



Equity Valuation Project

Data: May 1st 2005

Group:

David Estella

Victor Lee

Xin Zhao

Companies:

Apple Computer (AAPL)

Actividades de Construcción y Servicios (ACS)

Alliance Capital Management Holdings (AC)

<i>Company</i>	<i>Price</i>	<i>DCF Valuation</i>		<i>Relative Valuation</i>		<i>Recommendation</i>
		<i>Model Used</i>	<i>Value</i>	<i>Multiple Used</i>	<i>Value</i>	
Alliance Capital Holdings	\$44.94	DDM2	\$39.22	PBV	\$40.82	Sell (-13%)
ACS	€18.87	FCFF2	€19.42	PBV	€ 16.01	Hold (+3%)
Apple	\$36.06	FCFF3	\$38.92	PBV	\$32.90	Hold (+8%)

1. APPLE COMPUTER, INC.

1.1. Company Overview

Apple Computer, Inc (AAPL), based in Cupertino California, manufactures laptop and desktop computers which utilizes the company's proprietary operating system (Mac OS). Their market share of consumer PC business has been in decline since the mid nineties. Just prior to Microsoft releasing Windows 95, Apple had 8% of the PC market but that has fallen to around 2% in recent years. The return of Co-founder Steve Jobs as CEO has seen a refocused Apple launching a string of innovative products including the ipod music player, the revised powerbook and ibook laptop series, the powermac and the mac mini desktop series. In the latest quarter ipod digital music player sales represent about 40% of total revenue, the ipod and itunes software is compatible with both mac and windows platform. The popularity of the ipod (58% market share of music players) has let to a "halo effect" where windows users are converting to Apple computers (yoy mac sales growth 27%). One only has to visit any of the 102 company owned stores to understand first hand the current interest in Apple products, the company is reporting average weekly turnover of 9800 visitors per store. PC market share in 2005 rebounded to 3% and the company just reported a record second quarter both in terms of revenue and net income.

1.2. DCF Valuation

We implemented a three-stage FCFE discount model since Apple is experiencing abnormal growth driven by ipod. The three-stage model is suitable for firms with supernormal high growth period before growth tapers off and the firm finally enters stable growth.

The assumptions used to build the DCF model are:

ASSUMPTIONS	High Growth	Transition	Stable Growth
Length of growth period (year)	5	4	10 to ∞
Growth Rate (%)	21.0	21 \Rightarrow 4.27	4.27
Debt Ratio (%)	1.77	1.77	5.00
Beta	2.0	2.0	1.2
Riskfree Rate (%)	4.27	4.27	4.27
Risk Premium (%)	4.00	4.0	4.00
After Tax Cost of Debt (%)	2.97	2.97 \Rightarrow 3.25	3.25
Tax Rate (%)	35	35	35
Return on Capital (%)	15.06	Various	8.83
Cost of Equity (%)	12.30	12.30 \Rightarrow 9.07	9.07
Cost of Capital (%)	12.13	12.15 \Rightarrow 8.83	8.83

Based on these inputs the valuation is as follows:

Firm Value \$26,473 million
Equity Value \$33,006 million
Value/Share \$38.92
Current Market Price \$36.06

Therefore Apple stock is slightly undervalued (8%) based on our intrinsic valuation.

Sensitivity Analysis

The key driver for Apple is the ability to sustain a high sales growth rate in the next five years. We revalued Apple based on various sales growth assumptions for the next five years and these are the values.

Growth Rate Years 1 – 5	10%	15%	22.1% (base case)	25%	30%
Value per share	\$23.02	\$28.44	\$38.92	\$44.36	\$55.69

1.3. Relative Valuation

We collected the latest data from Bloomberg and we used fifteen companies as comparables to construct the industry regression. We chose comparables based on product lines and comparables came from the computing industry, consumer electronics and technology. The Regression was completed with PBV ratios. The average PBV for the comparables of 2.91 implies a value of \$22.99 for Apple. However it does not take into account ROE of each firm, therefore we shouldn't put too much weight on this.

