

**Comparative Analysis of Financial Performance of Asian - American Banks
VS.
The U.S. National Average and Association between the
Financial Performance with the Firm Characteristics**

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ABSTRACT

The objectives of this paper are two folds: first, to examine whether Asian – American banks perform better than the U. S. bank national average; second, to explore the determinants of net interest income, a financial performance measure, from savings and loan business of Asian - American banks. 9 Korean American banks, 7 Chinese American banks, and 2 Japanese American banks make this study sample. Net interest income, non-interest operating income, and other income were used as financial performance measures. Net interest income is the excess of interest revenues from all outstanding loans over interest expenses for all deposits. Non-interest operating income is the excess of total non-interest revenues over total non-interest expenses. Total non-interest revenues include revenues from fiduciary activities, service charges on deposit accounts, trading account gains & fees, and additional non-interest revenues. Total non-interest expenses include salaries, wages, and other employee benefits, premises & equipment expenses, and additional non-interest expenses. Other income is the excess of the sum of Net Interest Income and Non-interest Operating Income over net operating income. Non-interest operating income, other income, debt to equity ratio, and size were used as the firm characteristics of the Asian – American bank in this study. The results from this study suggest that there is no significant difference in financial performance between Asian – American banks and U. S. national average. The results also suggest that the debt to equity ratio has a significant – negative association with net interest income, while other income has a significant – positive association with net interest income.

Key words: Net interest income, firm characteristics.

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1. INTRODUCTION

Asian -American banks were founded to serve the interests of the respective ethnic communities, which had segregation and exclusion from access to finance from mainstream lending institutes in the USA throughout history. With increased trades, investments, and finance between the USA and Asian countries, Asian- American banks began to engage in these international business activities, which become a lucrative practice for many Asian – American banks. Due to these unique natures of banking business in Asian – American communities, Asian – American banks may have different firm characteristics and have different financial performances relative to the U. S. bank national average. Huh, et al. (2016 & 2019) found that the performance of Asian- American banks measured by ROA and ROE is not significantly different than the U. S. bank national average. They also found that the primary determinant of ROA and ROE, composite performance measures using accounting income and market capitalization, was net interest income, which is the excess of interest revenues from outstanding loans over interest expenses for deposits. Thus, it could be an interesting research question to investigate whether the financial performances of Asian – American banks are different than those of the U. S. bank average. Besides, it may also be interesting to examine whether the financial performances of Asian – American banks vary with firm characteristics. Therefore, this study's objective is twofold: first, to investigate whether there is a difference in the financial performance between Asian – American banks and the U. S. bank average. Second, to explore the association between net interest income, a popular financial performance measure of Asian- American banks, and the firm characteristics of those banks. The financial performance is measured by net interest income, non-interest operating income, and other income in this study.

2. SAMPLE SELECTION

The following selection criteria were employed to identify the sample banks out of all Asian-American banks operating in California.

1. The bank should be in operation from 2014 through 2017.
2. The banks should have complete financial data for 2014 through 2017 available.
3. The banks should not change their legal entity due to mergers and acquisitions during the four years from 2014 to 2017.

Eighteen Asian- American banks meet the above three selection criteria: i.e., 7 Chinese – American banks, 2 Japanese – American banks, and 9 Korean - American banks. The name of those sample banks is presented in Table 1.

Table 1. Banks in the sample

Ethnicity of Bank	Name of Bank
Chinese- American Banks	Bank of The Orient
	Cathay Bank
	East West bank
	Ever Trust Bank
	Pacific Global Bank

	Preferred Bank
	Universal Bank
Japanese – American banks	Manufacturers Bank
	Pacific Commerce Bank
Korean- American Banks	Bank of Hope
	CBB Bank
	Hanmi Bank
	Open Bank
	Pacific Citi Bank
	Shinhan Bank America
	Uniti Bank
	US Metro Bank
	Woori America Bank

Since all 4-year data from 2014 to 2017 of 18 banks are analyzed, 72 bank-year data in the sample are presented in Table 2.

Table- 2. Sample Descriptions

Ethnicity of Banks	Number of Banks	Number of Years of Observations*	Total Number of Observations
Chinese – American Banks	7	4	28
Japanese – American Banks	2	4	8
Korean- American Banks	9	4	36
Total	18	4	72

*2014, 2015, 2016, & 2017.

3. EMPIRICAL TESTS AND RESULTS

To examine the difference in financial performance between Asian – American banks and the U. S. bank average, net interest income, non-interest operating income, and other income are used as the financial performance measures. Net interest income is the excess of interest revenues from all outstanding loans over interest expenses for all deposits. Non-interest operating income is the excess of total non-interest revenues over total non-interest expenses. Total non-interest revenues include revenues from fiduciary activities, service charges on deposit accounts, trading account gains & fees, and additional non-interest revenues. Total non-interest expenses include salaries, wages, and other employee benefits, premises & equipment expense, and additional non-interest expense. Other income is the excess of the sum of Net Interest Income and Non-interest Operating Income over net operating income. To control for the size effect in our regression analyses to be discussed later, other income was divided by net operating income.

