



**PAK Publishing Group**  
Growing Knowledge for Future

Proceedings Book of ICEFMO, 2013, Malaysia  
Handbook on the Economic, Finance and Management Outlooks  
ISBN: 978-969-9347-14-6

# **Profitability of Investment in Government-Sponsored Unit Trust Funds (Asb Unit Trust Fund) Through Term Loan Facility: A Backtesting Approach**

**Imran Md Jelas**

Fakulti Sains Komputer & Matematik, Universiti Teknologi MARA (Perak) Kampus Tapah,  
Perak Darul Ridzuan, Malaysia. Email: [imran499@perak.uitm.edu.my](mailto:imran499@perak.uitm.edu.my)

**Abu Bakar Ahmad**

Fakulti Sains Komputer & Matematik, Universiti Teknologi MARA (Perak) Kampus Tapah,  
Perak Darul Ridzuan, Malaysia Email: [abubakar\\_ahmad@perak.uitm.edu.my](mailto:abubakar_ahmad@perak.uitm.edu.my)

## **Abstract**

This study aims to determine the profitability of investment in government-sponsored unit trust funds specifically in Amanah Saham Bumiputera (ASB) unit trust fund through term loan facility. Barring the ability to foresee the future, the best option to study the return of investment is to examine based on the unit trust track record. Using backtesting technique, a series of historical data was analyzed to determine its profit or lost over the period of time. For this purpose, historical data of Base Lending Rate (BLR), Income Distribution Rate (IDR) and Annual Bonus Rate (ABR) were gathered for a 20 years period, which is from January 1993 until December 2012. In this study, the return of investment was analyzed for a loan principal of RM205,000.00 of which RM200,000.00 was for the initial investment and the balance RM5,000.00 was for insurance purposes. The loan tenure considered was set at 20 years. Monthly installment was set at a minimum of RM1,350.00. For the first year of inception, the monthly installment will be self funded. While for the rest of the tenure, the monthly installment will be borne by yearly income distribution made available from the initial investment. Any excess from yearly income distribution after deduction of monthly installment will be reinvested to generate accumulated cash profit. At the end of the loan tenure, even by consistent monthly installment repayment there was still RM50,218.42 short towards full repayment of loan principal. However, there was an accumulated cash profit of RM219,053.37. Using the accumulated cash profit to reconcile the remaining outstanding amount, a positive accumulated net cash profit of RM168,834.95 was achieved. The total of the accumulated net cash profit inclusive of the initial investment after 20 years period is at RM368,834.95. Given the accumulated monthly installment during the first year totaled RM16,200.00, the final return of investment is RM352,634.95. This study concluded that investment in government-sponsored unit trust funds specifically in ASB unit trust

fund, through term loan facility or leverage, an increase of 16.65% per annum can be realized on the profitably of wealth.

**Key words:** Return of investment, government-sponsored unit trust, term loan facility, backtest.

## **1. Introduction**

“Past performance of the Fund is not an indication of its future performance”. This cautionary advice occurred at least three times in the Annual Report 2012 of the unit trust funds of Amanah Saham Nasional Berhad dated 30 June 2012 (ASNB, 2012). It is easy to understand why this advice must be made known to investor due to the existence of risks in any form of investments, predictable yet uncertain. Investments in the unit trust funds too are exposed to fund management risk, inflation risk and purchasing power risk.

However, (Graham et al., 2003) emphasized that past performance is useful in calculating the value of investment only so far as it is indicative of what is to come in the future. A commentary later made by Jason Zweig reminding investors that investing based purely on past performance is one of the *stupidest* things an investor can do (Graham et al., 2003). Are there than any known mechanisms that exist in determining if an investment are worth to be invested. Jason Zweig later added that in the financial world, luck is more important than skill (Graham et al., 2003). Are we then going to invest purely on luck?

Jason Zweig proposed a method known as Two-Part Appraisal Process (Graham et al., 2003). This method analyzed past performance value based solely on past record and finally a modification on the past performance value were made based on new conditions expected for the future.

This study focused on the initial process in method proposed by Jason Zweig. Barring the ability to foresee the future, the best option to study the return of investment is to examine based on past performance. The backtesting technique used series of historical data to analyze profit or lost over period of time (Kumiega et al., 2008).

At present, there are various types of investment product. The most common investment product are shares, equity funds, bond funds, building loan contract, endowment life insurance, bank savings book, federal treasury notes (Sachse et al., 2012). Out of all of these investment products, (Graham et al., 2003) praised index fund, a type of mutual fund as the best for individual investors. Warren Buffet, a known investor, concurred with Benjamin Graham. In Malaysia, the term mutual fund is synonymous with and known as unit trust due to the ownership of the fund is divided into units of entitlement (Yahaya et al., 2009).

