MEASURING INTRINSIC VALUE OF PT. BANK MANDIRI TBK. USING RESIDUAL INCOME APPROACH, DIVIDEND DISCOUNT MODEL AND PRICE TO BOOK VALUE

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Abstract

This paper empirically studies the valuation of PT. Bank Mandiri TBK (BMRI) using residual income, dividend discounted model and price to book value method. It adopts top down analysis approach whereas begin with the macroeconomic analysis, industry and then proceed to company analysis which include financial projection for upcoming years with various growth assumption gained from company visit. The result from study showed that the intrinsic value of BMRI worth at Rp11,200 using residual income method while it worth at Rp10,100 and Rp9,800 based on dividend discounted model and price to book value ratio approach respectively. This study indicated that the stock is undervalued comparing to its closed price at Rp8,7100 per October 25, 2013.

Keywords: Valuation, Banking, Residual Income, Price to Book Value, Dividend Discount Model

Introduction

Indonesia capital market has been showing an impressive stretch during the last three years in which Jakarta Composite Index (JCI) and foreign direct investment (FDI) kept hitting new record. JCI, country's equity benchmark, has shot up from 3,409 at the beginning of 2011 to hit 5,068 on May 31, 2013, a surge of 49%**.** While FDI recorded its high in the first three month of 2013 reaching IDR65.5 trillion (US$6.5 billion) and made up a total IDR93 trillion of FDI in the first quarter of 2013. As stated by Indonesia Stock Exchange (2013) that the impressive bounce of Indonesian capital market was largely due to nation's robust economic growth (gross domestic product expanded at average of 6.2% since the last three years) backed up by strong domestic consumption, rising middle class income, healthy fiscal policy and political stability.

International investors have been keen to get more exposure in to Indonesia as the country's outlook became more appealing. Bond and equity prospect are racing on positive track whereas in 2013 the country had raised total Rp 383 trillion from both instruments. International investors as a result now dominate major portion of country's equity and bond transaction. According to latest figures from Indonesia Stock Exchange (IDX), foreign investors owned nearly 63% of Indonesian stock in term of market capitalization as of 2013 and the rest 37% owned by domestic institution and retail investors (IDX, 2013).

As far as the capital market is concerned, stock exchange rigorously managed to develop large based of investor from domestic institution, foreigners, to retail investors. IDX has in cooperation with Association of Indonesia Securities Companies (APEI), BAPEPAM LK and securities companies been organizing free education program to introduce capital market to the public in order to develop larger base of retail investors. IDX (2013) stated that registered investors account rose rapidly from 370,786 in March 2013 to 422,324 as February 2014, a surge of 14%.

Nevertheless, one of the greatest challenges facing for every investor in dealing with capital market is assessing the intrinsic value of the security. Understanding company valuation and fundamental aspects is essential for every capital market investors to give them the objective measure of their investing decision (Damodaran, 2009). Valuation is playing important part since it is grounded on fundamental factors that largely influence the company performance. This is however under assumption that the market is rational and any arbitrage opportunity will be eliminated by market mechanism eventually the value of company should be returned to its intrinsic value.

The approach of company valuation may result in different methods. These methods are consistent with the purposes and company business structure so that it will expectedly reach the intrinsic value of the targeted company. The banking and property sector for example have different business model due to the facts they both operate in different industry and business environment. The use of inappropriate valuation methods for these two different sectors may produce bias value and led to losses due to the facts that valuations approach are all based on different principles. Understanding the valuation principles is critical for the analyst to choose the appropriate valuation approach.

This paper aims to evaluate the intrinsic value one of the financial service in Indonesia namely PT. Bank Mandiri Tbk. It is widely realized that banking industry is the life blood and key driving force of economy since the real sector heavily determined on banking industry soundness. Indeed, it has been challenging to value financial service rather than real sector because of several factors. Firstly, its industry is heavily regulated whereas the change in regulation could lead to large shift in value. The accounting rule is also varied with general firms due to the assets are being marked to market. Lastly, its earning is largely depending on the payment of third party for its credit whereas its ability to pay also determined on business profitability.

Having said that, Damodaran (2009) argued that financial services are best valued using equity valuation model rather than enterprise valuation model and with actual or potential dividend rather than free cash flow to equity (Damodaran, 2009). However, this paper will review how residual income, multiple valuations (i.e. price to book value) and dividend discounted model to value financial service. As its known that the bank's business characteristic is generating income from its liabilities which mainly compose financial assets those are marked to market and thus the valuation should pay more concern on its book value and thus residual income is chosen to address this issue. However, the author adds dividend discounted model and P/BV relative valuation as complementary model which will be described in the following section.

PT Bank Mandiri Tbk (BMRI) is chosen as target analysis due to the bank has managed to be one of the largest and valuable banking in Indonesia during the recent years. This is shown by the stock price surge which has been rising significantly in less than two years from Rp5,696 in the beginning of 2011 to Rp7,650 in November 1, 2013, a sour of 34%. Furthermore, BMRI is ranked as top five largest market capitalization in Indonesia whooping at Rp245 trillion and the bank is also highly active traded stock with average daily trading volume of 46 million shares. Apart from that, the author likes the company's fundamental that has demonstrated decent growth since its second crisis in 2005 as indicated by stronger liquidity (84.5% LDR), better asset quality (1.9% NPL) and improved profitability (5.57% NIM) in 2013.

1. Literature Review

Hamonangan and Sulistyawati (2012) in the journal of capital market and banking analyzed the intrinsic value of PT. Bank Central Asia (BBCA) using two valuation approaches: discounted earning and price to book value. Using these two methods, they found that BBCA should be valued at Rp10, 820 per share and it was undervalued by 35.3% compared to its closing price of Rp8, 000 per December 30, 2012. The valuation determined in this analysis is proceeded through difference assumptions includes: 24% of credit growth, 18% growth third party fund, interest income growth at 11%, net interest margin stood at 5%, NPL, fee based income and inflation grew only by 0.5%, 25% and 6.75% respectively for three years ahead.

