  parties. The assets' side of the balance sheet lists the assets which typically consist of
  reserves with central banks, loans (retail, corporate, interbank and government) and
  fixed assets [10].

- *Liabilities:* Bank's liabilities are usually deposits of other financial institutions as well as private households and companies. The first part of the liabilities details customer deposits which are typically distinguished as retail, corporate, interbank and government deposits. The second part consists of the shareholder's equity.

A real-world example of a bank balance sheet can be found in Appendix A ("Bank Accounting", on page 59). The difference between the (lower) interest the bank pays for its liabilities and the (higher) interest the bank receives for its loans is the interest income (absolute value) and the interest spread (relative value) – the main source of income for a retail bank and a key performance indicator [29]. While demand and savings deposits are of undefined maturity the term deposits have a fixed maturity. Demand and savings deposits can be withdrawn any day. The undefined maturity makes it complicated to price the deposits and measure the interest rate and liquidity risk[1]. Therefore the interest rates are typically low in comparison to term deposits [10].

2.4 European Banking Market

Most countries in continental Europe have a bank-based financial system. In this type of financial system banks are the most important institution. A comparison between Europe and North America which has a capital market based system shows the difference in distribution of market value per segment. In Europe, banks are dominant while non-banking financial institutions (Insurers, specialist providers) and investment banks play a minor role. In North America the contrary features can be observed. Figure 2.4 illustrates the distribution of the types of financial institutions in North America and Europe[38].

Figure 2.5 details sources of long-term external financing of non-financial firms for Germany and the United States. In Germany more than 70 percent of long-term financing is performed through bank loans, while only around 10 percent of long-term loans come from non-bank financial institutions. Bonds and equity financing have a share of about 10 percent. In the US, which has a capital market based financial system, long-term bank loans have a share of about 10 percent. Long-term loans from non-banking financial institutions and bonds are the most important sources of long-term external financing.

Another characteristic feature of bank based systems is the role of the banks as so-called Hausbank (a local bank which puts emphasis on the relationship between the bank and its

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[1]Liquidity risk is the risk that (a company) or bank may be unable to meet short term financial demand [21]

Distribution of financial institution type in North America and Europe (1998-2002)
(Circle size: market value of segment)
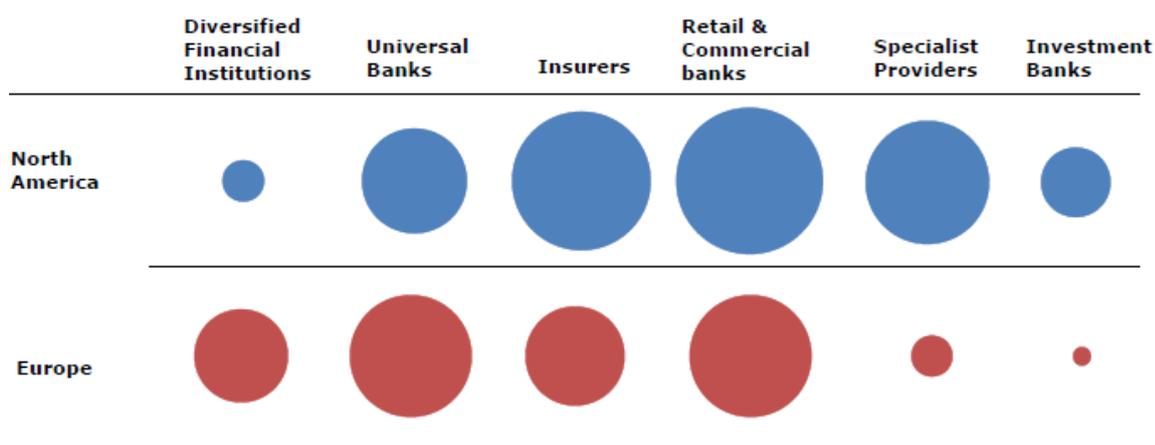
Source: Mercer Oliver Wyman (2003)

Fig. 2.4 Distribution of financial institution type in North America and Europe[38]

	70-74	75-79	80-84	85-89	90-94	95-00
Germany						
Long-term bank loans	76%	76%	79%	73%	76%	74%
Long-term loans from NBFI.	12%	12%	10%	10%	7%	8%
Bonds	7%	7%	5%	9%	9%	8%
Equity	6%	5%	5%	7%	8%	10%
USA						
Long-term bank loans	21%	21%	21%	19%	12%	13%
Long-term loans from NBFI.	42%	44%	45%	33%	30%	33%
Bonds	27%	29%	25%	41%	46%	35%
Equity	10%	6%	9%	6%	12%	18%

Fig. 2.5 Sources of long-term external financing of non-financial firms[38]

customers). The bank and its clients have a long-term business relationship. This long-term relationship enables the bank to have better insights into the business and a better understanding of the company's financial situation. Hausbanks sometimes also act as equity participants and join their client's supervisory boards [38].

Chapter 3

Corporate Valuation in Context of Mergers & Acquisitions

As outlined in Section 1.1 ("Motivation", on page 1) the determination of the value of a company is a sophisticated task. Established methods for valuing a company can generally be divided into two groups:

- Discounted Cash Flow Models which approximate a company's value based on the net present value of future free cash flows

- Relative valuation models which approximate a company's value based on a peer group of comparable transactions or companies.

A third model for valuing a company is asset-based valuation which approximates a company's value based on the book value and the future cash flows of its assets. Before taking a closer look at the individual valuation models the theoretic foundation is outlined in the following sections.

3.1 Cash Flow

Cash flow is a stream of revenue or expenses over a given period typically as a result of operations, investment or financing activities [25]. Statement of cash flows are a required component of an annual report and details how a company has generated and used cash during the reported period [32, p. 494]. Cash flow consists of the operational cash flow, the investment cash flow and financing cash flow.

3.1.1 Operational Cash Flow

Operating cash flow is generated from the daily business of the company and is an important indicator of the health of a company. A company which fails to create positive cash flows in general is futile from an economic point of view. Below the typical activities resulting in operational cash flows are listed [32]:

- Cash receipts from sales of goods and services

- Cash receipts from earnings on investments and securities (interest and dividends)

- Payments to suppliers

- Payments to employees

- Payments for interest

- Payments for taxes

3.1.2 Investment Cash Flow

This cash flow results from activities related to non-current assets for example the purchase of machinery, buildings and infrastructure. Investments in securities also affect the investment cash flow. Investments in non-current assets are important for a company to be able to perform the operating activities of its business and to remain competitive. Over a longer period of time a company should be at least investing the amount of depreciation into its operations.

A subset of the investment cash flow is the capital expenditure, abbreviated as CAPEX, which measures the cash flow invested to maintain capacity, in other words the cash flow from investing in activities without the investment in securities. When comparing the capital expenditures and the amortization of recent accounting periods, an impression of whether a company is expanding or contracting can be created [32, 39]. The following activities influence the investment cash flow [39]:

- Cash receipts from the sale of securities of other companies

- Cash receipts from sales of productive assets

- Payments for the purchase of securities of other companies

- Payments at the time of purchase for the acquisition of productive assets

3.1.3   Financing Cash Flow

Part of cash flow is related to financing activities such as borrowing money, repaying debt and paying dividends to shareholders [32]. The following activities influence the financing cash flow [39]:

- Proceeds from issuing capital stock or other equity securities

- Proceeds from issuing debt securities or obtaining loans

- Payments for reacquisition of capital stock or other equity securities of the entity

- Payments for the retirement of debt securities (excluding interest)

- Payments of principal on loans

- Payments of dividends

3.1.4   Free Cash Flow

Another important cash flow is the free cash flow. Free cash flow is calculated by subtracting the money invested to maintain capacity from the operating cash flow. It represents the amount of money available to expand a business and it is the basis for corporate valuation based on discounted cash flow models [32]. The literature[5] distinguishes between Free Cash Flow to the Firm and Free Cash Flow to Equity:

- *Free Cash Flow to the Firm* = Cash flow available to common stockholders + debt holders + Preferred stockholders

- *Free Cash Flow to Equity* = Cash flow available to common stockholders

3.2   Discounted Cash Flow Models

A favorite amongst practitioners in term's of a company's valuation is to use the discounted cash flow models (DCF model) [33]. Future income streams are forecast and discounted at

a certain interest rate representing the risk of the investment (e.g. at the cost of capital). The following formula illustrates how to calculate a firm's value:

$$\sum_{t=1}^{\infty} \frac{FCFF_t}{(1+WACC)^t} \tag{3.1}$$

The following steps are applied to value a company using the DCF model [33]:

1. Analyze the performance of recent periods

2. Forecast future cash flows

3. Estimate an appropriate terminal value

4. Discount the results at an appropriate discount rate

3.2.1 Example: Investment Valuation of an Oil Well

A simple example to illustrate the application of this model is the valuation of an investment in an oil well. After an initial investment of 1,000€ the oil well annually delivers crude oil worth €1,000. For simplicity's sake, the oil production is in a secure area and revenues are regarded as risk-free due to off-take agreements haven already been signed with customers. The current risk-free interest rate is set at five percent per annum. After three years the well is shut down without any further costs. To calculate the present value of the oil well the cash flows have to be discounted at the above mentioned risk-free interest rate (see Table 3.1 for details) [39].

$$DCF_{oilwell} = -1,000 + \frac{1,000}{1.05} + \frac{1,000}{1.05^2} + \frac{1,000}{1.05^3} = 1,723.25 \tag{3.2}$$

This simple example illustrates the basic steps that have to be applied for valuing a company using a DCF model. While the investment in the oil well ends after a defined period, the valuation of a company usually has an unlimited time frame. In terms of valuing financial institutions the Cash-Flow-To-Equity Valuation Model is the preferred framework[9, 33]. The formula for calculating the equity value is shown in equation 3.3 [5].

$$\sum_{t=1}^{\infty} \frac{FCFE_t}{(1+r)^t} \tag{3.3}$$

period	0	1	2	3
cash flow	€-1,000	€1,000	€1,000	€1,000
interest rate	5%	5%	5%	5%
discount factor	1	0.95	0.91	0.86
present value		€952.4	€907,03	€863,84
net present value	€1,723.25			

Table 3.1 Calculation of the net present value for the example investment [39]

EXHIBIT 6.1 **Frameworks for DCF-Based Valuation**

Model	Measure	Discount factor	Assessment
Enterprise discounted cash flow	Free cash flow	Weighted average cost of capital	Works best for projects, business units, and companies that manage their capital structure to a target level.
Discounted economic profit	Economic profit	Weighted average cost of capital	Explicitly highlights when a company creates value.
Adjusted present value	Free cash flow	Unlevered cost of equity	Highlights changing capital structure more easily than WACC-based models.
Capital cash flow	Capital cash flow	Unlevered cost of equity	Compresses free cash flow and the interest tax shield in one number, making it difficult to compare operating performance among companies and over time.
Equity cash flow	Cash flow to equity	Levered cost of equity	Difficult to implement correctly because capital structure is embedded within the cash flow. Best used when valuing financial institutions.