Another cautionary advice made known to investor is “do not borrow to invest” (Graham et al., 2003). Investing with borrowed money is also known as leveraging. Investment with borrowed money is riskier as compared to a self funded investment. However, borrowing to invest in any investment product can be an effective way to increase the return of investment, as long as the return of investment is higher than the borrowing costs.

Thus, the purpose of this study is to answer this main question: Is it profitable to leverage in order to invest in unit trust funds, specifically looking into the return of investment in government-sponsored unit trust fund using loan facility.

## **2. Literature Review**

Unit trust funds in Malaysia are similar to mutual funds in the United States of America (Abdullah et al., 2006). The main difference is in their legal structure where by mutual fund is an investment company that issues redeemable shares while a unit trust, which is not a company, but a trust, issues units instead of shares.

The unit trust industry in Malaysia was first established by British investors in 1959 with the introduction of the Malayan Unit Trust Ltd (Yahaya et al., 2009). Unit trust funds in Malaysia can be divided into two categories. Government-sponsored funds and the others are private funds (Yahaya et al., 2009). In the year 2000, there were a total of 29 government sponsored funds and 73 private funds that can be identified from the Malaysian Unit Trust Directory 2000 (Abdullah et al., 2006). The

advent of government participation in the unit trust industry has led to a significant development in the unit trust industry. Unit trust funds have become the long-term investment vehicle of choice of many investors. By 2010, the total unit trust funds managed by licensed fund management companies in Malaysia rose to RM227.9 billion (Choong et al., 2012).

The major growth in the history of the industry marked when the Amanah Saham Nasional Berhad (ASNB) was launched by Permodalan Nasional Berhad (PNB) in 1981. ASNB is currently responsible in managing eleven types of investment schemes. They are Sekim Amanah Saham Nasional (ASN), Amanah Saham Nasional 2 (ASN2), Saham Nasional 3 Imbang (ASN3), Amanah Saham Gemilang – Education (ASG-Education), Amanah Saham Gemilang – Health (ASG-Health), Amanah Saham Gemilang – Retirement (ASG-Retirement), Amanah Saham Bumiputera (ASB), Amanah Saham Wawasan 2020 (ASW 2020), Amanah Saham Malaysia (ASM), Amanah Saham Didik (ASD) and Amanah Saham 1Malaysia (AS 1Malaysia).

**Table-1.** ASNB Products and Income Distribution Rate for 2010 until 2012<sup>1</sup>

<b>ASNB Product</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
ASN	6.00	6.05	6.30
ASN2	5.50	6.50	7.10
ASN3	6.00	6.00	6.30
ASG-Education	5.60	7.00	7.10
ASG-Health	6.10	7.10	7.20
ASG-Retirement	5.10	7.05	7.30
ASB	7.50	7.65	7.75
ASW 2020	6.35	6.50	6.60
ASM	6.37	6.50	6.50
ASD	6.50	6.60	6.80
AS 1Malaysia	6.38	6.50	6.60

Table 1 shows the ASNB's products and income distribution rate from 2010 until 2012. From the table, among the products available under ASNB, ASB provided the highest income distribution rate. Based on Bank Negara Malaysia (BNM), there are 27 registered commercial banks in Malaysia (BNM, 2013). From this list, 19 are foreign banks while the 8 remainders are local banks. Only 3 out of 8 local commercial banks provide loan facility for private investor to invest in ASB scheme namely CIMB Bank Berhad (CIMB), RHB Bank Berhad (RHB) and Malayan Banking Berhad (MAYBANK).

**Table-2.** Local Commercial Banks in Malaysia that provide Loan Facility to finance the purchase of ASB unit trust fund<sup>2</sup>

<b>Local Commercial Banks</b>	<b>Loan Facility to finance the purchase of ASB units</b>
Affin Bank Berhad	Not Available
Alliance Bank Malaysia Berhad	Not Available
AmBank (M) Berhad	Not Available
CIMB Bank Berhad	Conventional
Hong Leong Bank Berhad	Not Available
Malayan Banking Berhad	Conventional and Islamic
Public Bank Berhad	Not Available
RHB Bank Berhad	Conventional

Table 2 shows the complete list of local commercial banks in Malaysia. Based from this table, MAYBANK provided both conventional and Islamic loan facility, while CIMB and RHB only provide conventional loan facility to finance the purchase of ASB units. It is recommended for private

<sup>1</sup> Data for ASNB products and income distribution rate were gathered from ASNB website (<http://www.asnb.com.my>) available on the WWW, September 2013.