Following this research, Simorangkir and Panubut (2012) determined intrinsic value of PT. Bank Negara Indonesia (BBNI) using similar approach. The result indicated that BBNI per share worth at Rp4,589 using discounted earning approach while PBV calculation gained result of Rp4,508. These two valuation approach indicated BBNI is undervalued compared to its closing price of Rp3,825 per October 21, 2011. The researchers proceed the analysis using top down approach whereby began by macro analysis, industry, and proceed to company analysis which include financial projection and examining intrinsic value determinant. The assumptions used for valuation were also varied based on the historical performance of the company.

Unlike above mentioned Indonesian researches who used discounted earnings and PBV as valuation methodology, Sinkovic (2013) on his master thesis examined the intrinsic value range of Gorensjka Banka -non public Slovenian retail banking- for its minority shareholders using income and market approach. He argued that it is better to express value in the range estimate rather than a single input due to the fact of different assumption and subjective inputs in the model. The income approach utilized in the thesis includes residual income model and discounted cash flow to equity while in the market approach or comparable companies method utilized price to book value model. He found that value of the bank as June 30, 2012 range between €700 to €749

Likewise Sinkovic (2013), Mata (2012) utilized the same valuation model to value Banco Esperanto Santo (BES), a second largest Portuguese Bank listed in PS120 index. The writer used the residual income and discounted cash flow model and relative valuation. However, the thesis stress out to stick at excess return framework (i.e residual income model) to determine BES intrinsic value since the model catches the growth opportunity in emerging market and account the bank ability to capture value in domestic market. The valuation suggests BES value at €1.26 per share as opposed to its closing price of €1.13.

In the light of 2009's financial crisis, Luca (2009) examined the value of Danske Bank Group, Denmark largest financial institution, using related valuation framework similarly to Sinkovic (2009), Mata (2012) which include free cash flow to equity (FCFE), dividend discount model (DDM), Residual Income model (RIM), and justified price to book value. Luca (2009) argued that all these models are well appropriate to value bank. The bank was valued at 131 DKK based on FCFE and dividend discount model (DDM) while the company value increases to 144 DKK using residual income model and declined to 113 DKK using justified PBV. That said, three out of four valuation model indicated that Danske Bank Group was undervalued with an average upside potential of 5.1% based on the closing price of 129 DKK per November 3, 2009.

2. Methodology

The aim of this chapter is to define the methodological approach used in this thesis. The analysis of company valuation will be built on top down approach which starts by examining macroeconomic environment and industry influences and finally performing individual company analysis that include financial analysis and intrinsic value estimate. The company analysis is the main core analysis in determining intrinsic value. It reviews historical and presents performance of company's financial condition and future prospect through qualitative and quantitative analysis.

Before proceeding to valuation, the future financial forecast is performed using the inputs from previous analysis to build realistic forecast assumption. The valuation is finally proceeding with different appropriate model namely residual earning method, dividend discounted model and justified price to book value. The result of this valuation model will be compared to the market value of the stock. Conclusion and recommendation are taken by comparing the calculated intrinsic value to market value and could be used by future investors as benchmark of investing decision.

2.1 Data Collection

The empirical data used for this thesis is entirely secondary data which the sources consists of variety of databases such as DataStream, company reports, government institution, and country report. The following is specific data and its sources:

a. Annual report of PT. Bank Mandiri Tbk (BMRI) from period 2008-2013 extracted from company website

b. Historical price of PT. Bank Mandiri Tbk from period 2008-2013 obtained from Datastream

c. Historical value of Jakarta Composite Index (JCI) from period 2008-2013 obtained from Datastream.

d. Macroeconomic data such as Certificate of Bank Indonesia (SBI), inflation, GDP growth and exchange rate obtained from Datastream and Bank Indonesia website.

3.2 Valuation Method

The most widely used valuation method for valuing companies is discounted free cash flow model in which analysts project the value of operation measured by free cash flow and subtracting with an estimated of net debt value. However, this model is primarily used to value non-financial companies and rarely used for non-financial service due the fact that they are different in characteristic as discussed at the previous section.

The choice of appropriate model is critical to reach a trustworthy analysis and rationale output or value. There are three types of model used to value PT. Bank Mandiri Tbk (BMRI) in this thesis, they are: 1) residual income model 2) discounted dividend model and 3) justified price to book value. These three models are widely used to value financial services as described earlier in the previous section. Residual income put heavy concerns on book value of equity which recorded in the balance sheet side and this aligns to characteristic of the bank which generates value from its financial assets.

Dividend discounted model is further chosen as the second model because the company pays consistent dividend over the period of time. While relative valuation is added to compare the value of BMRI to its industry peers as described earlier. However, the implementation of these models involves different assumption and thus yield different value estimate as consequences.

Residual Income Model

This model is built on the premise that the value of the company equals to the invested capital and the excess present value of residual income generated by the company. The capital invested for the firm is measured by its book value of equity where residual income is the earning in excess of cost of equity. The residual income model takes the following equation:

$$\text{Value of Equity}_0 = \text{BV of Equity}_0 + \frac{\sum_t^n (\text{NI} - \text{k}_\text{e} * \text{BV of Equity}_{t-1})}{(1 + \text{k}_\text{e})^t}$$

Where: BV of equity = book value of equity

NI = net income

Ke = cost of equity

The model presents that the value measure for the investors is return on equity (ROE) and the risk of the company is shown by cost of equity which calculated through capital asset pricing model (CAPM) as described earlier. The model shows that the higher the difference between ROE and cost of equity implies the higher value of the company.