Fig. 3.1 Overview of frameworks for Discounted Cash Flow Valuation[33]

3.2.2   Cash-Flow-to-Equity Valuation Model

The Cash-Flow-to-Equity Valuation Model discounts the free cash flow to equity at the cost of equity (see Section 3.3 "Cost of Equity" on Page 16 for details). Table 3.2 details the steps to be performed to calculate the cash flows according to this model.

The historic performance is used as a starting point to forecast the company's development at a certain period in the future. As the buyer of the company is not planning to liquidate the company in the near future the continuing value needs to be calculated. The future cash flows to equity and the continuing value are then discounted at the cost of equity (as illustrated in figure 3.3). This results in the equity value of the company [33].

3.2.3   Continuing Value

The continuing value of a company is calculated using the formula below in an equity cash flow valuation:

$$V_e = \frac{NetIncome(1 - \frac{g}{ROE})}{k_e - g} \tag{3.4}$$

The continuous growth parameter g represents the factor at which the company is forecast to grow in perpetuity. ROE is the current return on equity, k_e is the cost of equity of the company [33].

3.3   Cost of Equity

The cost of equity is defined as "the return that stockholders require for a company."[26] and is used as a discount factor in discounted cash flow models for equity valuation. The most popular method (see figure 3.4) for estimating the cost of equity is using the Capital Asset Pricing Model (CAPM), a model describing the relationship between risk and expected return [24].

$$\bar{r}_a = r_f + \beta_a(\bar{r}_m - r_f) \tag{3.5}$$

The formula 3.5 consists of the risk-free rate r_f, beta of the security β_a and the expected market return $\bar{r}_m$ [24].

- *Risk-free rate:* The interest rate of a risk free investment

	Net income
+	noncash expenses (depr., amort.)
-	noncash investments ($\triangle$working cap., fix. assets & nonoper. assets)
+	increases debt & other nonequity claims
-	decreases debt & other nonequity claims
=	cash flow to equity

Table 3.2 Calculation of cash flow to equity [33]

EXHIBIT 6.16 **Home Depot: Equity Cash Flow Summary**

$ million

	Historical			Forecast		
	2006	**2007**	**2008**	**2009**	**2010**	**2011**
Net income	5,761	4,395	2,260	2,183	2,477	2,947
Depreciation	1,645	1,693	1,785	1,639	1,685	1,778
Amortization	117	9	–	–	–	–
Gross cash flow	7,523	6,097	4,045	3,822	4,162	4,725
Change in operating working capital	(936)	1,066	–	292	(73)	(163)
Decrease (increase) in net long-term operating assets	(7,006)	4,152	(740)	329	(2,300)	(3,040)
Decrease (increase) in nonoperating assets	5	(324)	306	–	–	–
Decrease (increase) in net deferred tax liabilities	122	(715)	(284)	226	3	6
Increase (decrease) in short-term debt	(1,395)	2,029	(280)	75	107	107
Increase (decrease) in long-term debt	8,971	(260)	(1,716)	411	588	583
Cash flow to equity	7,284	12,045	1,331	5,155	2,486	2,218
Reconciliation of cash flow to equity						
Dividends	1,395	1,709	1,521	1,436	1,629	1,939
Share repurchases (net of stock issued)	5,889	10,336	(190)	3,719	856	279
Cash flow to equity	7,284	12,045	1,331	5,155	2,486	2,218

Fig. 3.2 Example for an equity cash flow valuation [33]

EXHIBIT 6.17 **Home Depot: Cash-Flow-to-Equity Valuation**

Forecast year	Cash flow to equity[1] ($ million)	Discount factor (@ 10.4%)	Present value of CFE ($ million)
2009	5,044	0.906	4,569
2010	2,486	0.821	2,040
2011	2,218	0.743	1,649
2012	2,498	0.673	1,682
2013	2,952	0.610	1,800
2014	3,145	0.552	1,738
2015	3,349	0.500	1,676
2016	3,556	0.453	1,612
2017	3,764	0.411	1,546
2018	3,974	0.372	1,478
Continuing value	63,569	0.372	23,646
Present value of cash flow to equity			43,436
Midyear adjustment amount			2,597
Equity value			46,032

[1] Cash flow to equity in 2009 excludes $111 million change in nonoperating deferred tax liabilities, as their value is incorporated elsewhere.

Fig. 3.3 Example for an equity cash flow valuation (continued) [33]
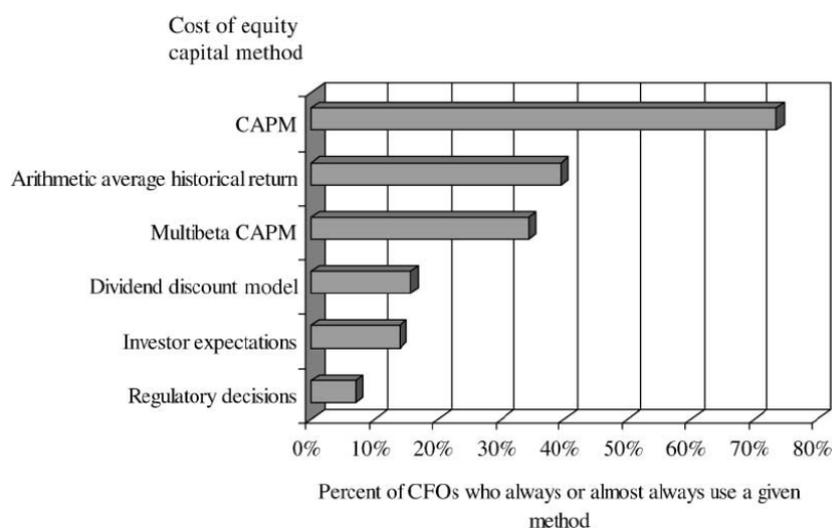
Fig. 3.4 Survey of cost of equity capital methods [17]

- *Market risk premium:* "The difference between the expected return on a market port-
  folio and the risk-free rate."[28]

- *Beta factor:* "A measure of the volatility, or systematic risk, of a security or a portfolio
  in comparison to the market as whole."[23]

3.3.1   Risk-free Rate

The interest rate of a risk-free investment is usually determined by benchmarking govern-
mental bonds with the highest ratings which are regarded to be essentially risk-free. Accord-
ing to the Cost of Capital study by KPMG, a global accounting firm, the surveyed companies
use the government bonds' interest rates with a term between ten to thirty years in order to
determine the risk-free rate. The average risk-free rate used by the surveyed companies (in
Austria, Germany and Switzerland) was at 2.3 percent in 2012/2013 [4].

3.3.2   Market Risk Premium

The market risk premium is defined as "'the difference between the expected return on a
market portfolio and the risk-free rate."' The average market risk premium applied by the
surveyed companies of the Cost of Capital study was 6.0 percent for Austria, 6.0 percent for
Germany, 5.0 percent for Switzerland in 2012/2013 [4].

3.3.3   Beta

While the definition of risk-free rate and the market risk premium are straight forward the
theory behind the beta factor is more sophisticated. "It expresses the degree to which the
company-specific risk is comparable to the risk of the market portfolio". For most publicly
traded companies a beta factor is published by information services, as e.g. Yahoo Finance
or the website of the corresponding stock exchange, e.g. Vienna Stock Exchange. KPMG
recommends to derive the beta factor from a peer group [4]. When comparing beta factors
it is important to consider the operating risk (equity/debt ratio, also known as leverage).
Therefore the beta factors have to be un-levered to result in an un-levered beta which is then
relevered to the company's target capital structure (equity/debt ratio) [33].
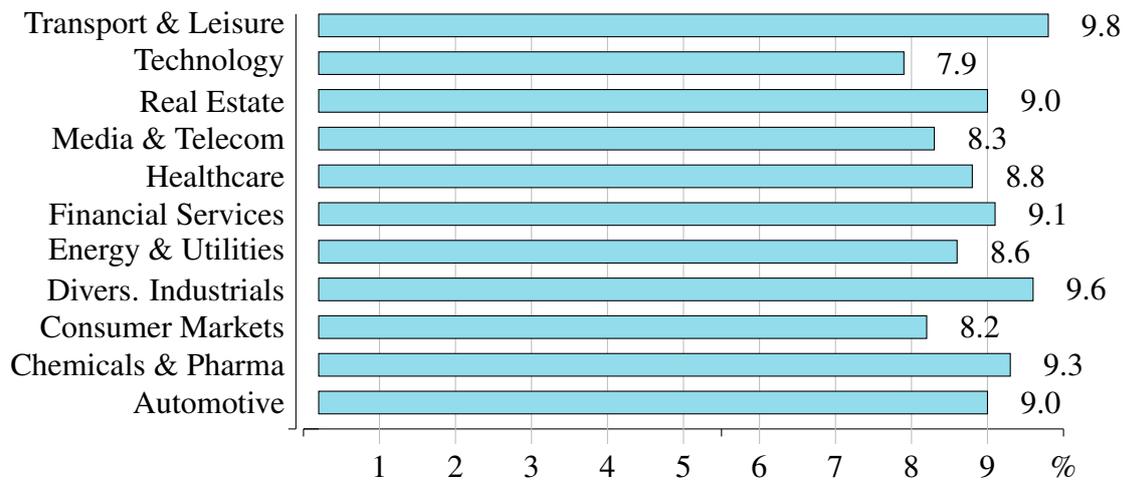
Fig. 3.5 Overview of the average cost of equity by industry [4]

3.4   Relative Valuation (Multiples)

Another valuation approach besides discounting cash flows is relative valuation using multiples. Multiples represent relative valuation factors of comparable companies (peer firm multiples) or previous, comparable transactions (precedent transaction multiples).