Regression Analysis: PBV versus ROE

The regression equation is

$$PBV = 1.025 + 0.215 * ROE \quad (R \text{ square} = 0.677)$$

$$ROE = 14.6\%$$

$$PBV = 4.16x$$

Based on this regression, Apple's predicted PBV is 4.16x resulting in a predicted stock price of \$32.90.

Based on current market price of \$36.06, Apple is 9.6% overvalued relative to how the market is pricing comparable stocks.

Market Regression valuation

We could also value Apple against the market as a whole. The market regression equation for US stocks (Damodaran, January 2005) is:

$$\text{PBV} = 0.202 \text{ ROE} - 0.297 \text{ Beta} + 0.0984 \text{ g} - 0.0135 \text{ Payout} = 4.43$$

$$\text{BV} = 6386\text{m}$$

$$\begin{aligned} \text{Implied equity value} &= 4.43 \times 6386 \\ &= 28,299\text{m} \end{aligned}$$

$$\text{Equity value per share} = \$35.02$$

Based on market regression and price of \$36.06, Apple is slightly (3%) overvalued.

1.4. Valuing financial flexibility at Apple

Management has a standing policy of not incurring debt; it represents 1.77% of capital structure. We thought it would be interesting to use the BS option pricing model to value financial flexibility.

S	K	T	σ^2	ROC	COC	Optimal COC
5.28%	1.13%	1 year	0.6424	15.06%	12.13%	11.05%

The value of flexibility is calculated as 1.01% of firm value. Since the cost of maintaining flexibility is 1.03% (12.13% - 11.05%), current capital structure is about value neutral. If debt ratio moves slightly from 1.77% to 10%, Cost of capital would fall to 11.8% and there would be value in maintaining flexibility (1.01% - [11.8%-11.05%]).

Debt Ratio	Cost of Capital
1.77%	12.13%
10%	11.80%
15%	11.61%
20%	11.46%
25%	11.30%
30%	11.12%
35%	11.05%
40%	11.15%
45%	11.45%
50%	12.67%

1.5. Conclusion

Current Price	\$36.06
DCF Low	\$28.44
DCF Base Case	\$38.92
DCF High	\$44.36
PBV regression Industry	\$32.90
PBV regression Market	\$35.02

We place more weight on the DCF valuation than the regressions since there is ambiguity associated with choosing comparables. Also the market regression is based on January 2005 data and may be unsuitable. We think in general DCF valuations are more robust, incorporating fundamental assessment of value, we would prefer to rely on our own intrinsic valuation rather than the market's assessment.

Recommendation: Hold. Based on our DCF valuation of \$38.92 we are comfortable holding Apple stock at the current price of \$36.06.

2. ACS, ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS

2.1. Company Overview

In 1997 the General Shareholders' Meetings of OCP Construcciones, S.A. and Ginés Navarro Construcciones, S.A. approved the merger of the two companies. This gave rise to ACS, Actividades de Construcción y Servicios S.A, which is now a diversified group present in construction, services, concessions and telecommunications. In construction it is one of the most consolidated companies in Spain. Public works projects account for half of ACS's sales in the construction business, and its main clients are general government and large industrial groups. The investment strategy of Grupo ACS focuses on Spain, Portugal, Chile and Morocco. Services are the key instrument of the group's diversification. Here its activities are structured around services, communications and energy, environmental services and transport. In the concessions business, its main activities are transport infrastructure projects, such as motorways, railroads and airports, and energy and distribution projects, such as wind-power stations and networks for the transport and distribution of energy. The group is an active player in the field of telecommunications, internet and contents. Particularly noteworthy is its participation in the Broadnet and Xfera consortia.

2.2. DCF Valuation

We implemented the two-stage FCFF discount model since it is best suited for firms with shifting leverage and growing at a moderate rate.