Residual income model is somehow mostly preferred to dividend discounted model or other equity model for several reasons. At first, the model put emphases on earning that is a measure of value creation rather than dividend which largely viewed as value distribution. Secondly, it captures large portion of equity value due to the model utilized current book values and residual earnings during the explicit forecast period. The model hence does not weigh heavily on terminal value unlike discounted cash flow model. At last, this model framework relays accounting numbers and to the cost of equity which advantages forecasting and terminal value modeling.

Dividend Discount Model

The most straight forward valuation model and the oldest one to measures the value of the bank is dividend discount model as shown below:

$$\text{Value of Equity}_0 = \sum_{t=\infty}^{t=n} \frac{\text{Dividend}}{(1 + \text{K}_\text{e})^t} + \frac{\text{Dividend} * (1 + \text{g})}{(\text{K}_\text{e} - g)(1 + \text{K}_\text{e})^n}$$

The basic premise of this valuation model is that the value of the company should align with the cash flow that the shareholders are expected to receive in the foreseeable future. That said, dividend discounted model is particularly appropriate to value bank since the company has long history of dividend payment policy with relatively stable payout ratio. Additionally, the long term growth rate of dividend payment is also modest and falling based on GDP growth rate as the bank acts as backbone of domestic economic growth.

The valuation estimate under DDM framework requires three basic assumptions: 1) dividend growth rate 2) and perpetuity growth rate 3) discount rate. Dividend growth rate among banks will be varied due to different of management and business strategy and thus it is determined by company historical performance. Perpetuity growth rate assumption is the rate of dividend growth after year end of forecasting. It is based on economic growth rate which is roughly at 6% given inherent uncertainty of long term forecast. The company is clearly will grow above or even at 6%, however, following economic growth rate as perpetuity rate is conservative assumption. Meanwhile, the discount rate is calculated using CAPM model as mentioned earlier.

Relative Price to Book Value

The last valuation model used is P/BV multiple which defined as market price of equity divided by the book value of equity. The following is the model of justified P/BV:

$$\mathrm{PBV} = \frac{\mathrm{P_0}}{\mathrm{BV_0}} = \frac{\mathrm{ROE} * \mathrm{Payout\ Ratio} * (1 + \mathrm{g}_n)}{(\mathrm{k_e} - \mathrm{g}_n)}$$

Where: P_0 = market price of equity

BV_0 = book value of equity

K_e = cost of equity

ROE = return on equity

g_n = growth rate

The model is justified to value financial service like bank looking that the bank owns major financial assets that are marked to market. The intangible assets of financial services are also relatively small. This model is highly grounded on Gordon's growth model and aimed to find the fair P/BV ratio that the bank should be traded. The model above implies four inputs: 1) ROE calculated by net income divided by book value of equity 2) dividend payout ratio measured by historical company historical policy 3) perpetuity growth rate assumption and 4) discount rate are based on domestic economic growth rate and CAPM model respectively as mentioned at previous section.

Method of Analysis

The analysis method of this thesis takes several steps as the following:

a. Performing macroeconomic analysis which could influence the banking sectors and the company performance. This type of analysis will review global economy, country's GDP performance, and inflation rate, monetary and fiscal policy which expected to have impact to the performance of company.

b. Examining banking industry through five forces of Michael Porter approach such as competitive pressure, barrier to entry and exit, industry threats and also measuring specific banking ratios.

c. Reviewing historical financial condition of the company through financial ratios and forecasting future earning and assets through specific rationale assumption. The forecasting method requires extensive analysis of company's income and expense drivers and this consists of three stages, they are:

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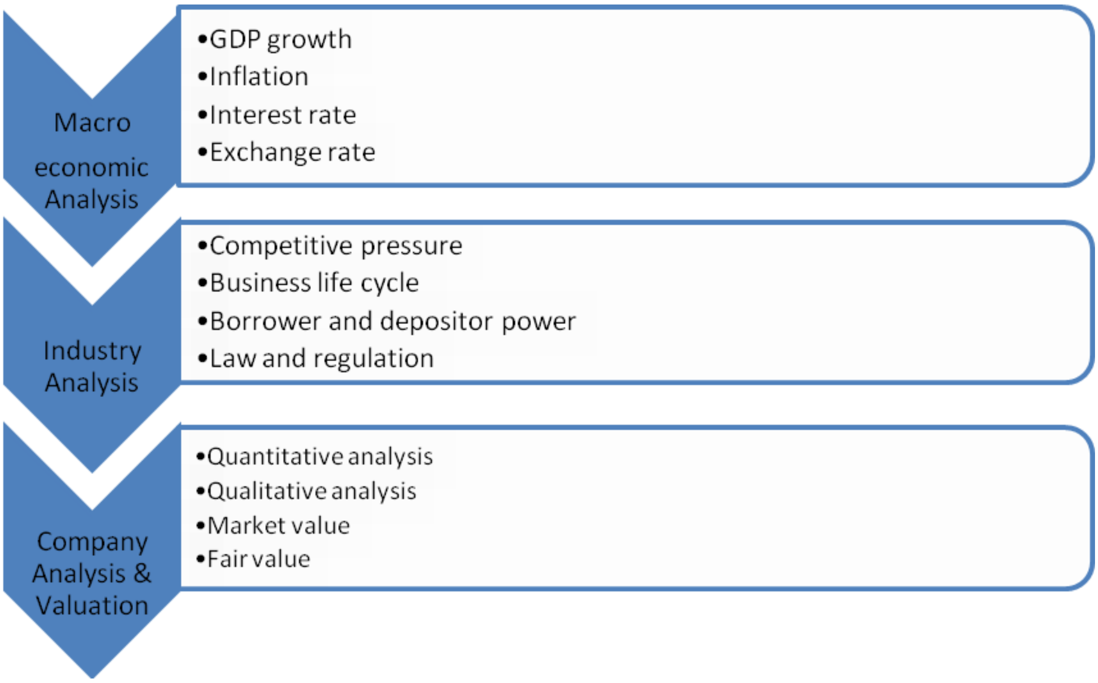
   - .... E
     stimating the earning and expense based on growth assumption.

d. Measuring discount rate is critical point in valuation process. As defined earlier that the discount rate is the rate used to discount the future value in to the present value. It is calculated through Capital Asset Pricing Model (CAPM) which measures the relationship between risk and return of the securities.

e. Calculating intrinsic value of the company with residual income, dividend discount model and justified priced to book value (P/BV) in which the valuation models had been described earlier in this chapter and also presented at the appendices.