The determination of an applicable peer group is the most important step in multiples valuation. [11] concludes that the peer group should consist of firms with the same risk and cash flow profile. In addition [33] recommends that the peers should have similar outlooks for long-term growth and return on invested capital (ROIC). To value a company using multiples the following steps have to be applied [11]:

1. Identify a comparable peer group (e.g. based on size, business model and industry)

2. Use an indicator (e.g. EBITDA) that correlates with the value (e.g. Enterprise value) among firms in the peer group

3. Calculate the ratio (e.g. $M_i = EV_i/EBITDA_i$) for all companies c in the peer group

4. Determine the median or average of M_i

5. Apply the calculated ratio to the firm to estimate its value (e.g. $V = M_i * EBITDA$)

Financial institutes can be valued using the price/earnings (P/E) ratio or the market/book value (MBV) ratio. The P/E ratio is the ratio of the stock price to the earnings per share.

Based on the P/E ratio of comparable banks and the forecasted earnings per share of the bank to be valued, the value of shares of the bank can be calculated as illustrated in the following 3.6 formula:

$$\text{Value of shares}_{bank} = \text{P/E}_{comparables} \times \text{forecasted EPS}_{bank} \qquad (3.6)$$

The MBV ratio represents the ratio of the market value of shares to the book value of equity. Formular 3.7 outlines how the value of equity can be derived from the market/book value.

$$\text{Value of equity}_{bank} = \text{MBV}_{comparables} \times \text{book value of equity}_{bank} \qquad (3.7)$$

Table 3.6 illustrates the market/book value ratio and price/earnings ratio for large, international banks [10]. Multiples should be used to triangulate the results of DCF valuation [33].

TABLE 5.1

Market/Book Value Ratio and Price/Earnings Ratio, April 29, 2008

Bank	MBV (P/E)
United Kingdom	
Barclays	1.32 (6.9)
Lloyds-TSB	2.06 (8.5)
Royal Bank of Scotland	0.66 (6.7)
Standard Chartered Bank	2.42 (15.1)
United States	
Merrill Lynch	1.87 (31.7)
Citigroup	1.25 (42.3)
Goldman Sachs	1.84 (11.5)
Germany and Switzerland	
Deutsche Bank	1.04 (8.92)
Crédit Suisse	1.33 (10.28)
UBS	1.99 (—)
Brazil and Russia	
Banco Itau	3.63 (12.2)
Rosbank	5.58 (10.6)

Source: Thomson ONE Banker Analytics.

Fig. 3.6 Overview of MBV and PE ratios of large, international banks [10]

3.5   Asset-Based Valuation

In asset-based valuations, the market value of assets minus the debt results in the value of equity. [9] suggests valuing the asset portfolio based on the expected cash flows as detailed in equation 3.8.

$$\text{Value}_{loans} = \text{interest income}(\text{PV of annuity}, m, i) + \frac{loans}{1 + i^m} \qquad (3.8)$$

The asset value represents the shareholder value + hidden reserves and should be the lower limit of a company's value [1].

3.6   Synergies

One of the main motivations behind M&A from a strategic point of view are the anticipated synergies of the combined firm so that the result of the combined firm is a positive *net acquisition value*:

$$NAV = V_{AB} - [V_A + V_B] - P - E \qquad (3.9)$$

where

- V_{AB} =the combined value of the two firms

- V_B =the value of B

- V_A =the value of A

- P = premium paid for B

- E = expenses of the acquisition process

The effect of synergies must be higher than the premium and the expenses paid for the acquisition. The main type of synergies in the context of M&A are operating synergies and financial synergies [16].

Industry	Value
Healthcare	9.9
Finance	8.6
Chemicals	8.0
Mining	7.3
Construction	5.6
Service	4.9
Telecom	4.4
Transportation	3.9
Retail	3.0
Automotive	2.9
Utilities	2.5
Oil	2.4
Wholesale	2.0
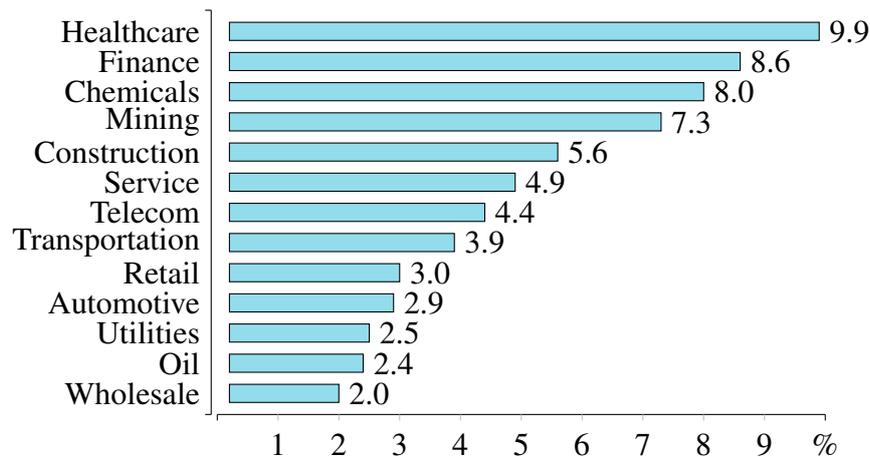
Fig. 3.7 Median announced synergy per industry (target sales) [31]

3.6.1 Operating Synergies

Operating synergies are the result of revenue enhancements or cost reductions. Revenue enhancements are achieved by a superior marketing capability of the combined firm. [16] lists various potential sources of revenue enhancements which are highly dependent on the individual deal: cross-marketing between the two firms, improved brand reputation, and leverage of a stronger distribution network or supply chain.

Cost reductions are the result of economies of scale - lower per unit costs due to the larger size of the company's operation. Additionally there might be an overlap in capabilities of the combined company, e.g. one company's IT department is able to service the combined IT demand of both companies. As a result "this enables the acquiring company to purchase the target's revenues with less than the target's historic cost structure " [16].

A recent study by the management consulting firm Boston Consulting Group and Technische Universität München provides empirical data on value creation of mergers & acquisitions among public companies. Most acquirers aim to create value through cost synergies. The study concludes that sellers are able to anticipate the buyer's synergies and demand corresponding premiums. On average sellers receive about a third of the average value of the expected synergies.

Figure 3.7 illustrates the announced synergy as per cent of the target sales for a sample of 365 deals with transaction values of more than $300 million between 2000 and 2011 [31].

3.6.2 Financial Synergies

This term refers to the influence of a merger on the cost of capital of the buyer or the combined firm [16]. Tax benefits, higher debt capacity and excess cash are examples for such synergies [7].

3.7 Sensitivity Analysis

A drawback of all valuation model is that they are very sensitive to changes when it comes to the input factors. Even slight variations can lead to large differences in the results. It is therefore helpful to perform a sensitivity analysis to gain further understanding on the bandwidth of variations. For example, the development of the loan growth (especially for the continuous value) and the interest spread have a strong influence on the equity value of the company when performing a DCF valuation.

Chapter 4

Case Study - UBS Enters Direct Banking Market

4.1 Overview

Coming back to the research question the author evaluates the effects of the strategic acquisition of a direct bank by an international banking group. In the following chapters the author applies the theoretic methods detailed in Chapter 3, Corporate Valuation in Context of Mergers & Acquisitions, in the following hypothetical case study.

4.2 Current Challenges in Retail Banking

A recent study by management consulting firm Bain & Company analyzes the latest development of the European banking market. The current economic environment is putting pressure on interest and fee income. As a result, cost management is a main challenge for European retail banks. Measures to reduce include investment into new technologies, modernization of the existing IT infrastructure and optimization of process performance through outsourcing and off-shoring [2].

The Boston Consulting Group confirms in a similar study, operational performance as a main challenge for retail banks. In a case study it illustrates how a bank was able to achieve a cost/income ratio below 45 percent by streamlining its organization and improving process efficiency. The bank's core IT platform supports the standardization and industrialization of processes [12].

4.3 Analysis of UBS

4.3.1 Performance

The UBS AG is a Swiss universal bank active in more than 50 countries with about 60,000 employees. According to its annual report, the bank is the world's largest wealth manager, Swiss market leader in retail banking and one of the world's largest investment banks [40].

Table 4.1 details the key performance indicators of UBS. Judging from the numbers 2013 was a successful year in comparison to a difficult year in 2012. The return on equity increased from -5.1 percent to 6.77 percent. Similarly to many European banks [18], UBS is hardly creating any economic value (assuming a cost of equity of 6.10 percent[2]). The cost/income ratio was reduced by almost 20 percent between 2012 and 2013, but remains at a very high level (106.97 percent versus 88.20 percent[3]) in comparison with a peer group of seven large European banks[4] [40].

4.3.2 Market situation Swiss Retail Banking

UBS leads the Swiss market in the market segment of retail and corporate banking. According to its annual report [40], UBS serves one in three Swiss households. About 13.5 percent of UBS's revenue and more than 50 percent of the bank's operating profit come from retail & corporate banking. An increase in regulations leads to higher costs, lower customer loyalty and continuous low interest margins lead to lower income in retail banking [30]. A market study [19] of Swiss retail banking by the management consulting firm Accenture predicts a strong growth of market share for online and direct banks and a decline in market share for large banks (as UBS and Credit Suisse) and private banks until 2015.