The summary statistics of mean differences in financial performance measures between Asian - American banks and the U. S. bank average are presented in Table 3. As shown in Table 3, there are no statistically significant differences in net interest income and other income between Asian-American banks and the U. S. bank average for the entire four years of observation. On the contrary, there are statistically significant differences in non-interest operating income between Asian- American banks and the U. S. bank average in 2016 and 2017.

Table 3. Mean differences in financial performance between Asian – American Banks and the U. S. national

(Measurement unit: \$1,000)

		Asian Bank (2014 – 2017)	U.S. national (2014 – 2017)	Variance	P-value
2014	Net Interest Income	129,612	69,303	60,308	0.839876
	Non-interest Operating Income	(62,373)	(28,992)	(33,381)	0.134919
	Other Income	24,768	15,542	9,225	0.779617
2015	Net Interest Income	132,271	74,506	57,764	0.846077
	Non-interest Operating Income	(56,591)	(28,209)	(28,382)	0.102053
	Other Income	26,756	18,195	8,562	0.751891
2016	Net Interest Income	148,677	82,792	65,885	0.855617
	Non-interest Operating Income	(64,583)	(30,749)	(33,833)	0.091284
	Other Income	28,106	21,691	6,415	0.707385
2017	Net Interest Income	176,827	93,042	83,785	0.874365
	Non-interest Operating Income	(69,142)	(35,071)	(34,071)	0.090826
	Other Income	42,840	27,204	15,636	0.809024

NII: Net Interest Income = Total Interest Revenues - Total Interest Expenses

NIOI: Non-interest Operating Income = Total Non-interest Revenues –
 Total Non-interest Expenses

OI: Other Income = (Net Interest Income + Non-interest Operating Income)
 - Net Operating Income

OITI: Other Income / Net Operating Income

Size: Total Asset

DE: Debt to Equity ratio = Total Liabilities / Total Equity Capital

To examine the association between net interest income and the firm characteristics, bank size, debt to equity ratio, non-interest operating income, and other income were analyzed. Huh, et al. (2016 and 2019) found that net interest income has a significant impact on ROA and ROE. Net interest income is also the largest component of the bottom figure for Asian – American banks and other U. S. banks with different ethnic backgrounds. The U. S. banks, on average, take non-interest operating loss while they earn net interest income and other income. Out of the sum of net interest income and other income, net interest income accounts for 80%, and other income accounts for the remaining 20%. But non-interest operating loss takes about 30% of the sum of net interest income and other income.

Asian – American banks do have about the same phenomena. Out of the sum of net interest income and other income, net interest income accounts for 83%, and other income accounts for the remaining 17%. But non-interest operating loss takes about 36% of the sum of net interest income and other income. It is evident that the largest component of banks, in general, is the net interest income. That is why it may be meaningful to examine the association between net interest income of Asian- American banks and their firm characteristics. Considering possible use of non-interest operating activities and other activities as decoys for net interest income, both non-interest operating income/loss and other income are used as control variables in our regression analyses. As widely perceived, the bank size matters due to more publicly available information, credibility, and convenience in services. The size measured by total assets is used as a testing variable to see if the size affects net interest income. Since the debt to equity ratio is a popular measure of solvency, a long-term risk measure, and banks are susceptible to the solvency problem, the debt to equity ratio was used as another testing variable that may affect net interest income. As shown in Table 4, net loans & leases (i.e., assets to banks) over total deposits (i.e., debts to banks) ratio of Asian -American banks over the four years of testing period is 88%, assets to debts ratio. The average debts to assets ratio of the U. S. banks should be about 114 %. Net loans & leases (i.e., assets to banks) over total deposits (i.e., debts to banks) ratio of the U. S. banks over the four years of testing period is 97%, assets to debts ratio. The average debts to assets ratio of the U. S. banks should be about 103 %. These findings indicate that the debts to assets ratio and hence the debts to equity ratio may also affect net interest income.