Generally, the research process of this thesis used "top down approach" as shown as in the following figure.

Figure 3.1 Top Down Approach



Referring to the above figure, the analysis approach of this study is thus built on qualitative and quantitative basis due to the conclusion are constructed on valuation model while the inputs are constructed on qualitative insight. Having said all, it is aimed to apply widely accepted methodology of valuation and not to build new theory or new valuation model

3. Analysis

PT Bank Mandiri Tbk (BMRI) is the first largest bank in Indonesia with total assets reaching IDR 733.11 trillion as FY2013. The bank went IPO in July 2003 divested 20% of its share equivalent to 4 billion shares to public. As noted in its annual report the company currently operates 2,050 branches spread across different time zone, about 11,541 automatic teller machines (ATMs) with total loan and deposit accounted IDR 472.4 trillion and IDR 556.3 trillion.

Its core banking sector business mainly comprises four strategic business units: corporate, commercial, micro and retail, consumer finance, and treasury. Corporate business units account the biggest loan composition of BMRI, roughly 60% of total loan generating Rp5.67 trillion net interest incomes in 2013. Tough positioned as biggest corporate lenders, Its micro lending growth has increased sharply over couple years more than its corporate loan segment, a growth of 49% CAGR from 2009-2013. Yet its net interest income in micro and retail segment constituted 40% of total net interest income. In other word, Bank Mandiri should be placed as the second largest micro finance provider after Bank Rakyat Indonesia yet its position is seen to stand still as the company expected to expand its retail mix loan to 40% of total loan by 2014.

The author believes that Bank Mandiri strategy is on track to search for cost advantage in operation and funding while also being aggressive in high yield segment and fee income business in wholesale banking arena. Further, the author credits Bank Mandiri for its aggressive penetration in noncore business segment such as acquiring insurance company, inHealth, the largest health insurance provider in Indonesia. Given all these strategy and its position in funding franchise, subsidiaries synergies, and transaction capability is seen able to maintain the bank's current position in the banking industry.

4.1 Macroeconomic Analysis

Indonesia economic growth has been mostly above 5 % within the last decade even starting 2006 the economy grew by more than 6% excluding crisis period in 2009 and 2010. However, Indonesia's GDP growth never fell below 4% even during these crisis periods. This is an exceptional growth considering that many countries recorded GDP contraction during these periods. Indonesian economy grew by 5.8% for year 2013, slower than 2012 and 2011 which respectively grew by 6.2% and 6.5%. The slowdown was largely attributed to the slowdown of and export and investment growth.

Table 4.1 Macroeoconomic Indicators

Line Item	2012	2013	2014F	2015F	2016F	2017F
GDP (USD$ bn)	876.4	872	242.3	244.5	246.6	248.6
Real GDP Growth (% pa)	6.2	5.8	5.4	5.9	5.6	5.4
GDP per capita (US$ current prices)	3,687.5	3,631.5	3,572.9	4,059.5	4,495.7	4,872.7
CPI Inflation (% pa)	4.3	7.0	6.3	5.0	4.7	4.5
Current Account Balance (% of GDP)	-2.8	-1.9	-1.5	-1.1	-0.7	-0.6
Short term Interest rate (%)	4.7	5.9	7.7	7.8	7.8	7.8
Exchange rate per US $ (year average)	9,403.2	10,504.5	11,825.0	11,460.9	11,343.0	11,438.6

Source: Oxford Economies

Nonetheless, Indonesia real GDP growth based on its regional standard remains firm through 2015. While the country's output advanced by 5.8% yoy in 2013, ASEAN-5 and emerging market only grew by 5%. Looking forward, IMF (2014) foresees that the economic growths in 2014 are seen to be limited due to higher interest rate, weaker external demand for export and sluggish investment environment. IMF (2014) estimated that the global economy could grow by 3.6% for 2014 following tighter financial condition implied by many developing countries. For Indonesia alone, IMF (2014) predicted that the economy growth might be ranged of 5%-5.5% this year while oxford economics forecast to advance at 5.4% FY2014. However, Indonesia is not alone experiencing a slowing growth but most of developing countries are also facing economic challenges. Economic recovery in the US, China and Japan are still affecting Indonesia's economic performance.

During 2013, weakening global economy, inflation and interest rate hike has steered to put strong pressure on current account deficit. The current account has started to record deficit since the fourth quarter of 2011 following commodity price volatility. While in 2013, CAD recorded USD$28.4 billion (3.3% of GDP) largely increase from period 2012 which recorded USD$24.4 billion (2.8% of GDP). As a result, Indonesian rupiah has suffered a loss of more than 20% against USD dollar. The swelling in CAD was largely attributed by a rapid decline in export beside the deficit in service and income account. Country's heavy reliance on natural resource based exports which comprises 64% of total export unfavorably put the country during the downward movement of global commodity prices.

Looking ahead, we foresee that Indonesia economy is on the way to recover as the current data suggest a robust outlook. Amidst global economic headwind, Indonesia base economic fundamentals are solid to face the challenges ranging from US tapering to china's potential slowed down. Given the bank loan growth has high correlation to GDP so thus economic recovery should bode positive catalyst for bank's growth. It is expected that loan growth to accelerate at 19% in 2014 considering 5.4% GDP growth rate.