The assumptions used to build the DCF model are:

ASSUMPTIONS	High Growth	Stable Growth
Length of growth period (year)	5	∞
Growth Rate (%)	16.29%	2%
Debt Ratio (%)	31.37%	32.30%
Beta	1.10	1
Riskfree Rate (%)	4.54%	4.54%
Risk Premium (%)	4.85%	4.85%
BT Cost of Debt (%)	5.04%	5.04%
Tax Rate (%)	35%	35%
Return on Capital (%)	10.19%	7.42%
Cost of Equity (%)	9.87%	9.39%
Cost of Capital (%)	7.8%	7.42%

Based on these inputs the valuation was as follows

EBIT	€ 649.00 million
EV	€ 6,854.08 million
FV	€ 9,897.28 million
Value per share	€ 19.42
Current Market Price	€ 18.87

The key drivers for ACS are the length of the growth period and stable growth rate Growth Period. The following exhibit summarizes the DCF valuation considering different values for these drivers:

SENSITIVITY ANALYSIS	Length growth period= 3Y	Length growth period= 5Y	Length growth period= 10Y
Stable Growth = 1%	€ 18.25	€ 19.23	€ 22.21
Stable Growth = 2%	€ 18.43	€ 19.42	€ 22.45
Stable Growth = 3%	€ 18.60	€ 19.62	€ 22.69

2.3. Relative Valuation

13 companies were used as comparables. Since ACS derives a majority of its revenue from Spain the comparables used were primarily Spanish firms (also 3 similar European firms). The main percentage of revenues of ACS is in the building / heavy construction and real estate industries. So we use companies of these industries to compute the regression. The firms were further selected based on size and growth to best reflect ACS's value. Regressions were completed with both PE and PBV ratios. The regression vs. PBV produced the highest R-squared.

Average PBV of the industry

The average value of the PBV for 13 comparable companies is 2.204. Considering this PBV, the expected value of the stock is € 13.14. Since this comparison does not consider ROE, we need to look at a regression of PBV vs ROE.

Regression Analysis: PBV versus ROE (Industry)

The regression equation is

$$PBV = 1.486 + 0.050 \times ROE$$

With R square = 0.435

Based on this regression, ACS's predicted PBV is 2.686 resulting in a predicted stock price of € 16.01. Considering the current stock price is € 18.87. ACS is overvalued according to the relative valuation of the industry.

Relative Valuation (Market)

The market regression equation for Europe is:

$$PBV = 2.149 + 0.111 \times ROE + 0.0015 \times Payout - 0.464 \times \beta$$

with R square = 0.245

Based on this equation the predicted PBV is 1.767, resulting in a stock price of € 10.53, that is clearly smaller than the expected value of the sector regression and of course than the current value of the company.

2.4. Value of Control

To value the Control of ACS we compare the current value of the equity with the optimally managed company. We compute the Valuation considering some improvements that we assume are feasible in case of optimal management of the company:

- 10% Improvement in EBIT
- 5% Reduction in Non-Cash Working Capital
- Optimal Capital Structure

The following exhibit summarizes the calculation of the optimal Capital Structure for the company (It's quite similar to current capital structure):

Debt Ratio	D/E	Beta	Cost of Equity	Interest Coverage Ratio	Default Spread	Cost of Debt	Cost of Capital
31.37%	45.71%	1.09827323	9.87%	6.5	0.50%	5.04%	7.80%

The combined changes gave us a value of €23.73 per share compared to status quo value of €19.42. Therefore the value of control is the difference or €4.31 per share.

2.4. Conclusions

We would place more weight on the DCF valuation than the average regression since there is some ambiguity associated with choosing comparables. Thus, We think the base case DCF valuation is most representative of ACS's current value. As the current price of the stock is trading just below our intrinsic valuation, we recommend to HOLD ACS.

Current Price	€ 18.87
DCF Low	€ 18.25
DCF Medium	€ 19.42
DCF High	€ 22.69
PBV regression Industry	€ 16.01
PBV regression Market	€ 10.53

3. ALLIANCE CAPITAL MANAGEMENT HOLDINGS LP

3.1. Company Overview

Alliance Capital provides investment management services for many of the largest U.S. public and private employee benefit plans, foundations, public employee retirement funds, pension funds, endowments, banks, insurance companies and high-net-worth individuals worldwide.

Alliance Capital Management Holding L.P. ("Alliance Holding") is a publicly traded limited partnership listed on the NYSE under the ticker symbol AC.

3.2. DCF Valuation

A two-stage discounted dividend model is used to value the company because it is very difficult to estimate FCFE or FCF for a financial service company. Information from the latest Form 10K for the fiscal year ended December 31, 2004 will be used for this report.

