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Research Article

Discussion on Case Teaching Method in a Risk Management Case Study with Econometric Model at Vietnam Listed Banks – Issues Of Economic Education for Students

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Abstract
It is the time we need innovation approaches in teaching methods at our universities and colleges. Over years, in business and management schools, case teaching is used quite widely and prove students with real context and increase their problem solving skills. Authors mainly use qualitative methods including synthesis and inductive and explanatory methods. For quantitative methods we use OLS regression with Eview, statistics, calculation formulas. The study results show us that to achieve learning goals better, students need to obtain skills of situation and context analysis as well as quantitative skills in case teaching at schools. For instance, In this paper we will introduce a case teaching method for students at schools, esp. for economic subjects for students through a risk management case study at Vietnam listed banks in period 2011-2020. And student can draw out conclusions that: as R and Rf has positive effects on both beta ACB and beta SHB and VNIndex has positive effect on both beta: we would suggest policies to reduce R and Rf to reduce risk. Finally, this paper also address issues of training capabilities and skills for teachers.

Keywords
economic, risk management, listed banks, case teaching method, students, universities, teachers training

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Introduction

First, we recognize the importance of teaching economic students and innovative teaching methods in schools has been increasing to a new level in recent years. Case study teaching is a normal tool used in many business schools, not only in economics and management fields, but also in marketing, social sciences, medicine, etc. Next, in case study teaching, students are introduced to problem solving in a real situation and are in the position of a decision maker. In this paper we mainly focus on present an example of case study in risk management field for Vietnam banks for economic students, esp. In higher education level. Huy (2021) and Huy et al. (2021) said The more the economy growing, the more important the role of risk management in commercial bank (Trung et al., 2021). To conduct this case study, we use good and reliable resources from inernet data, from Bureau statistics office, bank system and stock exchange, and we structure our paper with introduction, previous studies, method and data, main findings, discussion and conclusion. Case studies use theory to study and analyze real-life situations. It can be said that a case study is something that belongs to real situations, circumstances, and facts in reality, which can be applied theoretical knowledge to analyze, learn, and dissect the problem. There are Advantages of Case Study such as: Attractiveness, Up to date calculation, Typical and representative, Suitable for learning on the basis of a complete background knowledge system, The best way (if possible) to help learners understand and remember theoretical knowledge.

Literature review

First, Bonney (2015) stated that the case study teaching method is becoming an increasingly common teaching strategy in science education. Selvan, Arasu, and Sivagnanasundaram (2011) found the Internet has helped bank system with information flow and guarantee higher client satisfaction. Then, We summarize previous studies as follows:

Methodology

Method and Data

Authors will present and example of a case study and case teaching methods. Case used with a combination of quantitative methods and qualitative methods including synthesis, explanation and inductive methods. With reliable internet data, this study used OLS regression with supported Eview. Lerner and Richey (2005) specified that if professors use case studies as assessment tool at end of course, consequences will be in exercise evaluated by him/her and not discussed students. This will be beneficial to students. Hence we can use case studies as a precursor to a student teaching experience, or internship as real job may provide students insights. Looking at descriptive statistics below, we see that: we see that: standard deviation of exchange rate and SP500 are highest values (figure 1). And correlation between beta and IM higher than that between beta and G (figure 4).