4.2 Industry Analysis

Entering 2014, Indonesian banking encounters headwinds from several directions ranging from interest rate hike, depreciating currency, weak rule of law and U.S. Fed monetary stimulus in which could increase capital outflow. These economic factors don't divine well for Indonesia companies and thus could weigh on the assets quality, profitability and other financial profiles of Indonesian banks.

Table 4.2 Important indicators for Indonesia banking industry

Line Items (in %)	2008	2009	2010	2011	2012	2013
LDR	74.58	72.88	75.21	78.77	83.58	89.70
ROA	2.33	2.60	2.86	3.03	3.11	3.08
NPL	3.20	3.31	2.56	2.17	2.15	2.21
Op. Expense/Op. Income	88.59	86.63	86.14	85.42	74.10	74.08
CAR	16.76	17.42	17.18	16.05	17.43	18.72

Source: OJK

Banking sector in Indonesia has delivered positive contribution as country economic engine in which bank loan to GDP ratio stood at 36% in 2013, up from 32% in 2012. However, the credit growth in 2013 contracted to 21.4% from an expansion of 23.1% from previous year. This slowdown in lending growth was mainly attributed from consumer segment in particular vehicle and housing loan as a result of loan to value (LTV) regulation imposed by Bank Indonesia at June 2012. Furthermore, corporate segments also slowed since the banks halted credit for those are deemed sensitive to economic contraction in 2013. Having survived from windy business period in 2013, the author foresees that the banking credit might not increase significantly from previous year factoring hike interest rate environment.

In regard of profitability, Indonesian banks have recorded positive earnings growth and noteworthy ROA hovering at 3% as suggested at table 4.5. The average net profit of banking industry rose to Rp8.9 trillion in 2013 from Rp7.74 trillion in previous year. NIM slightly declined for 2013 as it registered 4.9% lower than 5.5% level in 2012. However, Indonesian's bank NIM was still far wider than other ASEAN banks which just registered within range of 2.6% even it outstrip those of their peers in other large economies.

The financial soundness of the banking industry has been well maintained during recent years. The asset quality of the banks which measured by NPL has been drastically reduced as gross NPL ratio slightly declined from 1.87% in 2012 to 1.77% for 2013. This improvement was as a result of banks' credit risk mitigation approach and its prudential policy for lending especially for those sectors which were deemed sensitive to currency depreciation and economic downturn. Tight banking regulation which currently imposed by BI also had played a role in mitigating banking credit risk. Currently, BI had issued i) minimum LTV (loan to value) ratio for housing loan (at least 70% of collateralized assets) and ii) increase minimum down payment for as vehicle financing. This macro prudential policy is response to high housing lending to household in recent years and thus to avoid property bubble.

In term of capital aspect, Indonesian banks have been resilience improved during 2013 whereby CAR (Capital Adequacy Ratio) rose to 18.4% in 2013, up from 17.3% than previous year. The increase in capital is highly attributed to the tight policies enacted by Bank Indonesia. This high capital ratio wherein far well above 8% minimum required level provided Indonesian banks wide opportunity to for business expansion in 2014. Meanwhile, liquidity risk has also been carefully maintained in which LDR remained stable at 89.9% in 2013. This is as a result of newly issued policy mix whereas Bank Indonesia reduced the upper limit of Secondary Reserve Requirement and LDR-based Reserve Requirements. Going forward, the author foresee the liquidity and banking capital will remain stable following economic recovery and rupiah stability.

4.3 Financial Analysis

Bank Mandiri has exhibited a consistent growing net profit over the last five years. Closing year 2013, the company recorded net profit of Rp18,204 with earning per share (EPS) amounted Rp780, an increase of 17.4% from 2012 and 154.4% from 2009. Firm's strong income growth is largely driven by stable loan growth over the year and followed by reduction of interest expense. Initially there are six major sources of interest income for the bank: loan, government bond, securities, bank placement, consumer financing, and sharia income. The loan acts as the largest contributor of bank's income which constituted 76.1% of income FY2013.

Table 4.3 Income Statement

P&L Summary (IDRbn)					
FYE Dec	**2009**	**2010**	**2011**	**2012**	**2013**
Total Interest Income	32,599	33,932	37,730	42,550	50,209
Total Interest Expenses	(15,241)	(13,762)	(15,954)	(15,020)	(17,432)
Net Interest Income	**17,358**	**20,170**	**21,776**	**27,531**	**32,777**
Total Other Operating Income	5,308	8,829	14,595	14,123	17,313
Net Provision	2,321	3,338	3,710	3,454	4,856
Net Gain (Loss) of Government Bond	355	420	187	339	(180)
Total Other Operating Expense	**(10,269)**	**(12,344)**	**(16,312)**	**(18,913)**	**(21,501)**
Net Other Operating Income/Expense	(6,927)	(6,433)	(5,240)	(7,905)	(9,225)
PPOP	12,752.1	17,074.5	20,245.8	23,079.4	28,408.0
Core PPOP	12,397.0	16,654.5	20,058.8	22,740.2	28,588.3
Operating Income	**10,431.2**	**13,736.5**	**16,535.9**	**19,625.4**	**23,551.7**
Net Non Op. Inc. (Loss)	393	236	163	879	510
Pre-tax Income	10,824	13,972	16,699	20,504	24,062
Taxation	(3,626)	(4,603)	(3,816)	(4,461)	(5,232)
Minorities	(43)	(151)	(450)	(540)	(626)
Net Profit	**7,155**	**9,218**	**12,433**	**15,504**	**18,204**

Source: Company Report

However, the company's income growth of 17.4% FY2013 is slower than previous year which grew by 24.7%. This is due to a relatively slower loan growth which only booked Rp43,255 billion while the interest expense grew by 15.9% particularly time deposit interest expense. Nevertheless, the operating income and core PPOP (pre provision operating income) has significantly increased FY2013, a rise of 25.7% and 20% respectively from previous year. This suggests that the core operational growth basically rises positively.