4.4 Description of scenario

The bank's strategy underlines the importance of technology for service delivery and strives to further expand its multi-channel offering: "(...) continue to build on our long tradition as a leader and innovator in digital services to deliver superior client experience, capture

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[2]calculation based on CAPM, see attached digital medium

[3]calculated, see attached digital medium

[4]Peer group consists of Barclays, Credite Agricole, Credite Suisse, Commerzbank, Deutsche Bank, Royal Bank of Scotland, Unicredit Group

market share and increase efficiency [40]." Due to the above mentioned market trends and persisting pressure on operating costs the author assumes for the scenario that the UBS board decides to further shift its focus in retail banking to direct banking. Currently UBS offers online access for retail clients but does not have a stand-alone product which is direct banking only. The plan is to create a pure breed directing banking product with an aggressive pricing strategy under the umbrella of a new brand. A separate brand will be established to avoid dilution of UBS' premium brand image. In Switzerland there is currently no direct bank with a significant market share. Hence UBS decides to acquire an established direct bank for the following reasons:

- Faster time to market

- Leverage marketing knowledge

- Existing brand name

- Mature technology platform

- More favorable financing via Austrian capital market

4.5   Possible Targets

Table B.1 in Annex B ("Case Study", on page 64) contains a list of all pure direct banks in Austria and Germany. There is currently no pure play direct bank in Switzerland. UBS is looking for a pure direct bank from a German speaking country which is legally independent from a mother company and not just a retail brand. Additionally the direct bank should have no branches but serve its customers only via the internet, phone or fax. This reduces the list to a shortlist illustrated in 4.2.

The ideal candidate is a medium-sized direct bank with about 100 to 200 employees. Of the shortlisted ones, three banks are medium sized with regards to the number of employees: Direktanlage.at, Easybank and SKG Bank. Due to recent positive publicity ("Best direct bank" according to a national consumer study [35]) and the clear ownership structure (100% BAWAG P.S.K.[6]) Easybank is the first choice for further considerations.

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[5]based on number of employees
[6]as published on the bank's website

Performance	2013	2012
Return on Equity (RoE) (%)	6.7	(5.1)
Cost of Equity (CoE) (%)	6.10	-
Cost / Income ratio (%)	88.0	106.9
CET 1 capital ratio (%)	12.8	9.8
Market capitalization (€m[1])	53882	45363

Table 4.1 UBS key performance indicators[40]

Name	Size[5]
bankdirekt.at	-
direktanlage.at	=
easybank	=
comdirect bank	+
Cortal Consors	+
DAB Bank	+
Deutsche Kreditbank	+
ING DiBa	+
Netbank	-
SKG Bank	=
Umweltbank	-

Table 4.2 Short list of potential targets

Chapter 5

Case Study - Seller Side

5.1 Background

Easybank AG was founded in 1996 and is a 100 percent subsidiary of BAWAG P.S.K. It is a direct bank focusing on the Austrian market. It is as a full service bank offering current and savings accounts, securities, financing, credit cards and personal investment products[13].

Easybank is planning to further increase its customer base while preserving positive profits at the same time. Although the market for saving services has suffered under the long-term low interest rates, Easybank has strived to be regarded by its customers as the main bank. Currently many clients see direct banks as a good provider for free current accounts, yet they still buy other products and value-added services via their local branch-*Hausbank*.

The bank wants to continue offering new technical innovations in the area of electronic banking and mobile banking to further strengthen its positive technological image. Furthermore, it is also considering expanding its business to outside of Austria but has not yet decided when the best time would be [13].

BAWAG P.S.K. is the result of a merger between the former BAWAG and P.S.K. (Postsparkasse) in 2005. BAWAG was founded in 1922 as "Arbeiterbank" (Labour bank) to finance the trade unions and the socialist cooperatives. In 1963 it was renamed to Bank für Arbeit und Wirtschaft (BAWAG) and positioned itself as a retail bank for workers. It was also the bank of the trade unions, the influential Austrian Trade Union Federation being the main shareholder.

P.S.K. was founded as "Postsparcassen" in 1882 enabling post offices to offer cashless

payments. After Second World War the Austrian Postsparkasse was re-established as part of the Austrian Federal Ministry of Finance. The P.S.K. cooperated with the Austrian Post offering retail services in the post offices.

In 2000 BAWAG acquired 75 percent of P.S.K. shares making it the majority owner and the third largest banking group in Austria. In 2005 the two banks were formally merged into BAWAG P.S.K.[1]. Since 2007 the bank has been owned by Cerberus Capital Management, an American private equity firm [3].

5.2 Quantitative Performance 2010-2013

Easybank's performance over the last few years is analyzed based on publicy available information. Figure 5.1 illustrates Easybank's income statement in 2013:

- Interest income in 2013 was 47.188 million Euros.

- The bank spent 26.161 million Euros on interest and similar expenses resulting in a net interest income of 21.027 million Euros.

- The bank earned 7.154 million Euros through fees and other operating income resulting in an operating income of 28.181 million Euros.

- In terms of staff costs and other administrative expenses, the bank spent 14.597 million Euros in 2013 leading to an operating result of 13.584 million and a cost/income ratio of 52 percent.

- After subtracting impairment provisions, taxes and changes in reserves, this has resulted in a profit of about 10 million Euros in 2014.

In figure 5.1 the blue bars indicate total amounts, the green bars indicate income, and the red bars indicate expenses. The arrow indicates the cost/income ratio for 2013 according to the data of the income statement[13].

5.2.1 Cost/Income Ratio

The cost/income ratio puts the operating expenses in relation to the operating income, it illustrates how many cents of operating expenses are spent on every euro of operating in-

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[1]According to the institutes official website
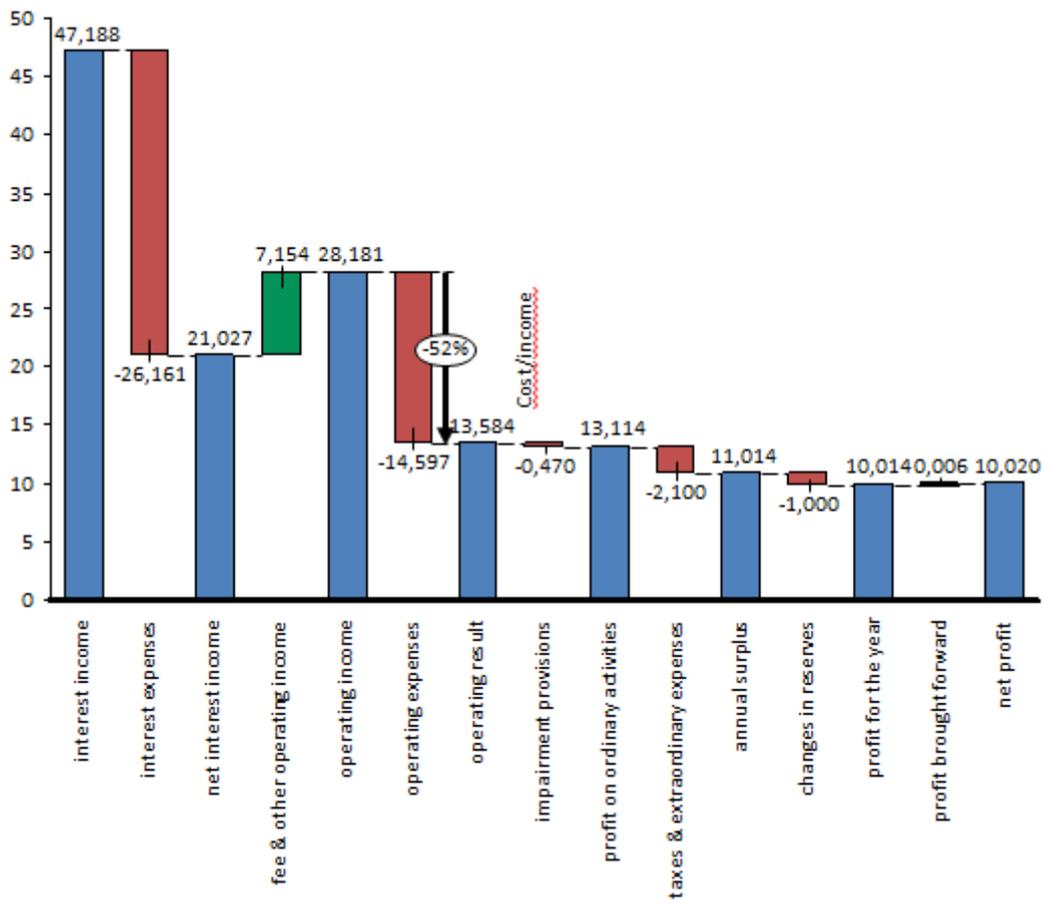
Fig. 5.1 Income breakdown of Easybank in 2013 [13]

come. Operating expenses consist of personnel expenditures and material costs which are almost of equal share at Easybank.

In the period under consideration the cost/income ratio declined from about 59 percent to to about 52 percent. This excellent cost performance is typical for direct banks. The reason behind the low ratio is explained by consistent focus on core competency while back office tasks like risk management, internal audit, compliance and support services are fulfilled by the banking group[13]. The author assumes that Easybank is also using considerable parts of the IT infrastructure (Core Banking) of BAWAG P.S.K. and is restricting itself to the customer-faced part of the infrastructure (banking platform, mobile banking applications), marketing and management of the direct bank.

Period	2010	2011	2012	2013
Cost/Income	59.05%	59.82%	57.86%	51.76%
Operating income (€m)	19.068	20.888	22.112	28.181
Operating expenses (€m)	(11.260)	(12.495)	(12.795)	(14.597)

Table 5.1 Cost/Income ratio 2010-2013 Easybank [13]

5.2.2   Return on Equity

Easybank achieved a significant return on equity in the last few years. Between 2010 and 2013 the return on equity[2] was between 19 to 22 percent.