Figure 1 – SHB and macro descriptive stat

	BETA_SHB	CPI	EX_RATE	G	IM	R	RF	SP500	TRADEBA	VNINDEX
Mean	0.745500	0.049970	22394.20	0.067150	162.0650	0.112630	0.065213	2245.493	-75.16000	680.2135
Median	0.895000	0.035350	22700.00	0.059700	150.4000	0.102500	0.059850	2138.720	-125.0000	606.6300
Maximum	1.650000	0.181300	23230.00	0.070800	267.2000	0.190000	0.132000	3703.060	498.0000	1067.500
Minimum	-1.460000	0.006300	20618.00	0.018100	117.4000	0.080000	0.012200	1292.280	-1162.000	351.6500
Std. Dev.	0.655242	0.045765	837.4044	0.013917	36.96982	0.030423	0.027599	685.2655	402.1636	226.7034
Skewness	-1.949069	1.928654	-0.853154	-1.442505	1.394427	1.394477	0.911109	0.363508	-0.667135	0.267939
Kurtosis	7.598327	5.913603	2.379814	4.632589	4.628737	4.016835	4.234518	2.307065	3.848882	1.664441
Jarque-Bera	30.28341	19.47325	2.746765	9.157194	8.692074	6.931922	4.037095	0.840594	2.084063	1.725736
Probability	0.000000	0.000059	0.253249	0.010269	0.012958	0.031243	0.132848	0.656852	0.352737	0.421950
Sum	14.91000	0.999400	447884.0	1.143000	3241.100	2.252600	1.104250	44909.86	-1503.200	13604.27
Sum Sq. Dev.	8.157495	0.039794	13323677	0.003680	25968.59	0.017586	0.014472	8922186.	3072975.	976494.2

(**source:** authors calculation and stock exchange)

Table 1 –
Summary of previous studies

Authors	Contents, results
Karim (2011)	Organization need to enhance MIS- Management Information Systems as it helped us to make effective decision
Bonney (2015)	Stated there are benefits of cases studies methods compared to other methods, such as: - increasing perceptions of learners on oral and communication skills - improving performance on exam questions - increasing perceptions on linkage between biology and other life aspects
Tripathy (2009)	Case studies also help to improve individual development, cognitive behavior, interaction, personality, learning, …
Minniti et al. (2017)	case study can be considered as a teaching strategy and: - a depth method with reality and real situation - case teaching is an active learning strategy
Lapoule and Lynch (2018)	Investigate case teaching at schools and find out: - case contribute to classroom teaching and research, both at academic level and institutional level
Çakmak and Akgün (2018)	Present advantages of case teaching including but not limit to: - help students with skills, knowledge to sole problems - give solutions based on information, for real life or job situation

Figure 2 - SHB and macro correlation matrix

Correlation Matrix

	BETA_SHB	CPI	EX_RATE	G	IM	R	RF	SP500	TRADEBA...	VNIINDEX
BETA_SHB	1.000000	0.207069	-0.295674	0.164088	-0.217265	0.377825	0.194722	-0.251559	0.281810	-0.205408
CPI	0.207069	1.000000	-0.516593	0.038007	0.184050	0.547153	0.603133	-0.599312	-0.131135	-0.554246
EX_RATE	-0.295674	-0.516593	1.000000	0.145012	0.071635	-0.470835	-0.851995	0.720764	0.048661	0.696179
G	0.164088	0.038007	0.145012	1.000000	0.244021	-0.040216	0.068575	-0.185033	-0.300285	0.012915
IM	-0.217265	0.184050	0.071635	0.244021	1.000000	0.128743	-0.019349	-0.074514	-0.083567	0.052526
R	0.377825	0.547153	-0.470835	-0.040216	0.128743	1.000000	0.484905	-0.756602	0.027941	-0.790059
RF	0.194722	0.603133	-0.851995	0.068575	-0.019349	0.484905	1.000000	-0.846717	-0.277080	-0.804579
SP500	-0.251559	-0.599312	0.720764	-0.185033	-0.074514	-0.756602	-0.846717	1.000000	0.375157	0.949626
TRADEBA...	0.281810	-0.131135	0.048661	-0.300285	-0.083567	0.027941	-0.277080	0.375157	1.000000	0.347578
VNIINDEX	-0.205408	-0.554246	0.696179	0.012915	0.052526	-0.790059	-0.804579	0.949626	0.347578	1.000000

(**source:** authors calculation and stock exchange)