A top-down beta of 0.89 is obtained from Bloomberg. However, due to the large standard error (0.17), a bottom-up beta will be used for this report instead.

From the above data, the cost of equity of 7.75% can be calculated. ($R_f=4.27\%$, risk premium=4%)

I believe high top line growth of 8.18% which comes from current $ROE \times (1 - \text{Payout Ratio})$ can be achieved for the next 5 years. After that, growth will eventually settle down at 4.27% per year perpetually, which is current long-run risk free rate.

Summary of my assumptions for DCF Valuation

ASSUMPTIONS	High Growth	Stable Growth
Length of growth period (year)	5	Perpetuity
Growth Rate (%)	8.18%	4.27%
Beta	0.87	1
Riskfree Rate (%)	4.27%	4.27%
Risk Premium (%)	4.00%	4.00%
Cost of Equity (%)	7.75%	8.27%
Debt to Equity Ratio	0	0
Cost of Capital (%)	7.75%	8.27%

Equity Value

Refer to Appendix for the DDM2 valuation model. AC has a share value of \$39.26.

Sensitivity

The equity value calculation is highly sensitive to changes in the assumption of growth.

SENSITIVITY ANALYSIS	Value of Stock	% change
Stable Growth = 3%	31.54	20%
Stable Growth = 4.27%	39.26	
Stable Growth = 5%	46.4	18%

DCF valuation conclusion

Based on the per share value per DCF valuation of \$39.26, we can conclude that AC is overvalued since it is only trading at \$44.94.

3.3. Relative Valuation

Comparable Companies Relative Valuation

Comparables:

- Gabelli Assets (GBL)
- Janus Capital Group (JNS)
- Affil Managers (AMG)

Due to the fact that AC is in the financial service business, PBV as the multiple is suitable to evaluate whether AC is under or overvalued.

Given the table below, we could infer AC is overvalued.

Ticker	Short Name	Current Market Cap	Price to book ratio	3 year Return on Equity	IBES 5 year Growth	AC share value
AC	Alliance Capital	3649.44	2.79	11.9	13.38	
GBL	Gabelli Asset-A	1210.43	3.44	16.55	-0.951	55.38
JNS	Janus Capital GR	2947.03	1.12	19.07	-29.964	18.03
AMG	Affil Managers	2084.11	2.83	10.63	11.302	45.56
Average		2,080.52	2.46	15.42	-6.54	39.66

Using the average PBV ratio of the 3 comparable companies, we expect AC to trade at \$39.66 instead of \$44.94. However we need to look at the companion variable (ROE) more closely.

Regression (Industry)

To more accurately determine whether AC is under or overvalued compared to firms in the investment service sector, we ran a regression of PBV ratio using 28 companies in the financial service industry, using ROE and expected growth as independent variables. The regression yielded the following result:

$$PBV \text{ Ratio} = 0.0165 * (\text{Expected Growth in EPS: next 5}) + 0.1456 * (\text{ROE \%})$$

(R square = 0.4930)

For regression summary see Appendix

Applying AC's expected growth (13.38%) and ROE (15.9%) to the regression equation, we should expect AC to have a PBV ratio of 2.54. So the share price using our regression PBV multiple is \$40.82 (Book value per share of \$16.1). Therefore, AC is overvalued at current PBV of 2.61 (Share price of \$44.94).

Regression (Market)

To determine whether AC is under or over valued compared to market, we used the market regression of PBV ratio posted on Damodaran Online:

$$PBV = 0.202 \text{ ROE} - 0.297 \text{ Beta} + 0.0984 \text{ g} - 0.0135 \text{ Payout} \quad (R^2 = 51.5\%)$$

In this case, AC is expected to have a PBV of 3.6 (Share price of \$58.1), and thus, we obtain the contradictory result that AC is undervalued. However, the market regression is based on the whole US market, we believe the comparable companies regression will serve better to value AC's stock price.

Relative valuation conclusion

From the above relative analysis, we can conclude that AC is overvalued compared to its closest comparables, to other companies in the investment service industry.