<sup>2</sup> List of local commercial banks in Malaysia were gathered from BNM website (<http://www.bnm.com.my>), available on the WWW, September 2013. While the list of local commercial banks that provide loan facility to finance the purchase of ASB unit trust fund were gathered from respective local commercial bank.

investors using leverage to use these dedicated loan facility instead of personal borrowing to finance the purchase of ASB units as ASB loan financing facility provides extra intangible feature of benefit that is the insurance coverage. Thus, in the event of accidental death, beneficiary then will received the full amount of available cash in the ASB unit trust fund account.

In this study, the backtesting technique is used to investigate return of investment in unit trust fund. Barring the ability to foresee the future, the best option to study return of investment is to examine based on the unit trust track record. The backtesting technique used series of historical data to analyze profit or lost over period of time. The backtesting technique is widely used by financial professionals to test investment strategies. In backtesting technique, an assumption is made that there are correlation between a past and future performance.

The backtesting technique has been extensively used in various fields. In shares and stocks market, backtesting technique has been used to calculate distribution of return (Billio et al., 2000). In equity funds, backtesting technique has been used to forecast the trading risk (Wong, 2008). In bond funds, backtesting technique is used to estimate and forecast expected bond returns (Audrino et al., 2006). In insurance, backtesting technique is used to simulate and analyze the impact of the insurance guarantees on the portfolio performance (Zymler et al., 2006). Backtesting technique is commonly used in common investment product, it has also been used to forecast and measure the oil price fluctuation (Huang et al., 2009). As such, it is concluded that backtesting technique can be used to measure the profitability of unit trust fund investment through leveraging or using loan facilities.

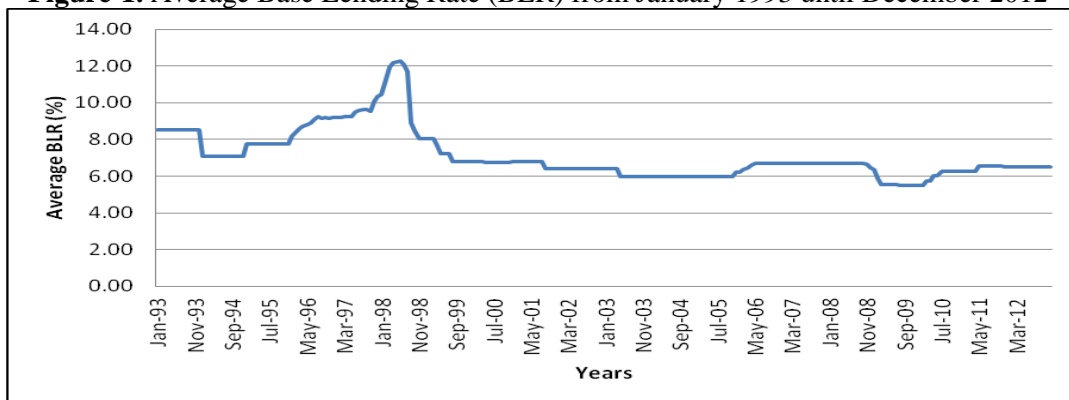
### 3. Methodology

Smart investments do not depend on luck alone. It is a result of careful planning. Investing in government-sponsored unit trust funds specifically in ASB unit trust fund, through leverage or term loan facility, can be a valuable form of investment. However, a considerable thought and careful planning are required. Two major components need to be considered. First, the monthly installment to service loan principal and interest rate. Secondly, the yearly income generated from annual income distribution and annual bonus distribution.

#### 3.1. Base Lending Rate

Under the new framework, each banking institution announced its own base lending rate (BLR) based on its cost structure and business strategies. Banking institutions are no longer subjected to the maximum spread of 2.5 percentage points above BLR. Figure 1 shows the historical data of average BLR for the past 20 year’s period, which is from January 1993 until December 2012.

**Figure-1.** Average Base Lending Rate (BLR) from January 1993 until December 2012<sup>3</sup>



#### 3.2. Fix Spread

The fixed spread is determined during loan signing and remains constant over the life span of the term loan. Fixed spread means banking institution fixed spread for the loan principal and later for

<sup>3</sup> Average BLR where gathered based on Bank Negara Malaysia (BNM) Annual Report. The annual reports from 1997 until 2012 were from BNM website (<http://www.bnm.com.my>) available on the WWW, September 2013. Previous year annual reports can be purchased from BNM.

outstanding loan amount. Current fixed spread set by banking institution for term loan facility to finance investment in ASB unit trust fund is fixed at minus 1.65%.