Figure 3 – ACB and macro descriptive stat

	BETA_ACB	CPI	EX_RATE	G	IM	R	RF	SP500	TRADEBA...	VNIINDEX
Mean	0.783500	0.049970	22394.20	0.057150	162.0650	0.112630	0.055213	2245.493	-75.16000	680.2135
Median	0.660000	0.035350	22700.00	0.059700	150.4000	0.102500	0.059850	2138.720	-125.0000	606.6300
Maximum	3.370000	0.181300	23230.00	0.070800	267.2000	0.190000	0.132000	3703.060	498.0000	1067.500
Minimum	0.010000	0.006300	20618.00	0.018100	117.4000	0.080000	0.012200	1292.280	-1162.000	351.5500
Std. Dev.	0.709383	0.045765	837.4044	0.013917	36.96982	0.030423	0.027599	685.2655	402.1636	226.7034
Skewness	2.473568	1.928654	-0.853154	-1.442505	1.394427	1.349477	0.911109	0.363508	-0.667135	0.267939
Kurtosis	10.01521	5.913603	2.379814	4.632589	4.628737	4.016835	4.234518	2.307065	3.848882	1.664441
Jarque-Bera	61.40608	19.47325	2.746765	9.157194	8.692074	6.931922	4.037095	0.840594	2.084063	1.725736
Probability	0.000000	0.000059	0.253249	0.010269	0.012958	0.031243	0.132848	0.656852	0.352737	0.421950
Sum	15.67000	0.999400	447884.0	1.143000	3241.100	2.252600	1.104250	44909.86	-1503.200	13604.27
Sum Sq. Dev.	9.561255	0.039794	13323677	0.003680	25968.59	0.017586	0.014472	8922186.	3072975.	976494.2

(source: authors calculation and stock exchange)

Figure 4 - ACB and macro correlation matrix

Correlation Matrix

	BETA_ACB	CPI	EX_RATE	G	IM	R	RF	SP500	TRADEBA...	VNIINDEX
BETA_ACB	1.000000	-0.197741	0.189232	0.053454	0.441408	-0.090726	-0.244251	0.219021	0.253213	0.282419
CPI	-0.197741	1.000000	-0.516593	0.038007	0.184050	0.547153	0.603133	-0.599312	-0.131135	-0.554246
EX_RATE	0.189232	-0.516593	1.000000	0.145012	0.071635	-0.470835	-0.851995	0.720764	0.048661	0.696179
G	0.053454	0.038007	0.145012	1.000000	0.244021	-0.040216	0.068575	-0.185033	-0.300285	0.012915
IM	0.441408	0.184050	0.071635	0.244021	1.000000	0.128743	-0.019349	-0.074514	-0.083567	0.052526
R	-0.090726	0.547153	-0.470835	-0.040216	0.128743	1.000000	0.484905	-0.756602	0.027941	-0.790059
RF	-0.244251	0.603133	-0.851995	0.068575	-0.019349	0.484905	1.000000	-0.846717	-0.277080	-0.804579
SP500	0.219021	-0.599312	0.720764	-0.185033	-0.074514	-0.756602	-0.846717	1.000000	0.375157	0.949626
TRADEBA...	0.253213	-0.131135	0.048661	-0.300285	-0.083567	0.027941	-0.277080	0.375157	1.000000	0.347578
VNIINDEX	0.282419	-0.554246	0.696179	0.012915	0.052526	-0.790059	-0.804579	0.949626	0.347578	1.000000

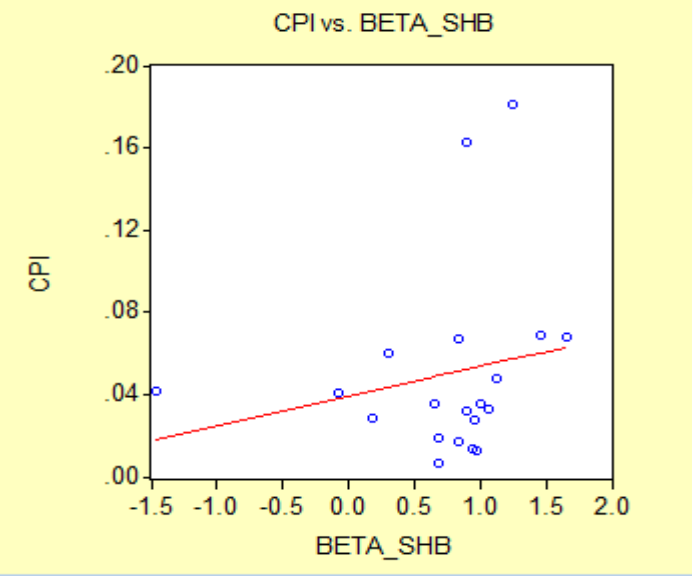
(**source:** authors calculation and stock exchange)