Table 4. Descriptions of Loans and Deposits

(Measurement unit: \$1,000)

Years	Accounts	Asian Average	Banks	National Average	Difference
2014	Net loans & leases	2,789,890		1,340,839	1,449,051
	Loan loss allowance	41,197		20,165	21,032
	Total deposits	3,139,056		1,950,907	1,188,149
	Net loans & leases/Total deposits	0.89		0.69	0.20
2015	Net loans & leases	3,103,589		1,510,054	1,593,535
	Loan loss allowance	39,626		20,492	19,134
	Total deposits	3,545,256		2,126,172	1,419,085
	Net loans & leases/Total deposits	0.88		0.71	0.17
2016	Net loans & leases	3,648,574		1,661,214	1,987,360
	Loan loss allowance	38,497		21,852	16,646
	Total deposits	4,120,517		2,343,958	1,776,559
	Net loans & leases/Total deposits	0.89		0.71	0.18
2017	Net loans & leases	4,084,284		1,808,439	2,275,845
	Loan loss allowance	40,717		22,907	17,810
	Total deposits	4,432,007		2,535,214	1,896,793
	Net loans & leases/Total deposits	0.92		0.71	0.21
All 4 years	Net loans & leases	13,626,337		6,320,546	7,305,791
	Loan loss allowance	160,037		85,416	74,621
	Total Deposits	15,236,836		8,956,251	6,280,585
	Net loans & leases/Total deposits	0.88		0.97	1.15

Table 5. Descriptive Statistics of Variables

Variables	Mean	Standard Deviation	Median	Min	Max
NII	0.05032	0.00570	0.05048	0.04139	0.06758
NIOI	(0.01853)	0.00609	(0.01680)	(0.03315)	(0.01210)
OITI	0.41987	0.65281	0.56851	(1.61368)	1.18830
Size	4.59873	8.14441	1.13711	0.17531	33.19810
DE	7.22803	1.25803	7.23664	4.26857	9.35320

NII: Net Interest Income = Total Interest Revenues - Total Interest Expenses

NIOI: Non-interest Operating Income = Total Non-interest Revenues - Total Non-interest Expenses

OITI: Other Income / Net Operating Income

Other Income = (Net Interest Income + Non-interest Operating Income) - Net Operating Income

Size: Total Asset

DE: Debt to Equity ratio = Total Liabilities / Total Equity Capital

Table 6. Correlations between variables

	NII	NIOI	OITI	Size	DE
NII	1.00000				
NIOI	(0.08948)	1.00000			
OITI	0.23844	0.47172	1.00000		
Size	(0.28146)	0.45632	0.16124	1.00000	
DE	(0.61212)	0.08501	0.25510	0.23310	1.00000

NII: Net Interest Income = Total Interest Revenues - Total Interest Expenses

NIOI: Non-interest Operating Income = Total Non-interest Revenues - Total Non-interest Expenses

OITI: Other Income / Net Operating Income

Other Income = (Net Interest Income + Non-interest Operating Income) - Net Operating Income

Size: Total Asset

DE: Debt to Equity ratio = Total Liabilities / Total Equity Capital

Summary descriptions of the dependent variable and all independent variables with their respective measurements are presented in Appendix A. The symbols for those variables to be used in regression models are also shown in Appendix A.

To see if there are any outliers for each testing variable, control variable, and dependent variable, mean, standard deviation, median, minimum, and maximum values of all variables are computed and presented in Table 6. As shown in Table 6, there are no outliers for any variables with a value three or more standard deviations away from the respective mean except for the size variable. It is East West Bank, a Chinese – American bank that has \$33.20 billion of total assets with the respective mean and standard deviation of \$4.56 billion and \$8,14 billion, respectively. Since the inclusion of East-West Bank in the sample for analyses may not make any significant difference in the outcomes, the bank is included.

To examine if there is any possibility of multicollinearity issues between independent variables, correlations between variables are computed and presented in Table 6. As shown in Table 6, there is no high correlation coefficient indicating a possible multicollinearity issue observed.

To examine the effect of other income, non-interest operating income, debt to equity ratio, and size on net interest income, the following regression models were run:

$$\text{Model 1: } \text{NII} = \alpha_0 + \alpha_3 \text{ OITI} + \alpha_4 \text{ Size} + \alpha_5 \text{ DE}$$

$$\text{Model 2: } \text{NII} = \alpha_0 + \alpha_1 \text{ NIOI} + \alpha_3 \text{ OITI} + \alpha_4 \text{ Size} + \alpha_5 \text{ DE}$$

Where

NII: Net Interest Income = Total Interest Revenues - Total Interest Expenses

NIOI: Non-interest Operating Income = Total Non-interest Revenues –
Total Non-interest Expenses

OI: Other Income = (Net Interest Income + Non-interest Operating Income)

- Net Operating Income

OITI: Other Income / Net Operating Income

Size: Total Asset

DE: Debt / Equity ratio = Total Liabilities / Total Equity Capital

To examine the collective effect of the independent variables on net interest income, summary statistics of each model, such as F-value, P-value, and adjusted R-square are computed and presented in Table 8. Model 1 has an F-value of 6.35 with a p-value of 0.0061, and Model 2 has F-value of 5.17 with a p-value of 0.0102, which is statistically significant at any reasonable confidence level. This finding indicates that the independent variables have a significant effect on the dependent variable, net interest income.