### 3.3. Interest Rate

Interest rate (IR) is the amount charged by the lender to the borrower for borrowing a sum of money expressed as percentage of loan principal and later of outstanding loan amount. The interest rate is based on BLR plus or minus fixed spread. Daily interest is calculated based on interest rate multiply by outstanding loan amount divide by 365 days. By using equation (1), the daily interest is calculated.

$$\text{DailyInterest} = \frac{\text{IR} \times \text{OutstandingLoanAmount}}{365} \quad (1)$$

where  $\text{IR} = \text{BLR} \pm \text{FixSpread}$

### 3.4. Annual Income Distribution

The income distribution rate (IDR) for ASB will be announced by PNB at the end of each financial year. Annual income distribution (AID) is calculated based on the average of monthly minimum amount held by unit holder within one year. Equation (2) shows the formula used to calculate annual income distribution.

$$\text{AID} = \frac{\sum_{m=1}^{12} \text{MonthlyMinimum}_m}{12} \times \text{IDR} \quad (2)$$

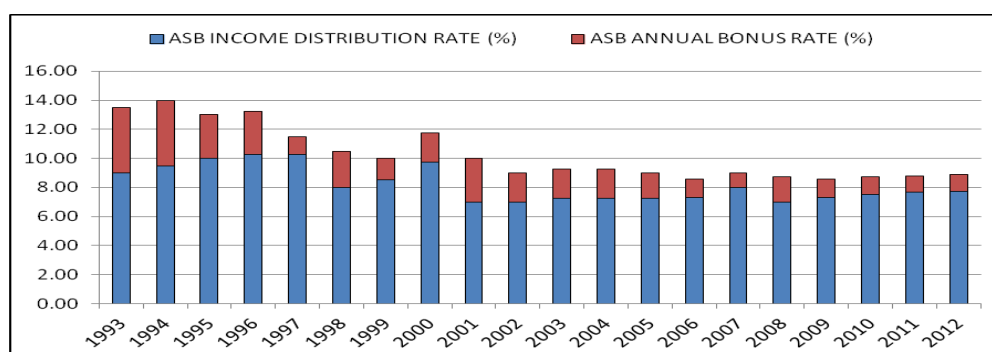
### 3.5. Annual Bonus Distribution

The annual bonus distribution (ABD) is discretionary by the PNB. Therefore, if annual bonus is to be made available, the annual bonus rate (ABR) will be announced by PNB at the end of each financial year together with income distribution rate. Annual bonus distributions are paid by PNB to unit holder based on the average of monthly minimum amount held by unit holder within ten year. Equation (3) shows the formula used to calculate annual bonus distribution.

$$\text{ABD} = \frac{\sum_{m=1}^{120} \text{monthlyMinimum}_m}{120} \times \text{ABR} \quad (3)$$

To summarize, Figure 2 shows income distribution rate and annual bonus rate for ASB from 1993 until 2012.

**Figure-2.** Income Distribution Rate (IDR) and Annual Bonus Rate (ABR) for Amanah Saham Bumiputera (ASB) unit trust fund from 1993 until 2012<sup>4</sup>



<sup>4</sup> Data were gathered based on ASNB Master Prospectus 2013 from 2003 until 2012 from ASNB website (<http://www.asnb.com.my>) available on the WWW, September 2013. Data from 2002 until 1993 were gathered from ASNB Master Prospectus 2003.

### 3.6. Case Study Illustration

In this study, the return of investment was analyzed for a loan principal of RM205,000.00 where RM200,000.00 was for initial investment and the balance RM5,000.00 was for insurance purposes. The loan tenure considered was set at 20 years. Monthly installment was set at a minimum of RM1,350.00. Only for the first year, the monthly installment will be self funded. While for the rest of the tenure, the monthly installment will be borne by yearly income distribution generated from initial investment. Any excess from yearly income distribution after deduction of monthly installment will be reinvest to generate additional accumulated cash profit.