Main findings of our case study

Overall results

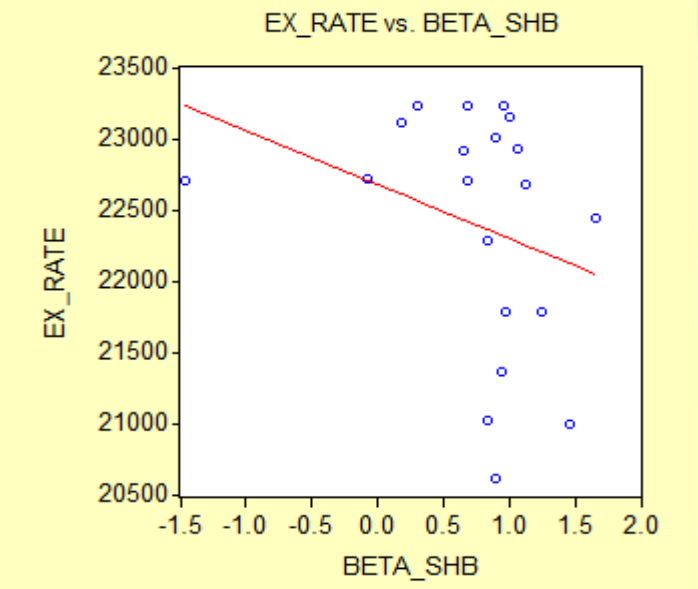
As shown in below charts,
First, from below charts we recognize that:
CPI and beta SHB has positive correlation while negative correlation with beta ACB.
Then, exchange rate and beta SHB has negative correlation whereas positive correlation with beta ACB.

Chart 1 - CPI and SHB beta



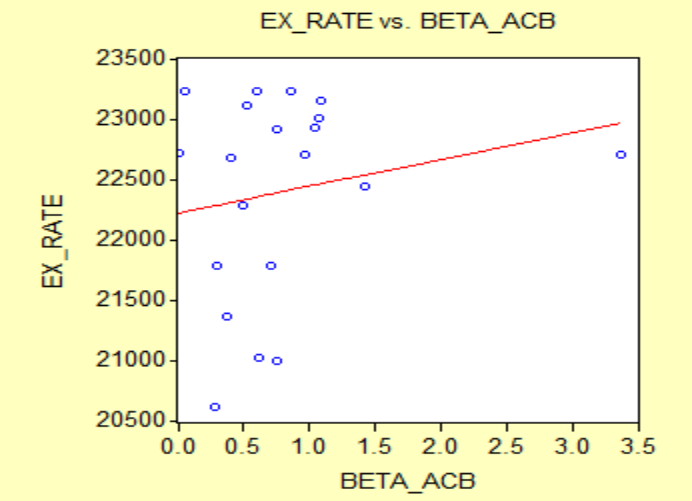
(**source:** authors calculation and stock exchange)

Chart 2 - exchange rate and beta SHB



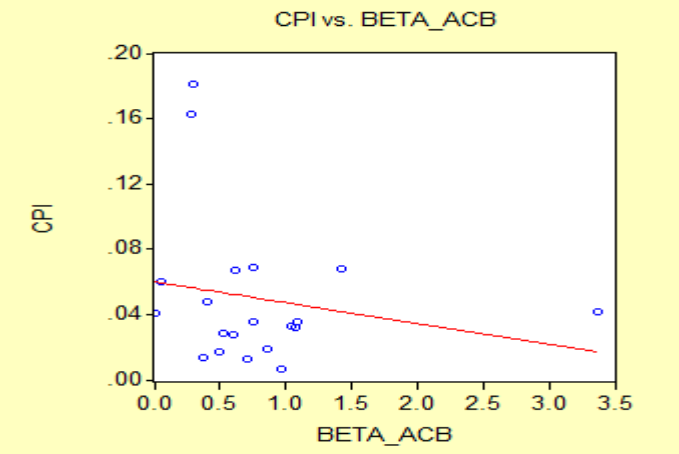
(**source:** authors calculation and stock exchange)