Period	2010	2011	2012	2013
Equity (mio €)	32.522	34.401	36.914	51.676
Net Income (mio €)	6.339	6.884	8.257	10.022
Return on Equity	19.49%	19.89%	22.37%	19.39%

Table 5.2 Return on Equity 2010-2013 of Easybank [13]

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[2]calculated based on the total book value of equity

5.2.3   Economic Value Added

A performance indicator related to return on equity is Economic Value Added (EVA). It measures the surplus value created on an investment. With regards to equity valuation the focus lies on the equity, therefore the formula for calculating the EVA is

$$EVA = (r_e - k_e) * equity \qquad (5.1)$$

A firm with positive EVA is creating value, while a firm with negative EVA is destroying value [8]. Easybank has seen a strong growth of EVA in recent years as the return on equity as well as the employed equity has grown. Assuming a cost of equity of 7.90 percent[3] the EVA has grown from €3.770 m to €5.940 m.

Period	2010	2011	2012	2013
Equity (mio €)	32.522	34.401	36.914	51.676
Return on Equity	19.49%	19.89%	22.37%	19.39%
EVA (mio €)	3.770	4.126	5.431	5.940

Table 5.3 Economic Value Added 2010-2013 of Easybank [13]

5.2.4   Loan Growth

	2010	2011	2012	2013
Loan growth		7.05%	18.07%	19.61%
Loans (€m)	1,683.2	1,810.9	2,210.3	2,749.7

Table 5.4 Loan growth year-on-year 2010-2013 Easybank [13]

As a retail bank the revenue from loans is an important performance indicator, which is comparative to the sales revenues of an industrial company. From 2010-2011 Easybank's loans grew by 7.1 percent, between 2011 and 2013 the loans grew annually at about 19 percent.

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[3]calculation based on CAPM – see attached digital medium

Currently the bank has outstanding loans at a volume of 2,749.7 million Euros of which 2,606 million Euros are non-current loans to credit institutes. The reason behind the high amount of loans to credit institution is that almost the same amount of deposits by retail clients are loaned to the BAWAG group's credit institutions [13, p. 60]. This behavior suggests that the group is utilizing Easybank primarily to collect liquidity.

5.2.5   Interest Spread

The interest spread is another important indicator for the profitability of a retail bank. Over the past years the interest spread was between 0.72 percent and 0.85 which makes it very hard for the bank to earn money on interest. This suggests that the group is using the liquidity of Easybank to make higher profits with value added services.

Period	2010	2011	2012	2013
Interest spread	0.85%	0.85%	0.72%	0.76%
Interest rate on loans	2.22%	2.35%	2.04%	1.72%
Interest rate on deposits	1.37%	1.50%	1.31%	0.96%
Interest income (€m)	37.31	42.51	45.07	47.19
Interest expense (€m)	(23.89)	(27.72)	(29.26)	(26.16)

Table 5.5 Interest spread 2010-2013 of Easybank [13]

5.3   Peer Group

In the Austrian retail banking market a significant number of banks is currently competing for the market segment of direct banking clients. Generally, these can be grouped into two categories:

- *Banking subsidiaries:* These are dedicated direct banking subsidiaries or brands of universal banks or retail banks. Examples for these types of direct banks are Bankdirekt AG (a subsidiary of Raiffeisen Landesbank Oberösterreich), ING-DiBA Direktbank Austria (which is a subsidiary of ING Group), Livebank (a subsidiary of Österreichische Volksbanken AG), and Direktanlage.at (a subsidiary of DAB Bank).

- *Automotive companies:* A couple of large car manufacturers and car dealers offer financial services to their customers. Moreover, recently they have also began offering saving accounts for direct banking clients. Examples for this type of direct banks in Austria are Autobank AG, Denzelbank AG, Porsche Bank and Renault Bank Österreich.

Figure 5.2 indicates the performance of a peer group of direct banks of both types. The y-axis represents the cost/income ratio (the lower the better), while the x-axis represents the return on equity (the higher the better). The size of the bubbles represents the total volume of loans. All institutes below the horizontal line have a lower cost/income ratio than the median institute (about 88 percent) and are therefore regarded as efficient. The institutes on the right side of the vertical line have a higher return on equity than the estimated cost of equity (about seven percent). These institutes are regarded as value creators. The institutes in the lower right quadrant are creating value and are efficient operations. All information is based on publicly available annual reports.
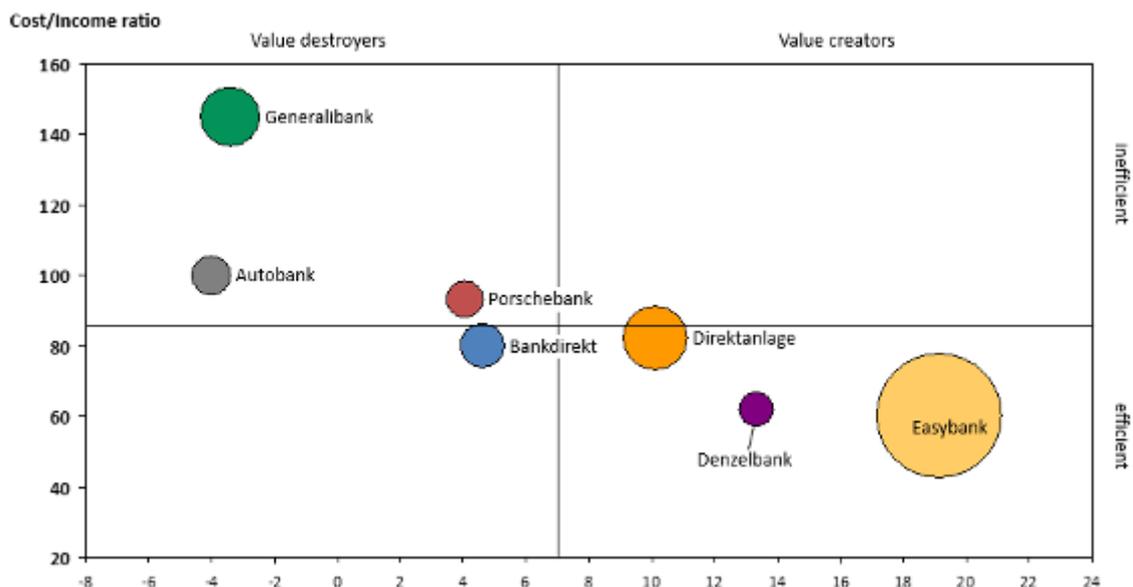
Fig. 5.2 Performance of Austrian direct banks

Chapter 6

Case Study - Valuation

In the previous chapters the author evaluated the buyer (see Chapter 4) and the seller (see Chapter 5) as standalone companies. In this chapter the author will focus on the anticipated future performance of Easybank as part of UBS (the combined firm is named *UBS Group* or *Group*). Using the hypothetical scenario outlined in section 4.4 ("Description of scenario", on page 26) the author applies the theoretic methods outlined in Chapter 3 ("Corporate Valuation in Context of Mergers & Acquisitions", on page 11).

6.1 Assumptions for Future Development

6.1.1 Macro economic influences

The European economy is currently slowly growing after a stagnation period in the first half of 2013. In the second part of 2013 aggregate demand grew for the first time since one and a half years.

However the loan business in Austria had a better year than the Eurozone but was still at a very weak level. On annual average the loan volume was 0.7 percent lower than in 2012 (Euro zone: -2.5 percent). Consumer loans declined while mortgages (Wohnbaukredite) profited from the low interest rates. Demand was stable throughout the whole year and gained momentum in autumn[13].
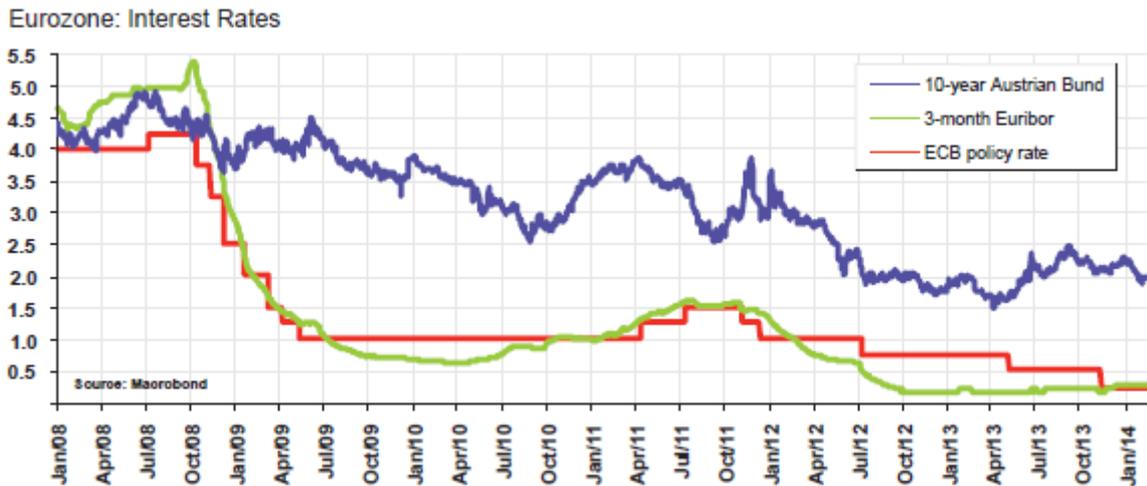
Fig. 6.1 Interest rates in the eurozone[13]

Development of Interest & Exchange rates

During 2013 the European Central Bank had to lower its policy rate twice. Risk premiums of government bonds declined and at the end of the year a couple of European countries saw their ratings upgraded. A rise in confidence resulted in an improved liquidity in the financial sector. The Euro was able to appreciate substantially against other currencies: 4.5 percent against the US dollar, 2 percent against the British pound and 1.7 percent against the Swiss Franks [13].

Outlook

The outlook for the fiscal year 2014 is more optimistic from a macroeconomic point of view. The Eurozone is expected to grow faster than in 2013. After a slow growth in 2013 of 0.3 percent Austria's GDP is expected to grow 1.6 percent in 2014. Domestic demand is expected to be one of the main drivers. Companies are again investing and private consumption will increase despite the difficult employment situation.

The situation in terms of interest rates will not improve much. The continuous expansive monetary policy of the European Central Bank will keep the interest rates on a very low level [13]. External factors, such as the macroeconomic environment and market development, influence the future development of a company. To get a clearer picture on how these factors influence a company and its value in detail, it is important to understand what factors drive the value creation of a retail bank.