Unlike the net interest income, the firm's other operating income is experiencing volatile uptrend growth over the past five years. Other net operating income refers to fees, commission and securities gain in which FY 2013 recorded Rp17,313 billion, an increase of 23% from previous year while FY2012 declined by 3% and +65%,+66% in 2011 and 2010 respectively. Normally, this volatile income is highly driven by gain and losses in financial assets.

Company's other operating expense refers to general administrative, salaries and employee benefits and forex loss which all recorded Rp21,501 billion FY2013 in which general administrative such as rent and professional fees constitute roughly 46% of total expense in this account. The expense is however increasing in line with total income growth. Net provision for impairment losses expenses is slightly volatile over the past five years. Allowance provision initially comprises three accounts: provision for increase or decrease in earning assets, commitment and contingencies, and other assets. Net provision FY2013 increased by 41% than previous year which recorded Rp4,856 billion. Additionally, while the increase of net income in 2013 coupled with dividend rise, all led to higher retained earning and equity.

The company's total assets are increasing since the last five years with compound annual growth rate (CAGR) of 16.7% from 2009-2013. In 2009, total assets amounted at Rp395 trillion and increased to Rp733 trillion FY2013, an increase of 85.8% from 2009 and 16.8% from 2012. This substantial increase in total assets is largely driven by loan growth which FY2013 composed 62% of the assets. Basically there are three major compositions of total assets: loans, government bond, and financial assets. As December 2009, total loan only amounted Rp18 trillion and increased to Rp455 trillion FY2013 with annual compound annual growth rate (CAGR) of 25% within the year.

Table 4.4 Balance Sheet

Balance Sheets (IDRbn)					
FY Dec (IDRbn)	**2009**	**2010**	**2011**	**2012**	**2013**
Cash	8,868	9,522	11,358	15,286	19,052
Government Bonds	89,133	78,093	78,459	78,936	82,227
Placement with Other Banks	29,707	21,311	38,652	20,869	24,554
Placement with BI	48,805	59,796	58,840	75,326	78,656
Loans	186,095	234,678	302,174	374,399	455,146
Fixed Asset	9,833	10,827	10,395	11,941	13,258
Other Asset	22,176	35,547	52,014	58,862	60,206
Total Assets	**394,617**	**449,775**	**551,892**	**635,619**	**733,100**
Customer Deposits	319,550	362,212	422,250	482,914	556,342
Inter Bank Deposit	10,922	7,657	12,654	14,321	12,672
Fund Borrowings	3,810	5,608	11,703	11,609	15,997
Other Liabilities	25,036	32,228	42,630	50,242	59,299
Total Liabilities	**359,318**	**407,705**	**489,237**	**559,086**	**644,309**
Minority Interest	189	527	861	1,953	1,371
Equities	**35,109**	**41,543**	**61,793**	**74,580**	**87,419**
Total Liabilities and Equities	**394,617**	**449,775**	**551,892**	**635,619**	**733,100**

Source: Company Report

Referring to above balance sheet table, it is clearly seen that the bank has robust loan portfolio and strong deposit growth. The total portfolio raised by 22.7% yoy in 2013 while it grew by 23.4% CAGR from 2009 to 2013. This robust loan portfolio growth was led by superior performance of micro loan and corporate credit which increase by 42.3% and 28.9% yoy respectively. The corporate loan is still dominating the loan portfolio of the bank which comprises of 40.7% of the total loan whooping at Rp169.7 trillion and it is suggesting that bank Mandiri is fundamentally a corporate lending focused player.

Financial Ratio

BMRI has demonstrated solid profitability shown by strong net interest margin (NIM), resilient growth of ROAA and ROAE which averaging at 5.54%, 2.37%, and 23.2% respectively. According to the author's estimate, the bank's NIM steadily grew by 24 bps in 2013 to 5.89% from 5.68% in the previous year. This steady increase is buoyed by higher yield in government bonds placement to 4.24% in 2013 (+35% from 3.89% in 2012) as a result of interest rate surge. Large proportion of CASA ratio of 64.7% which just yielded 1%-1.5% interest rate was however on the back of bank's strong margin.

Commercial bank's loan to deposit ratio (LDR) which measured liquidity inched up to 90.5% as in 2013 from 83.6% in the previous year while Bank Mandiri still able to maintain its LDR at 84.5%. This is considerably highly liquid and aligned to the limit set by Bank Indonesia at 78%-92% which measure the financial health of the bank. Noted that the bank liquidity is depending on the structure of funding and asset liquidity. Once the banks tried to increase its loan growth performance while the deposit declined thereby reduce its liquidity risk as loan move faster than deposit.

Bank Mandiri liquidity remains healthy since 2009 to 2013 as the bank successfully managed to increase more deposit growth as well as loan growth. Deposit growth increased by 14.5% CAGR in 2009-2013 from Rp 320 trillion FY2009 to Rp556 trillion in 2013 with CASA proportion maintained at 58%-65% in respective year. Moving forward, Bank Mandiri is expected to grab 2 million retail depositors each year with its e-cash channel which has been launched in first quarter 2014 and the company will further add more 50 branches, 1.9 ATM and increase customer loyalty through fiestapoin and thereby deposit could grow at average 14% in coming next five years.