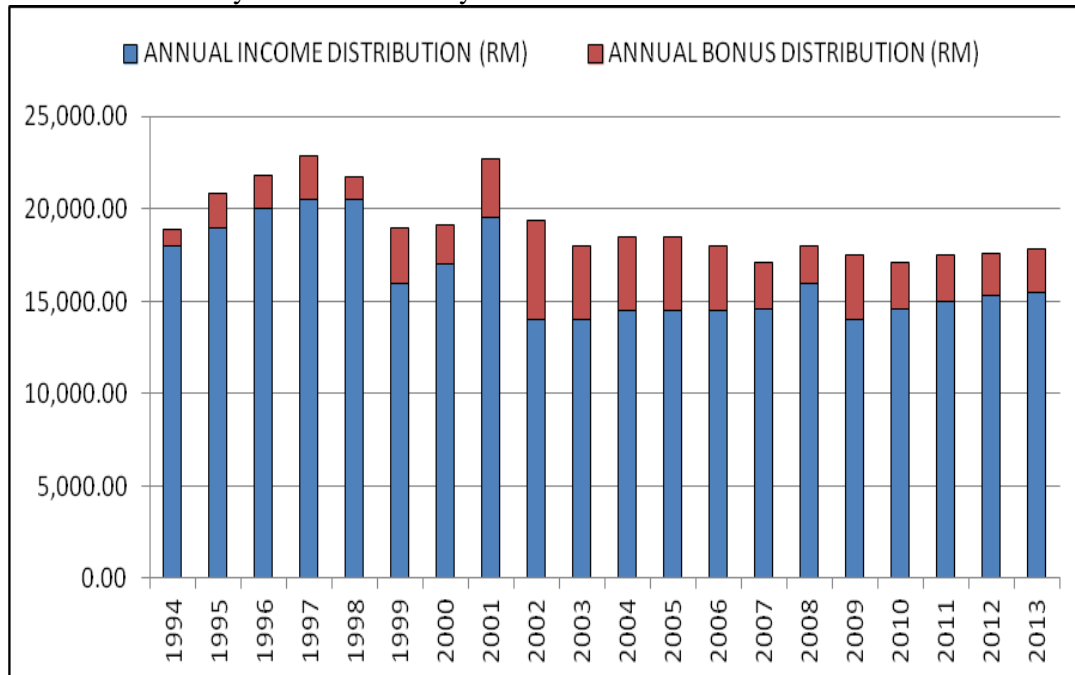
## 4. Implementation

The initial investment of RM200,000.00 was used to purchase certificate for ASB unit trust fund. At the end of every financial year, investor will receive yearly income distribution from annual income distribution and annual bonus distribution. Most of this yearly income distribution will be used to pay off the monthly installment. Meanwhile, any excess from yearly income distribution after deduction of monthly installment will be reinvested to generate additional accumulated cash profit.

### 4.1. Yearly Income Distribution

Yearly income distribution income is sum of annual income distribution and annual bonus distribution. Since the income distribution rate and annual bonus rate is announced by PNB at the end of each financial year, the yearly income distribution will only be credited to ASB unit holder on January of next financial year. Figure 3 shows the yearly income distribution based in annual income distribution and annual bonus distribution.

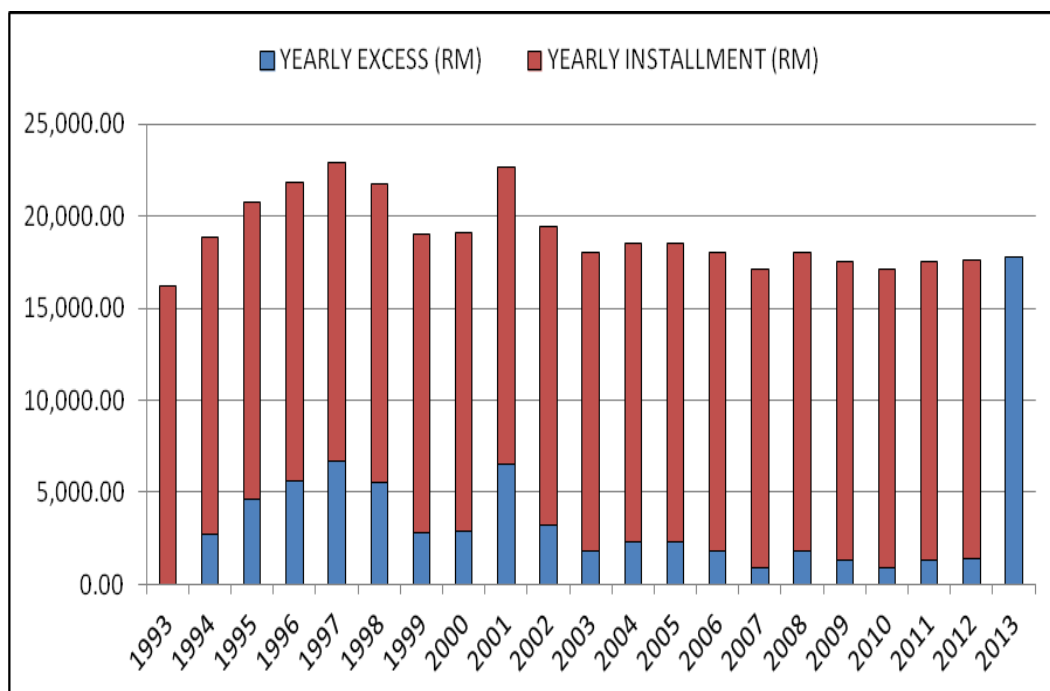
**Figure-3.** Yearly Income Distribution from Annual Income Distribution and Annual Bonus Distribution from January 1994 until January 2013



### 4.2. Excess

In this illustration, monthly installment was set at a minimum of RM1,350.00. Therefore, a total payment of RM16,200.00 was paid every year to service loan principal and interest. Only for the first year, the monthly installment will be self funded. While for the rest of the tenure, the monthly installment will be borne by yearly income distribution generated from initial investment. Any excess from yearly income distribution after deduction of monthly installment will be reinvest to generate additional accumulated cash profit. Figure 4 shows the yearly installment made and balance as yearly excess.