Chart 3 - exchange rate and beta ACB



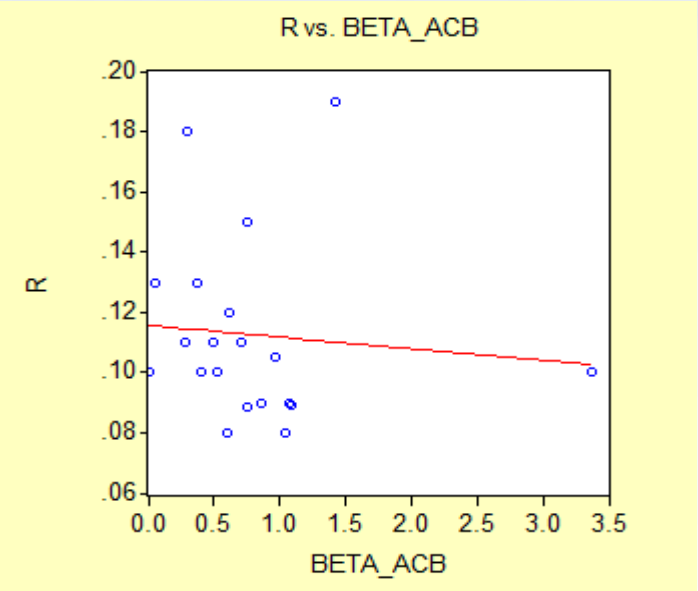
(source: authors calculation and stock exchange)

Chart 4 - CPI and beta ACB



(source: authors calculation and stock exchange)

Chart 5 - R and Beta ACB



(source: authors calculation and stock exchange)

OLS Regression results

We will run OLS for 1-2 factors, firstly:
- With coefficient of 6.2, there is positive correlation between beta EIB and CPI (figure 5)
- With coefficient of -10.8, there is negative correlation between beta EIB and CPI (figure 6)
- With coefficient of 0.009 and 12.2, accordingly, there is positive correlation between beta EIB and IM and Rf (figure 7)

Figure 5 - Beta ACB and OLS for CPI

Dependent Variable: BETA_ACB
Method: Least Squares
Date: 07/20/21 Time: 14:32
Sample: 1 20
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	-3.065105	3.581384	-0.855844	0.4033
C	0.936663	0.239891	3.904531	0.0010

R-squared	0.039102	Mean dependent var	0.783500
Adjusted R-squared	-0.014282	S.D. dependent var	0.709383
S.E. of regression	0.714430	Akaike info criterion	2.259977
Sum squared resid	9.187395	Schwarz criterion	2.359550
Log likelihood	-20.59977	F-statistic	0.732468
Durbin-Watson stat	2.005085	Prob(F-statistic)	0.403334

(source: authors calculation and stock exchange)

Figure 6 – Beta ACB and OLS for exchange rate

Dependent Variable: BETA_ACB
Method: Least Squares
Date: 07/20/21 Time: 14:32
Sample: 1 20
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX_RATE	0.000160	0.000196	0.817615	0.4243
C	-2.806342	4.393540	-0.638743	0.5310

R-squared	0.035809	Mean dependent var	0.783500
Adjusted R-squared	-0.017757	S.D. dependent var	0.709383
S.E. of regression	0.715654	Akaike info criterion	2.263398
Sum squared resid	9.218879	Schwarz criterion	2.362971
Log likelihood	-20.63398	F-statistic	0.668495
Durbin-Watson stat	2.146210	Prob(F-statistic)	0.424268

(source: authors calculation and stock exchange)

Figure 7 - Beta ACB and OLS for R

Dependent Variable: BETA_ACB
Method: Least Squares
Date: 07/20/21 Time: 14:33
Sample: 1 20
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
R	-2.115484	5.473279	-0.386511	0.7036
C	1.021767	0.637462	1.602868	0.1264