Asset quality which measured by NPL significantly improved on the light of its business transformation. Bank Mandiri (2014) reported that its NPL is still well maintained in 2013 which just stood at 1.90% (Rp9.02 trillion) though it increased from 1.88% (Rp7.302 trillion) compared to the previous year. No worsening asset quality should be worried as it was below 5% of BI red line level. Even corporate loan which made up of 39% of total NPL declined to 1.53% in 2013 amidst global economic contraction. However, the author puts more concern in micro and small credit segment as their NPL were above 3% level even it was still in industry level. The positive part is that the NPL was still maintainable at 3% in micro and retail segment even this business segment grew 42% in 2013. The author foresees that BMRI could further maintain its NPL while also increase loan growth quality through better credit identification process, accurate underwriting process, and well maintained credit monitoring.

4.4 Valuation

Based on the above macroeconomic, industry and company specific analysis stated at the previous section. Then the author proceeds to forecasting financial statement in order to derive to company's value. Variety of assumption s is required for financial forecasting as part of valuation purposes. These assumptions are made based on historical data and author's observation with investor relation of PT Bank Mandiri Tbk. The followings are basic assumptions made in forecasting financial statement of the bank:

Table 4.5 Valuation Assumption

Assumption	2014	2015	2016	2017	2018
Loan	20.50	21.45	21.45	15.00	15.00
Third Party Fund	20.89	13.39	15.03	13.41	14.35
Net Interest Margin	5.63	6.10	6.21	6.39	6.28
NPL	1.80	2.10	2.10	2.30	2.45
Fee Based Income	2.15	2.15	2.15	2.15	2.15
Interest rate	7.5%	7.5%	7.5%	7.5%	7.5%
Inflation	8.5%	7.5%	7.5%	7.5%	7.5%

One key factor needed to take high consideration in Dividend Discount Model and Residual Income is the cost of equity which represents the rate of return that the investors expected for the investment. The cost of equity is utilized as the discount rate to determine the present value of the cash flow.

Table 4.6 Cost of Equity

Risk Free rate	8%
Market Risk Premium	3.5%
Beta (β)	1.26
Cost of equity	**12.4%**

The above cost of equity calculation assumes SBI interest rate at 7.5% as risk free rate (Rf) due to the government bond is considered as risk free security. While the beta value (β) is obtained from regression of Jakarta Composite Index (JCI) and BMRI stock return from 2009-2013. While market risk premium is found from market risk deducted to risk free rate. The market risk is obtained from average rate of return of JCI at 12% from 2009-2013. Having these all numbers, the author found the cost of equity of the bank is at 12.4%.

Residual Income Valuation

The author estimated that bank's book value will grow at CAGR 19% from 2014-2019. Given loan growth and third party fund at 20.50% and 28.9 % respectively FY2014, Book value per share is expected to inch up to Rp4,391. The residual income valuation is as follows:

Table 4.5 Residual Income Valuation

RI Build Up	2013	2014E	2015E	2016E	2017E	2018E
BVPS	3,747	4,391	5,219	6,213	7,462	8,859
Net Income	18,204	20,308	26,128	31,337	39,372	44,068
EPS	780	870	1,120	1,343	1,687	1,889
DPS	199	226	291	349	506	567
Cost of Equity	0.124	0.124	0.124	0.124	0.124	0.124
Residual Income		405	575	695	916	963
Discount factor		0.89	0.79	0.70	0.63	0.56
PV of RI		360.6	455.0	489.5	573.9	536.3

RI Calculation			
Terminal Value		**Valuation**	
Sum of PV Residual Income	2,415.4	BMRI price	8,775
Long term growth rate	4.50%	BVPS	3,747
Cost of equity	12.41%	Implied P/BV	2.3x
Terminal value (TV)	12,170	**BMRI value / share**	**12,943**
PV of TV	6,781	Implied P/TBV	2.9x

Based on residual income valuation, it could be seen that BMRI is fairly valued at Rp12,943 per share implying 2.9x PBV. Given current price of BMRI at Rp,8775, the stock is undervalued with 47% potential upside return. Cost of equity plays important impact on valuation and thereby author conduct value sensitivity based on ROE and cost of equity determinant.

Dividend Discounted Model

Bank Mandiri (BMRI) strives to maintain its stable dividend policy over the years with dividend payout ratio ranges from 16%-32% from the last five years. The company's policy is to give dividend payout at minimum 16% while FY2013 BMRI delivers 26% of its earning to shareholders. Its dividend payout policy tough is subject to the business performance. By projecting stable earning growth of 19.7% on average, the author appreciates the company to deliver 26% -30% payout ratios in coming next five years.

Table 4.6 Dividend Discount Model

DDM Build Up	2013	2014E	2015E	2016E	2017E	2018E
Net Income	18,204	20,308	26,128	31,337	39,372	44,068
Dividends	4,651	5,280	6,793	8,148	11,812	13,220
% growth	89.91	13.52	28.66	19.94	25.64	11.93
% payout	25.55	26.00	0.26	0.26	0.30	0.30
DPS	199.3	226.3	291.1	349.2	506.2	566.6
Discount factor		0.89	0.79	0.70	0.63	0.56
PV of dividends		201	230	246	317	316

DDM Calculation			
Terminal Value		**Valuation**	
Sum of PV Dividend	677.56	BMRI price	8,775
Long term growth rate	8.50%	BVPS	3,747
Cost of equity	12.41%	Implied P/BV	2.3x
Terminal value (TV)	15,723	**BMRI value / share**	**9,438**
PV of TV	8,760	Implied P/TBV	2.5x

The dividend payout is discounted at 12.5% while terminal growth rate of dividend payment is estimated at 8.5% based on earning growth estimate and stable dividend payout policy. The model shows that BMRI worth at Rp9,438 per share implying 2.5x PBV. That said, based on this calculation BMRI is undervalued and there is 7.6% upside return based on current market value of Rp8,775 as March 2014.