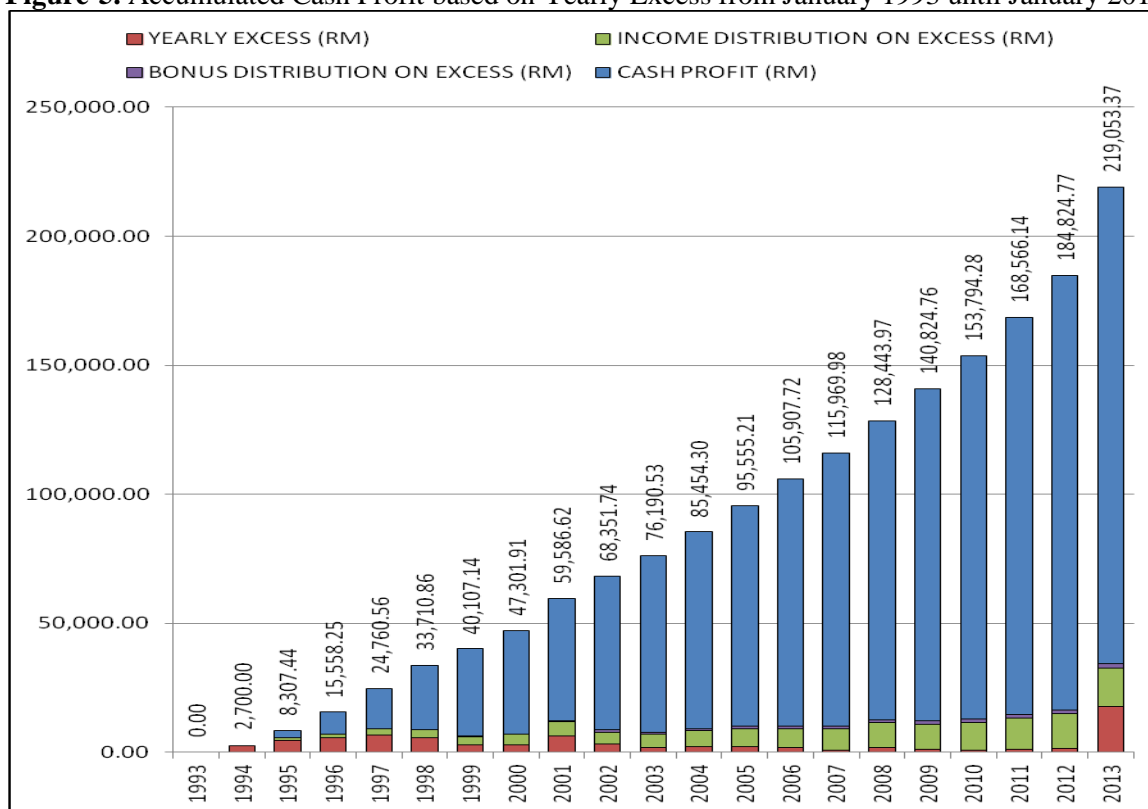
**Figure-4.** Yearly Installment and Yearly Excess from Yearly Income Distribution from 1993 until 2013



### 4.3. Accumulated Cash Profit

Figure 5 shows the accumulated cash profit from yearly excess of yearly income distribution. Since yearly income distribution is compounded, the announced income distribution rate and annual bonus rate announced by PNB also affected and amplified the accumulated cash profit