R-squared	0.008231	Mean dependent var	0.783500
Adjusted R-squared	-0.046867	S.D. dependent var	0.709383
S.E. of regression	0.725816	Akaike info criterion	2.291599
Sum squared resid	9.482555	Schwarz criterion	2.391172
Log likelihood	-20.91599	F-statistic	0.149391
Durbin-Watson stat	2.041998	Prob(F-statistic)	0.703649

(source: authors calculation and stock exchange)

Figure 8 - Beta ACB and OLS for G and IM

Dependent Variable: BETA_ACB
Method: Least Squares
Date: 07/20/21 Time: 14:33
Sample: 1 20
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-2.940902	11.41682	-0.257594	0.7998
IM	0.008740	0.004298	2.033642	0.0579
C	-0.464782	0.843537	-0.550991	0.5888

R-squared	0.197972	Mean dependent var	0.783500
Adjusted R-squared	0.103616	S.D. dependent var	0.709383
S.E. of regression	0.671626	Akaike info criterion	2.179252
Sum squared resid	7.668395	Schwarz criterion	2.328612
Log likelihood	-18.79252	F-statistic	2.098133
Durbin-Watson stat	2.581635	Prob(F-statistic)	0.153324

(source: authors calculation and stock exchange)

Next we see OLS results in tables

Table 2 –
OLS for internal factors

	Coefficient Beta SHB	**Beta ACB**
CPI	-0.15	-4.4
G	12.6	-2.6
IM	-0.008	0.008
R	21.4	7.1
Rf	11.4	4.9
VNIndex	0.002	0.001
R-squared	0.4	0.31
SER	0.6	0.7
Akaike info criteria	2.1	2.42

(source: authors calculation and stock exchange)

Table 3 –
OLS for external factors

	Coefficient Beta SHB	**Beta ACB**
Exchange rate	-3.19E	0.0001
Sp500	-0.0003	-1.56E
Trade balance	0.0006	0.0004
SER	0.62	0.73
Akaike info criteria	2.08	2.39

(**source:** authors calculation and stock exchange)

Discussion

For internal factors, compared effects on 2 banks beta

R and Rf has positive effects on both beta ACB and beta SHB (table 2)
VNIndex has positive effect on both beta (table 2)
Huy, Loan, and Pham (2020) and Huy, Dat, and Anh (2020) mentioned risk management factors and model in a case of Vietcombank in Vietnam.

For external factors

SP500 has negative effects on both beta of banks (table 3)
Trade balance has positive impact on both beta (table 3)
Thats happen for period 2011-2020.

Conclusion

Our case study results

Because Trade balance has positive impact on both beta (table 3): we suggest agencies need to control trade balance at proper level, not need to increase too much to increase risk. Secondly, as R and Rf has positive effects on both beta ACB and beta SHB (table 2) and VNIndex has positive effect on both beta (table 2): we would suggest policies to reduce R and Rf to reduce risk. Tinh, Thuy, and Huy (2021) also propose recommendations for teaching methodology to students at all levels from undergraduate schools to doctoral and even associate professors. Case studies are often traditionally thought of as being used in medical, legal, and business training. Physicians have long been trained by the case method, as medical school students are presented with the particulars of a patient's medical problem and are tasked with providing a diagnosis and course of treatment. In the legal field, Stanford Law School, for instance, uses case studies that "place students in the roles of lawyers and policy makers and teach fundamental lawyering skills such as investigating facts, counseling, and resolving ethical dilemmas". Hoa et al. (2021) said that Teachers at all levels in Vietnam: nursery, elementary, high school, colleges, universities need general solutions for enhancing quality, both from internal side such as teachers or lecturers themselves, and from external sources (such as: agencies, Ministry of Education, government, etc.). They propose several proper solutions regarding to capabilities and skills for teachers (including listening and understanding, and teaching skills). They are people with deep knowledge in specific fields and can train or teach other people. Our study will be foundations for further researches and solutions for teachers and lecturers in emerging markets including our country Vietnam (Vu et al., 2021).

Limitation of research

We can expand our research model for other industries and other markets.

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