3.4. Conclusion

In conclusion, AC's stock is currently overvalued and we would place a "SELL" recommendation on it.

Price	DCF Valuation		Relative Valuation		Recommendation
	Model Used	Value	Multiple Used	Value	
\$ 44.94	DDM2	\$ 39.26	PBV	\$ 40.82	SELL

APPENDIX 1. STATISTICAL DATA

1. STATISTICAL DATA. APPLE

Exhibit 1.1. Regression Output. Apple

Regression result:

$$PBV = 1.025 + 0.215 * ROE \quad (R \text{ square} = 0.70)$$

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.836(a)	.700	.677	1.93293
a Predictors: (Constant), NI/BV				

ANOVA(b)						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	113.170	1	113.170	30.290	.000(a)
	Residual	48.571	13	3.736		
	Total	161.740	14			
a Predictors: (Constant), NI/BV						
b Dependent Variable: P/BV						

Coefficients(a)										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.025	.699		1.465	.167	-.486	2.535		
	NI/BV	.213	.039	.836	5.504	.000	.129	.297	1.000	1.000
a Dependent Variable: P/BV										

Coefficient Correlations(a)			
Model			NI/BV
1	Correlations	NI/BV	1.000

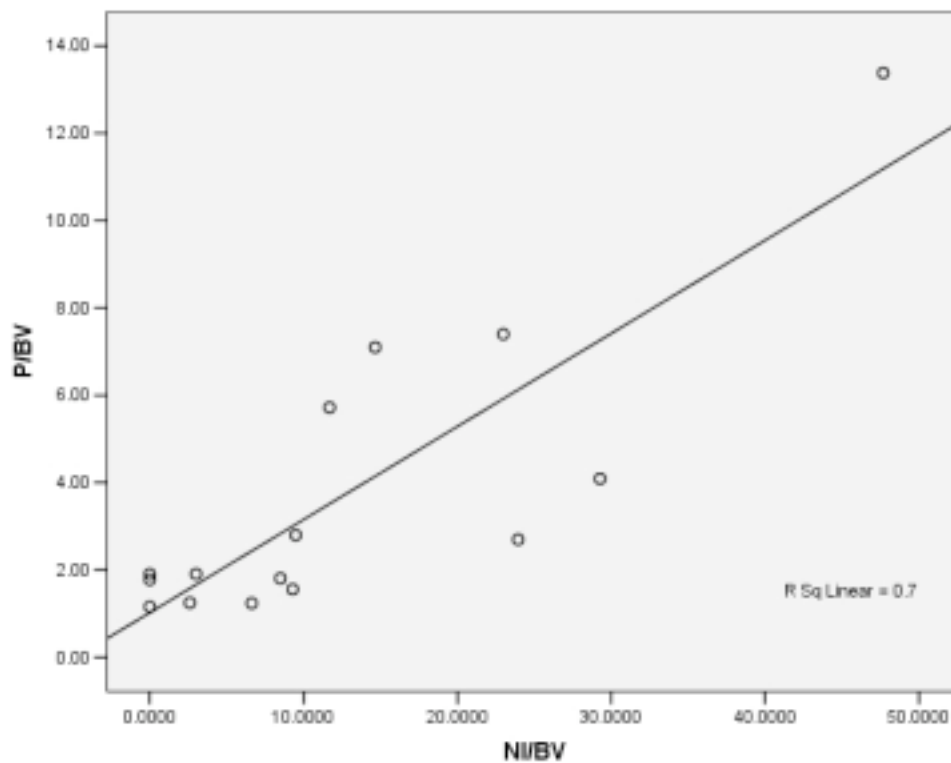
	Covariances	NI/BV	.001
a Dependent Variable: P/BV			

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	NI/BV
1	1	1.700	1.000	.15	.15
	2	.300	2.383	.85	.85

a Dependent Variable: P/BV

Exhibit 1.2. Scatter Plot Graph. Apple



2. STATISTICAL DATA. ACS

Exhibit 2.1. Regression Output. ACS

The regression equation is

$$PBV = 1.486 + 0.050 \times ROE$$

with Rsquare =0.435

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.659(a)	.435	.388	.63983

a Predictors: (Constant), NI/BV

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.781	1	3.781	9.236	.010(a)
	Residual	4.913	12	.409		
	Total	8.694	13			

a Predictors: (Constant), NI/BV
 b Dependent Variable: P/BV

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Partial	Tolerance	VIF
1	(Constant)	1.486	.311		4.771	.000	.807	2.165					
	NI/BV	.050	.016	.659	3.039	.010	.014	.086	.659	.659	.659	1.000	1.000

a Dependent Variable: P/BV

Coefficient Correlations(a)