As detailed in chapter 2.2.2 (Retail & Commercial Banks, page 5) retail banks provide payment services, current and saving accounts to private customers. To be able to project the financial development of bank it is necessary to understand its value drivers. These are the basis in order to analyze the bank's previous performance and be able to forecast the development of future performance. Figure 6.2 illustrates the value drivers for retail banks: Interest rates on its products and the related volumes (book values of assets and liabilities outstanding). Additionally the operating efficiency (cost/income ratio) and the growth of the bank drive the value. This illustrates why costs are such a relevant topic in times of low interest rates [33].
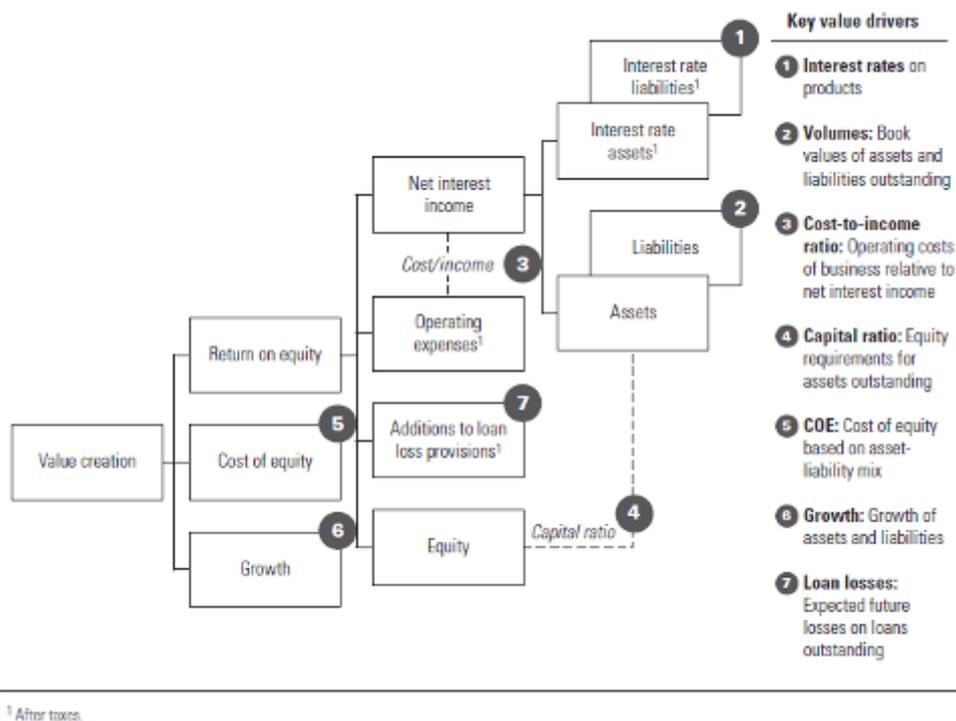
Fig. 6.2 Value drivers for retail banks[33]

6.1.2   Interest Rates

As mentioned above the net interest income is a key value driver for retail banks. The interest income of a bank is strongly dependent on the monetary policy of the national and international central banks as well as other macroeconomic factors. As a guideline to forecast the development of the interest rates the EURIBOR interbank swap rates can be

used.

In this case study the author forecasts the interest rate of loans and deposits for UBS and for Easybank based on historic values. After the merger (effective date 01/01/2015) Easybank will continue to work with the same interest rates in Austria but will achieve higher interest rates by doing business with Swiss Clients. The overall interest spread will therefore gradually increase over the years, as the volume of Swiss money increases. Table 6.1 illustrates the expected development of the interest spread for both institutes.

Period	12/2014	01/2015	12/2015	12/2016	12/2017	12/2018	12/2019
UBS (in %)	3.01	3.01	3.01	3.01	3.01	3.01	3.01
eb (in %)	0.70	0.70	0.72	0.73	0.74	0.75	0.76

Table 6.1 Forecast of the expected interest spread

6.1.3 Operating Efficiency

Another key value driver is the operating efficiency as the relation between operating income and operating expenses. The development of these two values can be forecast using the performance in past periods and anticipated changes. The author foresees a strong increase in the cost/income ratio for UBS due to the acquisition of Easybank: In the first two periods after the merger, the costs will most likely increase due to the integration work. Yet they will proceed to drop as the integration progresses and the synergies take effect. UBS will subsequently be able to leverage the cost-reducing effects by outsourcing low-margin banking clients to its direct banking subsidiary.

Period	12/2014	01/2015	12/2015	12/2016	12/2017	12/2018	12/2019
Cost/Income UBS	78.95	79.33	85.00	82.00	78.00	76.00	72.00
Cost/Income eb	60.00	60.00	50.00	50.00	45.00	45.00	45.00

Table 6.2 Forecast of the expected cost/income ratio

6.1.4   Deposits and Loans

A related value driver is the business growth of the individual financial institute. Both the past performance and research into the industry help to forecast the development of loans and deposits.

   As Easybank acts as a liquidity collector for the BAWAG P.S.K. group as discussed in Section 5.2.4 (Loan Growth, page 33), deposits from customers are lent to the mother or sister companies. The author assumes that Easybank will have a similar strategic position within the group and its loans will therefore continue to grow at the same rate as the deposits. The forecast growth of deposits is based on the performance of recent periods. Although recently the growth has been very strong, the author expects a slow down in deposit growth for future periods. The growth of loans and deposits for UBS is expected to continue according to the tendency of recent periods. See table 6.3 for details.

Period	12/2014	01/2015	12/2015	12/2016	12/2017	12/2018	12/2019
Deposits growth eb	15.00	15.00	12.00	10.00	10.00	8.00	5.00
Loan growth eb	15.00	15.00	12.00	10.00	10.00	8.00	5.00
Deposits growth UBS	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Loan growth UBS	7.36	7.36	7.00	6.50	6.00	5.50	5.00

Table 6.3 Forecast of the expected deposits & loans annual growth in percent

6.1.5   Income Taxes

The author assumes that UBS pays the regular statuary tax rate of Switzerland while Easybank will not pay any taxes due to paying taxes via its mother company, similar to the current situation as part of BAWAG P.S.K.

6.1.6   Others

Other assets and liabilities play only a minor role in the development of the two institutes. They are forecast to remain stable for future periods.

6.2   Cash Flow Valuation

6.2.1   Cost of Equity

Calculating the net present value of both companies requires the discounting of the cash flows to equity at the cost of equity (k_E) as outlined in Section 3.3 ("Cost of Equity", on page 16) . The author uses the CAPM to understand the costs of both institutes for its equity.

UBS currently has a beta factor of 0.96 according to Yahoo Finance[1]. The risk-free rate is assumed at 1.3 percent [4] and the market-risk premium at 5.0 percent [4]. This results in k_E of 6.10 percent.

The acquisition changes UBS' debt/equity ratio which also affects the k_E: Currently, UBS' debt/equity ratio is 1.635[2]. To calculate the new k_E, first the unlevered beta β_U (beta factor for the company without any debt) is calculated and then the beta of the UBS Group (the result of the merger) is calculated (beta factor for the company with the new debt/equity ratio). For the UBS Group the author assumes a slightly increased debt/equity ratio of 1.65, as the enterprise value of Easybank is about 1/300 of UBS'. It is important to bear in mind that for the debt/equity ratio the market value of equity and not the book value of equity is considered. The formula for recalculating the new beta is shown in equation 6.1[11], resulting in a post-merger k_E of 5.07 percent.

$$\beta_E = \beta_U(1 + (1 - t)\frac{D}{E}))   \tag{6.1}$$

Easybank is not publicly traded, neither is its parent company BAWAG P.S.K. One possibility would be to take the beta factor of a comparable financial institute or to assume a beta factor of 1.00. As comparable Austrian financial institutes have very different beta factors the author assumes a beta factor of 1.00 would be justified for Easybank.

As a long-term risk-free rate the author assumes 2.50 percent [4] and as market risk premium 6.00 percent[4]. In total this results at an estimated k_E of 8.50 percent for Easybank. After the merger, Easybank will finance itself at the same k_E as its new parent (UBS Group).

Table 6.4 summarizes the different parameters for valuing UBS, Easybank and the resulting company UBS Group.

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[1] http://finance.yahoo.com; accessed on 22/10/2014
[2] http://ycharts.com/companies/UBS/debt_equity_ratio, accessed 27/10/2014

Value	Easybank	UBS	Group
β_E (*in %*)	1.00	0.96	0.75
risk free (in %)	2.50	1.30	1.30
premium (in %)	6.00	5.00	5.00
k_E (*in %*)	8.50	6.10	5.07
β_U (*in %*)	–	0.33	–
Debt/Equity ratio	–	1.635	1.65

Table 6.4 Cost of Equity UBS & Easybank

6.2.2   Terminal Value

The calculation of the terminal value requires the net income of the latest period, a continuous growth parameter (g), the return on equity (r_E) and the cost of equity (k_E) (see also equation 3.4).

For Easybank as a stand-alone institute the author estimates a terminal growth of 0 percent. Higher growth parameters make the terminal value unrealistically high. Further parameters are the last period's r_E of 11.06 percent and k_E of 8.50 percent. In comparison, Easybank as part of UBS Group is also estimated to grow 0 percent in perpetuity, 20.15 percent r_E and a k_E of 5.07 percent. This financing advantage caused by the significantly lower k_E and the significantly higher return on equity lead to a terminal value of €155 m, significantly higher as the terminal value of €80 m for the stand-alone institute.

6.2.3   Cash flow to equity

Using the theory outlined in Section 3.2.2 ("Cash-Flow-to-Equity Valuation Model", on page 16) the value of a company consists of its cash flows to equity discounted plus the terminal value discounted at the k_E. Table 6.5 details the expected cash flows.

"Net income represents the earnings theoretically available to shareholders after payment of all expenses, including those to depositors and debt holders."[33]. To derive the equity cash flow changes in equity (e.g. retained earnings) and other comprehensive income or losses (e.g. currency losses) have to be considered. The author assumes changes in equity of ten percent of the net income and other comprehensive income to be zero.