To examine the effect of individual independent variable on net interest income, the partial regression coefficients of each independent variable from Model 1 and Model 2 were computed and presented in Table 8. As shown in Table 8, the size has a partial regression coefficient of -1.08 with a p-value of 0.298 from Model 1 and the partial regression coefficient of -0.46 with a p-value of 0.6532 from Model 2. Both partial regression coefficients are not statistically significant. NIOI, non-interest operating income, has a partial regression coefficient of -1.12 with a p-value of 0.281, which is not statistically significant. But the debt to equity ratio has a partial regression coefficient of -3.7 with a p-value of 0.0024 from Model 1 and the partial regression coefficient of -3.86 with a p-value of 0.002 from Model 2. Both partial regression coefficients from Model 1 and Model 2 are statistically significant at any reasonable confidence level. It indicates that the debt to equity ratio does have a significant - negative effect on net interest income. OITI, other income standardized by operating income, also has statistically significant partial regression coefficients from both Model 1 and Model 2. OITI has a partial regression coefficient of 2.45 with a p-value of 0.0281 from Model 1 and a partial regression coefficient of 2.71 with a p-value of 0.0178 from Model 2. These findings may indicate a significant synergy effect between activities generating other income, such as discontinued operations and activities associated with savings and loans generating net interest income.

Table 7. Comparisons between Models

	Model 1	Model 2
Number of Observations		
Read	18	18
Missing Values	-	-
Total	18	18
Degrees of Freedom		
Model	3	4
Error	14	13
Total	17	17
Sum of Squares		
Model	0.00032	0.00034
Error	0.00023	0.00021
Total	0.00055	0.00055
F-value	6.35	5.17
P-value	0.0061	0.0102
Adjusted R-Square	0.4858	0.4954

Model 1: $NII = \alpha_0 + \alpha_3 OITI + \alpha_4 Size + \alpha_5 DE$

Model 2: $NII = \alpha_0 + \alpha_1 NIOI + \alpha_3 OITI + \alpha_4 Size + \alpha_5 DE$

Table 8. Multivariate regressions

Variables		Model 1 (P-value)	Model 2 (P-value)
Dependent Variable	NII		
Independent Variables	NIOI		-1.12 (0.281)
	OITI	2.45 (0.0281)	2.71 (0.0178)
	Size	-1.08 (0.298)	-0.46 (0.6532)
	DE	-3.7 (0.0024)	-3.86 (0.002)

NII: Net Interest Revenue measured by subtracting Total Interest Expense from Total Interest Revenue

NIOI: Non-interest Operating Income = Total Non-interest Revenues -Total Non-interest Expenses

OITI: Other Income / Net Operating Income

Other Income = (Net Interest Income + Non-interest Operating Income) - Net Operating Income

Size: Total Asset

DE: Debt to equity ratio = Total Liabilities / Total Equity Capital

Model 1: $NII = \alpha_0 + \alpha_3 OITI + \alpha_4 Size + \alpha_5 DE$

Model 2: $NII = \alpha_0 + \alpha_1 NIOI + \alpha_3 OITI + \alpha_4 Size + \alpha_5 DE$

4. CONCLUSION

This study has two research objectives. The first one to examine if Asian-American banks do have different financial performance than the U. S. bank average. The second is to explore the association between net interest income and firm characteristics. Using 18 Asian-American bank data and the U. S. national bank data over four years from 2014 to 2017, various investigations were conducted. Regarding the first research objective, the results from this study show that there is no significant difference in financial performance measured by net interest income, non-interest operating income, and other income between Asian-American banks and the U. S. bank average. Regarding the second question, the results from this study show that debt to equity ratios have a significant- negative effect on net interest income, while other incomes have a significant – positive impact on net interest income. The other independent variables, such as bank size and non-interest operating income, do not have significant effects on net interest income, according to the results of this study.

Because many data have to be collected manually, this study is confined to the Asian – American banks in the state of California, and hence it may be a little hard to generalize the findings from this study to the USA or beyond the USA, although the results are robust across different methodologies and various measures of variables.

Appendix A: Description of All Variables Used in Regression Tests

Variables	Descriptions
Dependent Variable	
NII	Net Interest Income = Total Interest Revenues – Total Interest Expenses
Ind. Variables	
OITI	Other Income / Net Operating Revenue Other Income = (Net Interest Income + Non-interest Operating income) – Net Operating Income
Size	Total assets
DE	Debt to Equity ratio = total liabilities/ total equity capital
NIOI	Non-interest Operating Income = Total Non-interest Revenues* - Total Non-interest Expenses**

* Total Non-interest revenue includes Fiduciary activities, Service charges on deposit accounts, Trading account gains & fees and Additional non-interest income

** Total non-interest expenses include Salaries and employee benefits, Premises & equipment expense and Additional non-interest expense

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