**Figure-5.** Accumulated Cash Profit based on Yearly Excess from January 1993 until January 2013

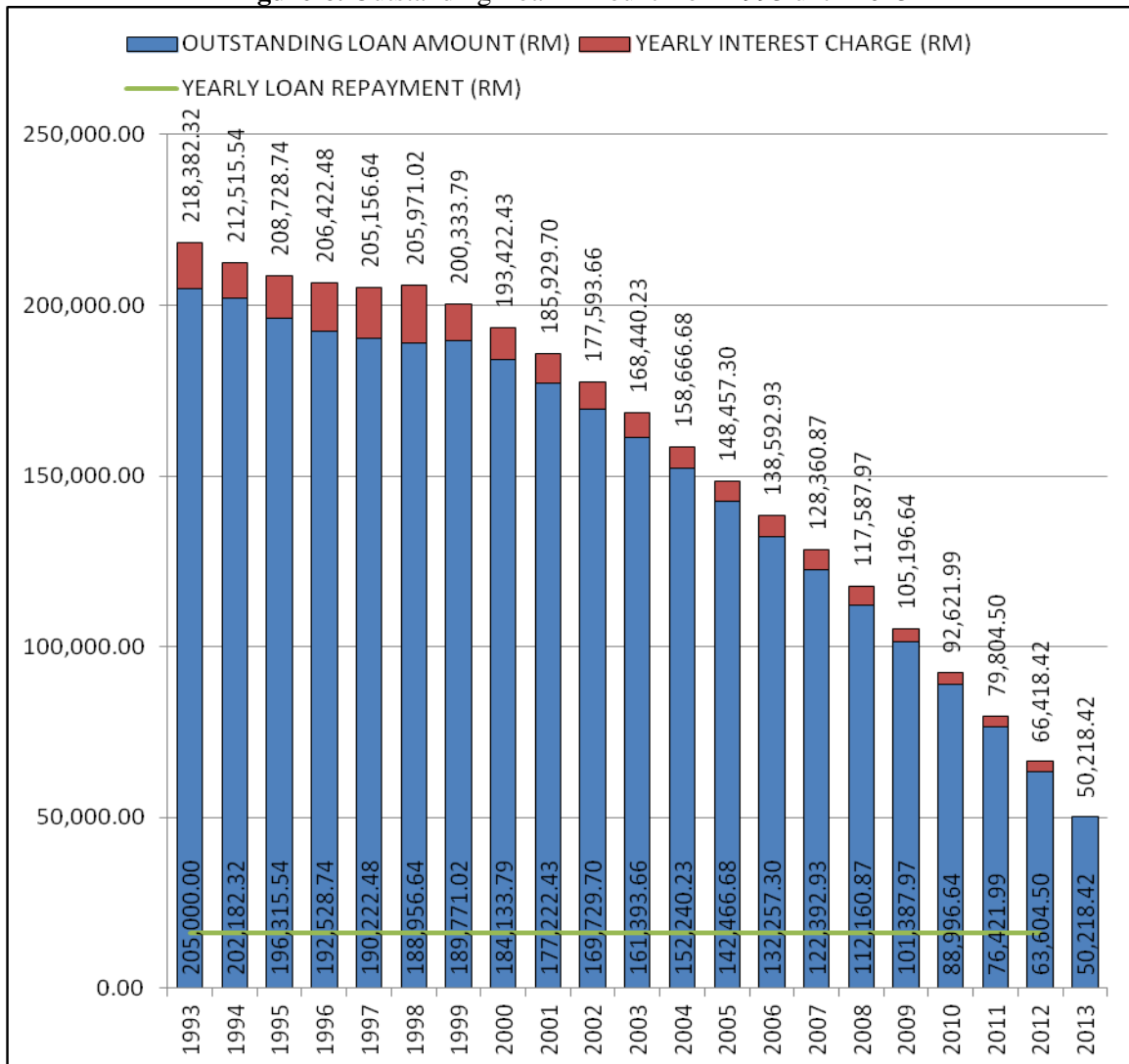


## 5. Result

Figure 6 shows in details concerning loan principal reduction and the effect of yearly interest charge and yearly loan repayment. The first ten years of yearly loan repayment was spend on servicing the yearly interest charge instead of settling the loan principal. Thus, no significant reduction on loan principal is visible. However, a momentous loan principal reduction was displayed later starting from early 2004 until end of 2012.

At the end of the loan tenure, even if monthly installment were made on consistent basis there was still RM50,218.42 short towards full repayment of loan principal. However, there was an accumulated cash profit of RM219,053.37. Using the accumulated cash profit to reconcile the remaining amount owed, one still had a positive net cash profit of RM168,834.95. The sum of net cash profit and initial investment after 20 years period is at RM368,834.95. Since the first year monthly installment was self funded to the total of RM16,200.00, the final return of investment is RM352,634.95.

**Figure-6.** Outstanding Loan Amount from 1993 until 2013



## 6. Discussion

Using the accumulated cash profit to reconcile the remaining amount owed, a positive net cash profit of RM168,834.95 is maintained. The sum of net cash profit and initial investment after 20 years period is at RM368,834.95. Since the monthly installment of loan repayment for the first year was self funded to the total of RM16,200.00, the final return of investment is RM352,634.95.



$$\text{RateOfReturn} = \sqrt[\text{loanTenure}]{\frac{\text{ReturnOfInvestment}}{\text{SelfFundedMonthlyInstallment}}} - 1 \quad (4)$$

By using equation (4), the rate of return on investment was calculated. This study concluded that if one was to invest in a government-sponsored unit trust through loan facility, profitability of wealth may increase at the rate of 16.65% per annum.