The stand-alone valuation of Easybank values the present value of its future equity cash flows (ECF) at about €113 m. The present value of the ECF of Easybank as part of the

Period	2015	2016	2017	2018	2019	Terminal
eb	7.1	7.2	7.3	5.2	5.7	80.6
eb *merged*	7.8	8.2	8.6	6.2	7.1	154.8
UBS	4,174	10,988	12,507	13,492	14,891	293,598

Table 6.5 Present value of the future cash flows to equity & the terminal value (in €m)

UBS group results in a value of €192 m. This means that the integration of Easybank into the group results in synergies of about €80 m for Easybank, as illustrated by figure 6.3.

6.3   Multiples Valuation

To triangulate the result the author performs a multiples valuation and compares the result with the result of the cash flow valuation. As outlined in 3.4 ("Relative Valuation (Multiples)", on page 20) the market to book value (MBV) is the ratio of the market value of equity to the book value of equity. In order to perform a multiples valuation using the MBV ratio, a meaningful ratio needs to be derived.

Raiffeisenbank International and Erste Bank Group have a similar profile as BAWAG P.S.K., the parent company of Easybank. From an organisational point of view Easybank is more a department than a subsidiary, hence it makes sense to consider an MBV ratio of a similar financial institute. The current MBV ratio of Raiffeisenbank International is 0.373[3], the current MBV ratio of Erste Bank Group is 0.79[4] meaning that the market value of equity is lower than the book value. This weak performance of the share price is caused by the strong exposure of Austrian financial institutes in Eastern Europe[36].

These MBV ratios result in a market value of Easybank between €22 m and €47 m. This is much smaller in value than the result of the cash flow valuation.

6.4   Asset Based valuation

The weighted average maturity (m) of Easybank's loan portfolio is about three years[13], the interest rate (i) is 1.70 percent, and the current annuity is €47.19 m. This results in a

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[3]Source: Bloomberg, accessed 21-12-2014
[4]Source: Bloomberg, accessed 21-12-2014

present value of €136.89 m for the annuities, a present value of €2614 m for the loans – a total of €2750,95 m. Minus deposits of €2723 m and other liabilities of €5.8 m the asset based value of Easybank's equity is €21.95 m.

6.5 Effects of the Merger

6.5.1 Expected synergies

As outlined in section 3.6 ("Synergies", page 22) synergies play an important role in M&A. In the forecast operating synergies will be reached after Easybank's successful integration in UBS. Easybank will be able to use the infrastructure of UBS to operate its online banking platform. Similar to its current mode of operating inside the BAWAG group, Easybank will be able to leverage UBS' risk management, HR services, IT services and other support services.

UBS will restructure its customer segments and product portfolio. Easybank will become a brand of the UBS group. The retail banking business will be split between UBS and Easybank: Wealthy and senior clients who prefer personal interaction with their financial advisor and who are willing to pay a premium for this service will be served by UBS. Clients who prefer to pay less for their banking services and are willing to perform the interaction with their financial institute via direct banking channels will be served by Easybank.

By moving commodity services to Easybank and focusing on more lucrative clients (senior clients are more likely to buy profitable banking products) the banking group will be able to reduce operating costs. UBS is expected to reduce its cost/income ratio to about 72 percent by 2019 (see also Table 6.2).

6.5.2 RoE and EVA

Return on equity and economic value added are further key performance indicators for banks. Based on the forecast the return on equity of the combined group is estimated at about 12 percent after the merger, and assuming a successful integration will raise to above 20 percent in the following periods (see Table 6.6 for details). Similarly the EVA of the combined group will grow strongly over the following periods (see Table 6.7).

Figure 6.4 illustrates the projected development of the financial institutes' return on equity. Before the merger UBS' performance was very volatile, falling from 18 percent in
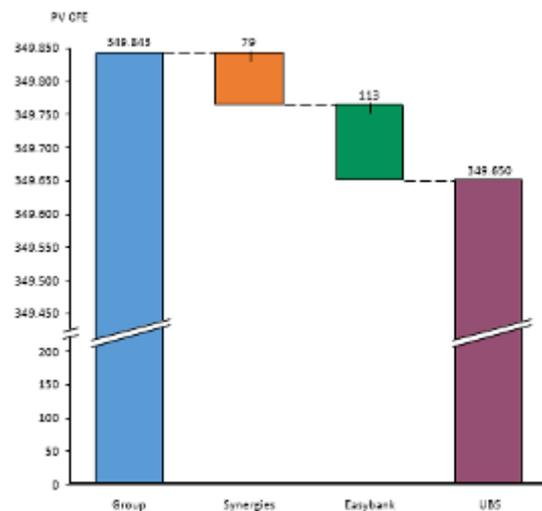
Fig. 6.3 Projected synergies of the merger for Easybank

2010 to minus six percent in 2012, before rebounding just above the cost of equity in 2013. The merger with Easybank will come in effect on 01/01/2015 and will improve the return on equity sustainably. Additionally the cost of equity of the combined institute is reduced from 6.10 percent for 5.07 percent[5].
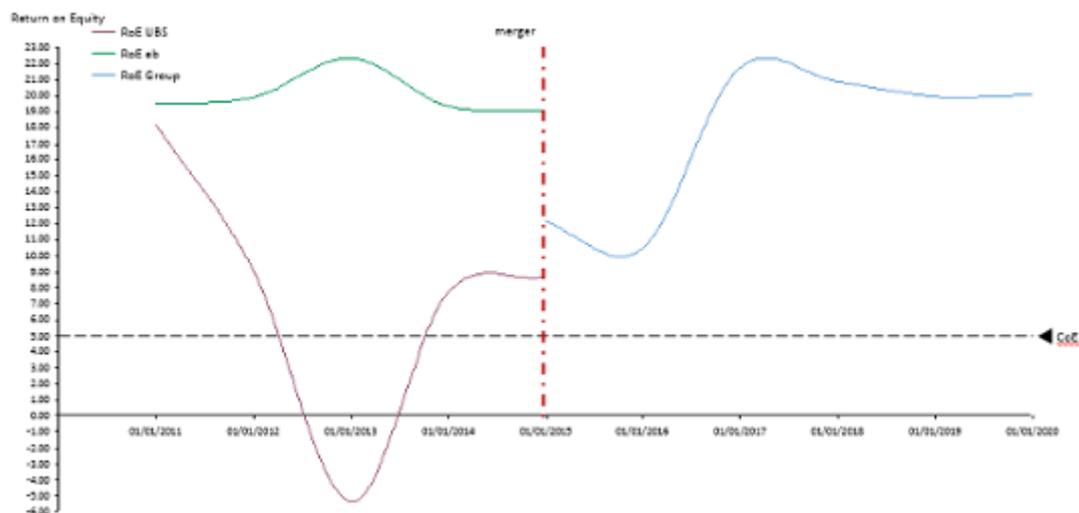
Fig. 6.4 Projected development of the financial institutes' return on equity

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[5]see attached digital medium

Period	12/2014	01/2015	12/2015	12/2016	12/2017	12/2018	12/2019
UBS ROE(in %)	8.65	7.91	9.71	20.42	19.78	18.96	19.20
eb ROE(in %)	19.14	19.14	18.17	18.39	20.46	19.54	20.15

Table 6.6 Forecast development of the return on equity

Period	12/2014	01/2015	12/2015	12/2016	12/2017	12/2018	12/2019
UBS EVA	1087	773	1811	9452	11149	12392	14456
eb EVA	6.672	6.672	3.892	4.286	4.719	1.574	2.874

Table 6.7 Forecast development of the economic value added (in €m)

Chapter 7

Comparison of Valuation Frameworks

7.1 Introduction

Based on the experiences of the frameworks' application in Chapter 6, this chapter will analyze and evaluate the strengths and weaknesses of the valuation frameworks and give recommendations on their usage.

7.2 Discounted Cash Flow

The discounted cash flow method was outlined in Chapter 3 ("Corporate Valuation in Context of Mergers & Acquisitions", on page 11) and applied in Chapter 6 ("Case Study - Valuation", on page 37). It relies on a forecast of the future cash flows which are discounted at an appropriate discount factor. In the case of financial institutes the cash flows to equity are discounted at the cost of equity. The derivation of the forecast of the cash flows requires a lot of effort. A financial analysis of the company has to be performed, the macroeconomic outlook as well as the competitive situation and their effect on the future development of the combined firm have to be forecast. This is a sophisticated task and obviously the accuracy suffers the further the forecast goes into the future.

The value of future cash flows for retail banks is influenced by future interest rates and the corresponding interest spread, growth rates of loans and deposits; and the operating performance of the institute. To calculate the present value of the equity the cash flows are discounted by the cost of equity, which is calculated using the capital asset pricing model (CAPM). The CAPM is sensitive to small changes in the input values and the resulting cost

of equity has a strong impact on the present value.

Another factor with strong influence on the result is the terminal value. The terminal value depends strongly on the cost of capital and the terminal growth rate and it makes up about 80 per cent of the present value.

"DCF works best when there is a high degree of confidence about future cash flows." The DCF model's focus is the long-term value of a company. It helps to avoid the pitfall of a valuation bubble, but may also lead to missing a profitable short-term share price run-up. [22] suggests using conservative inputs when performing a DCF calculation as too optimistic assumptions can lead to inflated values and overrated prices.

7.3   Multiples

As outlined in Section 3.4 ("Relative Valuation (Multiples)", on page 20), valuation using multiples is a pragmatic approach for deriving a price relative to similar companies within a market. A strength of multiples is that they are simple and in comparison to the DCF model easy to use and understand.

A weakness is that in case an entire market is over or undervalued the result of the valuation using multiples will be similarly inaccurate. Another weakness is that it can be hard to find a good peer group of comparable companies and the available information can be outdated, especially for transaction multiples[33].

7.4   Asset based valuation

Asset based valuation is a method for deriving a company value based on the value of its assets. In its application in Section 6.4 ("Asset Based valuation", on page 44), it demonstrated calculating the value of equity by taking the book value of the assets, adding the expected cash flow from the asset portfolio and subtracting the debt.