Price to Book Value Model

Companies used for comparison in the relative valuation are in the same industry and relatively at the same size as Bank Mandiri. Based on these criteria, the companies used as comparison are PT Bank Central Asia Tbk (BBCA), PT Bank Rakyat Indonesia Tbk (BBRI), PT Bank Negara Indonesia Tbk (BBNI), and PT Bank Danamon Tbk (BDMN). Here are the results of BMRI peer comparison for year end 2013.

Table 4.6 Dividend Discount Model

PBV Valuation	Market Price	BVPS	Profitability			PB Multiple
			ROE	ROA	NIM	
Bank Central Asia (BBCA)	10,600	2,590	28.2	3.8	6.2	4.09
Bank Rakyat Indonesia (BBRI)	9,575	3,209	34.11	5.03	8.55	2.98
Bank Negara Indonesia (BBNI)	4,950	2,552	22.5	3.4	6.1	1.94
Bank Danamon (BDMN)	4,565	3,261	14.5	2.5	9.6	1.40
Bank Mandiri (BMRI)	8,775	3,747	22.5	2.5	5.89	2.34
Median						2.34
Average						2.55
Max						4.09
Min						1.40

Based on the above table, it can bee seen that BBCA has the highest PB multiple at 4.09x followed by BBRI at 2.98 while BDMN stood the lowest PB multiple. The author foresees that BMRI current PBV ratio which stood at 2.34 is still undervalued given average PBV at 2.55 times and company's healthy business performance. Given forecasted BMRI's book value per share at Rp4,391 FY2014 and industry fair PBV ratio of 2.55 x thereby the value of Bank Mandiri should fairly stood at Rp11,202. This value estimated implies 27.7% upside potential for BMRI as current market price (March 3, 2014) of Rp8,775 per share.

Having calculated the intrinsic value of BMRI with different valuation approach, the value of BMRI are Rp12,943, Rp9,438 and Rp11,203 based on residual income, dividend discount model and price to book value respectively. As the result shows that the different valuation approaches yield different valued estimate due to the fact that they have different subjective assumption. However, the value estimate points to the same direction in which the intrinsic value of BMRI is above current market price.

Table 4.7 The Consensus Estimate of BMRI's Value

Valuation Model	Value Estimate
Residual Income (RI)	12,943
Dividend Discount Model (DDM)	9,438
Price to Book Value (PBV)	11,203
Average	**11,194**

The stress of this result is not in the inconsistency of value generated from the valuation method but rather on the catching the relevant information in to the valuation. As it is known that each valuation technique has its own advantages and disadvantages as it is also has potential risk for each valuation method. Cost of equity for example remains the major risk potential for value estimate as a slight increase in interest rate benchmark will have significant impact to the value.

Most of the securities houses analysts issued different intrinsic values for BMRI depending on theirs own assumption and estimates. However, the consensus points to the same result that BMRI is currently undervalued as shown at the following table:

Table 4.8 The Consensus Estimate of BMRI's Value

Securities	Target Price	Rating
Indopremier	12,150	BUY
Credit Suisse	11,700	BUY
UOB Kayhian	11,500	BUY
Kim Eng	11,000	BUY
Daewoo	11,510	BUY
AAA Securities	10,500	BUY
RHB OSK	11,000	BUY
Lauthadana Securindo	10,500	BUY

Source: Respective Companies

As shown above that Indopremier and Credit Suisse generated higher value for BMRI relative to other securities companies. These different results are the products of different assumption and valuation methods employed by the analysts. Indopremier, for example, forecast the earning of the bank to grow at 15% and 19% FY2014-205 respectively while the Credit Suisse, UOB Kayhian and other securities might find that the earning to decelerate below that target point. Thereby, the values generated by those securities are different. Nonetheless, the consensus indicated that BMRI is undervalued and worth buying with average target price at Rp11,200.

5. Conclusion

As the main goal of this study is to determine the intrinsic value of the company and thereby from strategic analysis above revealed that BMRI is significantly undervalued as calculated through three different valuation methods. This finding, however, is subject to company strategic growth, industry and macroeconomic profile that have been evaluated as part of valuation analysis.

In the company analysis part shows that there are three key main points for Bank Mandiri to regain its value going forward. Firstly, robust CASA position which provides the company with relatively low cost of fund. As FY2013, CASA comprises of 65% of total deposits and it is expected to slightly increase cushioned by an increased of deposit growth from its transactional banking capability. Furthermore, BMRI strong liquidity which measured by 85% LDR (loan to deposit ratio) should further ease the company in funding competition for its strong capital and liquidity.

Secondly, its aggressive strategy in micro lending which provides high yield should further strengthen its NIM position. Compared to other banks, BMRI has strong lending capacity to penetrate micro lending segment given strong capital and liquidity position. Thirdly, BMRI's buffer against weak asset quality is among other peers even BMRI has proved that taking higher exposure into commodity sector did not translate into higher NPL. Yet, amidst global weakness in 2013, the NPL in corporate loan segment was still in healthy position of 1.5% NPL.

Meanwhile, in the banking industry has been in tight competition during the last three years given as the economy being more open yet MEA 2015 should further increase competition level of banking industry as well as increasing market range. In the macroeconomic perspective, tightening monetary policy, improved current account deficit underpinned by declining import, export recovery should back the growth of economy in the country. The author expects that economic reformation to gain traction following upcoming presidential election in July 9, 2014.

Lastly, three different valuation approaches namely residual income (RI) method, dividend discount model (DDM) and price to book value (PBV) all indicated that BMRI is undervalued. The average intrinsic value of BMRI from three valuation approach points at Rp11,194 per share which implies 27% upside potential from current market price of Rp8,775. This estimate, however, is period sensitive and subject to industry and macro economic profile and thus might be translated as there is more upside potential return for long term investor.

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