## 7. Conclusion

In this study, we observe profitably of investment in government-sponsored unit trust funds specifically in Amanah Saham Bumiputera (ASB) unit trust fund through term loan facility in Malaysia. The investment environment is still conducive given the government support towards higher saving by its citizen. The unit trust fund is by far the simplest method of investment by individual especially using the term loan facility structure available by various banks. The leveraging structure that is less than the income distribution payout ensures a positive net profit will be realized on the investment.

Assessing the return of investment using the backtesting technique has indicated that the unit trust investment under ASB unit trust fund has so far generated a sizeable profit. The compounded interest too had supports the return of investment to the level identified over the period.

The compounding impact of the income distribution calls for only a year of self funding at RM16,200.00 to provide a RM352,634.95 returns on the investment over a period of 20 years which is a staggering 16.65% rate of return per annum. Such opportunity should be considered highly by individuals who are considering making some form of investment.

Leveraging at current 4.95% and with the expected return given by the ASB unit trust fund at an average of 7.11% indicates that the system will generate positive return on the investment. Historical data has indicated that the average combination of income distribution rate and annual bonus rate of 10.27% has exceeded average leverage interest charges of 7.11% for the last 20 years, with the highest ever combination of income distribution rate and annual bonus rate at 14.00% seen in 1994.

## References

- Abdullah. N. A. H. and Chyuan W. W., 2006. Unit Trust Fund's Initial Service Charge and Its Determinants. *Asian Academy of Management Journal*, Vol. 11, No. 2: 19–33.
- Abdullah. N. A. and Abdullah. N. A. H., 2009. The Performance of Malaysian Unit Trusts Investing In Domestic versus International Markets. *Asian Academy of Management Journal of Accounting and Finance*, Vol. 5, No. 2: 77–100.
- Amanah Saham Nasional Berhad (ASNB), Amanah Saham Bumiputera (ASB) Annual Report, 2012. Kuala Lumpur, Malaysia.
- Amanah Saham Nasional Berhad (ASNB), Master Prospectus, 2013. Kuala Lumpur, Malaysia.
- Audrino. F. and Barone-Adesi. G., 2006. A dynamic model of expected bond returns: A functional gradient descent approach. *Computational Statistics & Data Analysis*, Volume 51, Issue 4: 2267–2277.
- Bank Negara Malaysia (BNM), 2013. List of Licensed Banking Institutions in Malaysia, Available on the WWW, September 2013. [http:// www.bnm.gov.my](http://www.bnm.gov.my)
- Billio. M. and Pelizzon. L., 2000. Value-at-risk: A multivariate switching regime approach. *Journal of Empirical Finance*, 7: 531–554.
- Choong. Y. V., Thim. C. K., Fie. D. Y. G. and Ng. H. H., 2012. Development and Performance Trends of Malaysian Unit Trusts. *Journal of Modern Accounting and Auditing*, Vol. 8, No. 12: 1804-1813.
- Graham. B., Zweig. J. and Buffett. W. E., 2003. *The Intelligent Investor: The Definitive Book on Value Investing (Revised Edition)*. HarperCollins Publishers.
- Huang. D., Yu. B., Fabozzi. F. J. and Fukushima. M., 2009. CAViaR-based forecast for oil price risk. *Energy Economics*, Volume 31, Issue 4: 511-518.

- Kumiega, A. and Van Vliet B., 2008. *Quality Money Management (Financial Market Technology)*. Academic Press.
- Sachse. K., Jungermann. H. and Belting. J. M., 2012. Investment risk – The perspective of individual investors. *Journal of Economic Psychology*, Volume 33, Issue 3: 437-447.
- Wong. W. K., 2008. Backtesting trading risk of commercial banks using expected shortfall. *Journal of Banking & Finance*, Volume 32, Issue 7: 1404–1415.
- Yahaya. A., Yahaya. N., Mohammad. R. A., Ramli. J., Boon. Y., Abd Ghafar. M. N. and Zakariya. Z., 2009. National Unit Trust Berhad (NUTB) Promotional Strategies for Bumiputera in Malaysia. *Journal of Scientific Research*, Issue 5: 33-49.
- Yahaya. A., Yahaya. N., Ramli. J., Boon. Y. and Abd Ghafar. M. N., 2009. Amanah Saham National Berhad's Promotional Strategies and its Relationship with Customer Motivation. *Journal of Social Sciences* 5(4): 283-291.
- Zymler. S., Rustem. B. and Kuhn. D., 2011. Robust portfolio optimization with derivative insurance guarantees. *European Journal of Operational Research*, Volume 210, Issue 2: 410–424.