While it is much simpler in its application than the DCF method it ignores a company's earnings and growth potential, making it more suitable for mature institutions[9].

Chapter 8

Conclusion

8.1 Methodology

The Master's Thesis evaluated the strategic acquisition of a direct bank from the point of view of an international banking group. It analyzed the current market situation in Europe and how the market situation affects retail banks. A literature research examined established valuation theory and how it is applied on banks.

After understanding the main value drivers for retail banks and how banks can be valued, the theory was implemented in the context of a case study of a banking merger. The following sections conclude these findings.

8.2 Banking market in Europe

The current situation of the European banking market is characterized by historically low interest rates and ever growing regulatory pressure on banks. As fees from interest are the main income for retail banks, cost management is a top priority on the agenda of senior management. Market studies name investment into new technologies, modernization of existing IT infrastructure and process optimization as measures for improving operational performance [12, 19].

8.2.1 Easybank

Easybank, 100 percent subsidiary of BAWAG P.S.K., is a direct bank with its main focus on the Austrian market. As a direct bank it offers free current and saving accounts to its

clients. According to its website[1] it pays very low interest rates on its complimentary current accounts, which enables Easybank bank to act as a cheap liquidity collector for its banking group. The parallel growth of loan and deposit volume and the high percentage of loans to credit institutes confirms this assumption.

Period	2010	2011	2012	2013
Return on Equity (%)	19.49	19.89	22.37	19.39
Cost of Equity (%)	8.50	-		
Cost/Income ratio (%)	59.05	59.82	57.86	51.76

Table 8.1 Performance Easybank 2010-2013 [13]

In recent periods Easybank was able to generate a return on equity well above its estimated [2] cost of equity. The cost/income ratio is characteristic for a direct bank - between 60 to 50 percent.

8.2.2 UBS

UBS AG is a global universal bank based in Switzerland. It is active in more than 50 countries and is the Swiss market leader in retail banking and one of the world's largest investment banks [40]. Table 8.2 details UBS' key performance indicators. The return on equity in recent periods was around the estimated cost of equity[3]. The calculated cost/income ratio of the bank is very high. These KPIs show that UBS is similarly affected by the current market situation as other European retail banks.

8.3 Multi-Channel Strategy

The thesis evaluated the acquisition of a direct bank as a strategic measure to increase its profitability. The acquisition of an established direct bank gives the buyer access to a mature technology platform, allows to leverage the marketing knowledge, and use the brand name of the direct bank. Additionally the buyer is able to faster enter the direct banking market. In the case study Easybank is the target for the acquisition. It is an established direct banking

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[1]http://goo.gl/Ta8s1D; accessed 2015/01/20
[2]estimated using CAPM
[3]estimated using CAPM

brand and has a customer base of about 460,000 [13]. The author assumes that the new banking group will be able to shift the budget-conscious clients to the direct bank and thus reduce its operating costs. Additionally the group is able to access cheaper financing via the Austrian capital market. Easybank will be able to use the infrastructure of UBS to operate its online banking platform, and leverage UBS corporate services as risk management, human resources and IT.

Table 8.3 details the development of the operating costs (cost/income ratio) for the next five years. In 2014, the period before the merger, UBS achieved a cost/income ratio of almost 79 percent, Easybank of 60 percent. In 2015 the cost/income ratio will rise sharply to 90 percent due to integration costs and decline over the next few years as the synergies of the merger can be brought into effect.

Return on equity and economic value added are the two key performance indicators for profitability of retail banks. The return on equity of UBS was at about 8.6 percent before the merger. During the integration it will lower to about 6.5 percent. After the integration it will raise to 18-19 percent. As UBS will bear the integration costs, the return on equity of Easybank will remain between 19 and 20 percent. Similarly to the return on equity, the economic value added will strongly improve for the banking group. It was about €1 billion before the merger and it will surge to over €10 billion until 2018.

8.4 Valuation

Based on the above mentioned case study the thesis evaluated methods for valuation of banks - discounted cash flow (DCF) valuation, relative valuation and asset-based valuation. Each of the methods has its respective strengths and weaknesses. When performing a quick ballpark estimate multiples should suffice as a method for deriving a valuation of a company value.

If a more thorough analysis of a company has to be performed and when future earnings and growth are relevant it makes sense to use a DCF valuation. While the DCF valuation takes much more effort the person undertaking the valuation is able to gain a better understanding of the value drivers of the company at hand. It is always feasible to perform a sensitivity analysis to investigate which parameters most influence the valuation.

These results can then be triangulated using the result from a multiple valuation and the asset value.

Performance	2013	2012
Return on Equity (RoE) (%)	6.7	(5.1)
Cost of Equity (CoE) (%)	6.10	-
Cost / Income ratio (%)	88.0	106.9

Table 8.2 UBS key performance indicators [40]

Period	12/2014	01/2015	12/2015	12/2016	12/2017	12/2018	12/2019
Cost/Income UBS	78.95	79.33	90.00	85.00	82.00	82.00	82.00
Cost/Income eb	60.00	60.00	50.00	50.00	45.00	45.00	45.00

Table 8.3 Forecast of the expected cost/income ratio (in %)

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Appendix A

Bank Accounting

A.1 Example Balance sheet & Income Statement

TABLE 4.1

Consolidated Balance Sheet, Royal Bank of Canada, 2007

Assets (Can $ million)		Liabilities and Shareholders' Equity (Can $ million)	
Cash and due from banks	4,226	Deposits	
Interest-bearing deposits with other banks	11,881	Personal	116,557
		Business and government	219,886
		Bank	28,762
			365,205
Securities		Other	
Trading	148,246	Acceptances	11,786
Available-for-sale	30,009	Obligations related to securities sold short	44,689
Investments	—	Obligations related to assets sold under repurchase agreements	37,033
		Derivatives	72,010
		Insurance claims and policy benefit liabilities	7,283
		Liabilities of operations held for sale	—
		Other liabilities	28,483
			201,284
Assets purchased under repurchase agreements	64,313	Subordinated debentures	6,235
		Trust capital securities	1,400
		Preferred shares liabilities	300
Loans		Noncontrolling interest in subsidiaries	1,483
Retail	69,462		
Wholesale	69,967		
	239,429		
Allowance for loan losses	(1,493)		
	237,936		
Other		Shareholders' equity	
Customers' liability under acceptances	11,786	Preferred shares	2,050
Derivatives	66,585	Common shares	7,300
Premises and equipment, net	2,131	Contributed surplus	235
Goodwill	4,752	Treasury shares: preferred	(6)

Fig. A.1 Example balance sheet (Bank of Canada)[10]

Assets (Can $ million)		Liabilities and Shareholders' Equity (Can $ million)	
Other intangibles	628	Treasury shares: common	(101)
Assets of operations held for sale	—	Retained earnings	18,167
Other assets	17,853	Accumulated other comprehensive income (loss)	(3,206)
	103,735		24,439
Total assets	600,346	Total liabilities and shareholders' equity	600,346

Fig. A.2 Example balance sheet (continued)[10]

Interest income (Can$ million)	
Loans	14,724
Securities	7,665
Assets purchased under reverse repurchase agreements	3,450
Deposits with banks	538
	26,377
Interest expense	
Deposits	13,770
Other liabilities	4,737
Subordinated debentures	338
	18,845
Net interest income	7,532
Non-interest income	
Insurance premiums, investment and fee income	3,152
Trading revenues	2,261
Investment management and custodial fees	1,579
Mutual funds revenues	1,473
Securities brokerage commissions	1,353

Fig. A.3 Example income statement[10]

Service charges	1,303
Underwriting and other advisory fees	1,217
Foreign exchange revenue, other than trading	533
Card service revenue	491
Credit fees	293
Securitization revenues	261
Net gain (loss) on sale of available-for-sale securities	63
Net gain on sale of investment securities	—
Other	951
Noninterest income	14,930
Total revenue	22,462
Provisions for credit losses	791
Insurance policyholders benefits, claims and acquisition expense	2,173
Noninterest expenses	
Human resources	7,890
Equipment	1,009
Occupancy	839
Communications	723
Professional fees	530
Outsourced item processing	308
Amortization of other intangibles	96
Other	1,108
	12,473
Business realignment charges	—
Income from continuing operations before income taxes	7,025
Income taxes	1,392
Net income before noncontrolling interest	5,633
Noncontrolling interest in net income of subsidiaries	141
Net income from continuing operations	5,492
Net loss from discontinued operations	—
Net income	5,492
Preferred dividends	(88)
Net gain on redemption of preferred dividends	—
Net income available to common shareholders	5,404

Fig. A.4 Example income statement (continued)[10]

Appendix B

Case Study

B.1 Long list of potential targets

Information of ownership structure has been taken from the institutes' websites. The table lists the name of the direct bank, the name of the mother company, whether the direct bank has its own legal entity or just a brand, and whether it has its own branches.

Name	Mother company	Independent	Branches
Austria			
bankdirekt.at AG	RaiffeisenLB OÖ	y	n
direktanlage.at AG	DAB Bank	y	n
easybank AG	BAWAG P.S.K.	y	n
ING DiBa Direktbank Austria	ING Groep	y	y
livebank.at	ÖVAG	n	n
Germany			
1822direkt	Frankfurt Sparkasse	n	n
Bank of Scotland		n	n
comdirect bank AG	Commerzbank	y	n
Cortal Consors	BNP Paribas	y	n
DAB Bank	Unicredit Group	y	n
Deutsche Kreditbank (DKB)	BayernLB	y	n
finosdirect	Sparda-Bank SW eG	n	n
ING DiBa	ING Groep, Netherlands	y	n
Netbank AG	Sparda-Banken	y	n
Norisbank	Deutsche Bank, Germany	y	y
RaboDirect	Rabobank	n	n
SKG Bank	Deutsche Kreditbank	y	n
Umweltbank		y	n
Volkswagen Bank	Volkswagen FS AG	y	y
VTB Direktbank	VTB Bank (Austria) AG	n	n
Wüstenrotdirect	Wüstenrot Bank AG	n	n

Table B.1 Long list potential candidates