Model			NI/BV
1	Correlations	NI/BV	1.000
	Covariances	NI/BV	.000

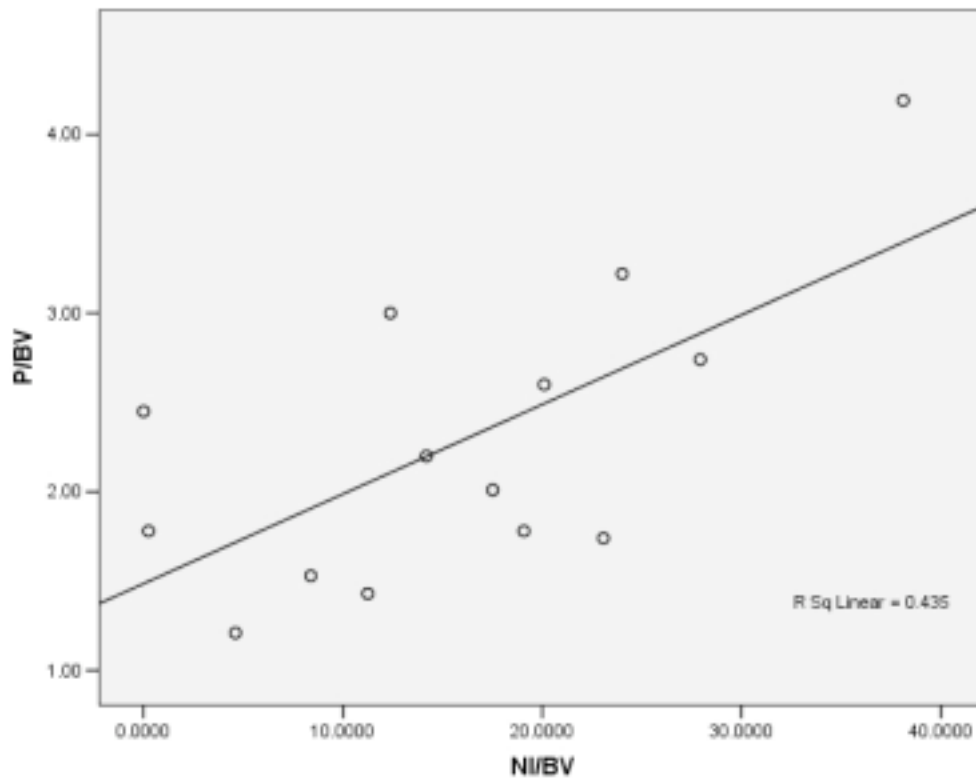
a Dependent Variable: P/BV

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	NI/BV
1	1	1.836	1.000	.08	.08
	2	.164	3.344	.92	.92

a Dependent Variable: P/BV

Exhibit 2.2. Scatter Plot Graph. ACS



3. STATISTICAL DATA. AC

Exhibit 3.1. Regression Output. AC

Summary measures						
Multiple R	0.7022					
R-Square	0.4930					
Adj R-Square	0.4525					
StErr of Est	2.3895					
ANOVA Table						
Source	df	SS	MS	F	p-value	
Explained	2	138.8235	69.4118	12.1569	0.0002	
Unexplained	25	142.7412	5.7096			
Regression coefficients						
	Coefficient	Std Err	t-value	p-value	Lower limit	Upper limit
Constant	-0.2337	1.0932	-0.2137	0.8325	-2.4851	2.0178
Growth %	0.0165	0.0252	0.6552	0.5183	-0.0354	0.0684
ROE %	0.1456	0.0296	4.9241	0.0000	0.0847	0.2065

Exhibit 3.2. Scatter Plot Graph. ACS

