

Part 1

Business Operation

1. Overview of TISCO Business

In 2008, TISCO Group implemented the Holding Company Restructuring Plan with the holding company as the parent company of the Group. After the enactment of Financial Institutions Business Act, B.E. 2551 on August 3, 2008, TISCO Bank Public Company Limited ("the Bank" or "TISCO Bank") submitted application to establish the Financial Group to the Bank of Thailand by setting up a new company, TISCO Financial Group Public Company Limited, a non-bank public company limited to be a holding company and parent company of the Group in place of TISCO Bank.

As TISCO Financial Group Public Company Limited operates as shareholders in other companies with no other major business, in which TISCO Bank Plc. is the core company. TISCO Group provides broad range of financial services which can be divided into 2 main business lines including commercial banking and lending business and capital market business.

1.1 Vision, Mission, Values for business operations and Business Strategy

To align the goals and direction of business units to match those of TISCO Group, the Company has put in writing clearly defined statements outlining its Vision, Mission and Values. Vision encompasses the ultimate goal of TISCO Group whereas Values are intrinsic attributes that management and staff apply in achieving goals and objectives.

Our Vision is "Wealth of Possibilities".

Our Mission is "TISCO is a quality growth organization with strong customer priority, committed to deliver value financial services with mastery and professionalism. Our promise is to provide financial services that address customer needs in all geographies, with focus on creativity of new financial solutions, and providing of guidance and advice to create financial opportunities for our customers at different stages of their lives. Continuous human capital development and leading-edge technological investments are keys to our efficiency and reliability of service. TISCO also adheres to the cultures of integrity, fairness, and transparency that create sustainable value to our customers, shareholders, people, and society".

Our Values are the essence of the service we offer to our customers and qualities we cultivate and seek in our people. Through induction, training, and comprehensive corporate guidelines, these values are transferred into TISCO culture and shape our professional attitude. TISCO values consist of:

- | | |
|----------------------|--|
| 1) Customer Priority | Customers are our primary focus. Their needs are our priority. We derive a professional and practical solution that fulfills our customers' requirements. |
| 2) Mastery | Our staff is obligated to continually learn and develop themselves, striving for outstanding capability and skill to maximize customer satisfaction. |
| 3) Integrity | All of our employees conduct themselves with honesty and follow a code of ethics of the highest standards. |
| 4) Creativity | Our expertise is not only dependent on knowledge and experience, but is also founded on our creativity. We provide advice that is not only accurate, but also creative to help them see all financial possibilities they have. |
| 5) Reliability | The organization creates added value in our financial services through the professional skills and reliable performance of our team. |
| 6) Guidance | Because our staff members have a wide range of financial expertise, we provide our customers with the best financial advisory in a friendly and open-minded way, understanding what exactly they need so we can help them achieve their goals. |

Strategic Plan

To formulate 3-year business plan, TISCO has considered of both external business environment and internal factors. The external business environments include economic, regulation, and government policies while internal factors which are strengths, weaknesses, opportunities, risks, critical success factors as well as priority issues. The management will take all of these issues into consideration to determine a Corporate Theme. The Corporate Strategy Map, in accordance with the Corporate Theme, will then be crafted along with Vision. To implement strategic planning successfully, TISCO Group has adopted Balanced Scorecard technique with the aim of achieving balance in strategic planning from four perspectives: financial, customer, internal process and learning. Key Performance Indicators will be determined for all business areas, and linked to performance management to gauge employee performance so that staff may be awarded fair compensation based on merit. Additionally, the business performance is constantly monitored via Performance Dashboard session.

Strategic action for the organization

To achieve the organization's goals, within the Vision framework, TISCO Group has determined strategic actions as follows

- Expand geographical coverage towards microfinance branch network under brand "Somwang". 48 Somwang branches were opened nationwide. At the end of 2018, there were 238 Somwang branches to cater the rising demand of loan against auto license.
- Enhance quality of wealth manager to provide professional financial planning, investment and asset allocation together with open architecture investment and protection platform. In 2018, the numbers of wealth manager, who have qualified AFPT/CFP certification, were increased almost twice comparing with year earlier. In term of new products, TISCO launched several funds in response to various customers' risk levels e.g. TISCO Global Income Fund which focuses on allocating investment among global set of assets, TISCO Global ESG Fund which focuses on selected companies that pass ESG screening criterion. For insurance product, TISCO introduced a new health care protection plan as well as accident protection plan for elderly whereby both products received well response from the customer.
- Expand individual deposits base and wealth management business in growing upper middle income and retirement segments. The deposit base was expanded by 7% (YoY). Meanwhile, TISCO Asset has been arranged retirement financial knowledge seminar for provident fund member throughout 2018.
- Explore and leverage on business partners for client acquisition and market access. TISCO have trusted by Ford and Mazda, which are the leading car producers, to develop car protection insurance.
- Retain and develop more businesses with existing clients through total solution approach. The extensive collaborations across business group will pursue while extending business referrals across the group to develop more products and services that response to customers' lifestyle or needed solutions.
- Develop digital infrastructure to support change in customer behavior and expansion of retail customer base through new platform.

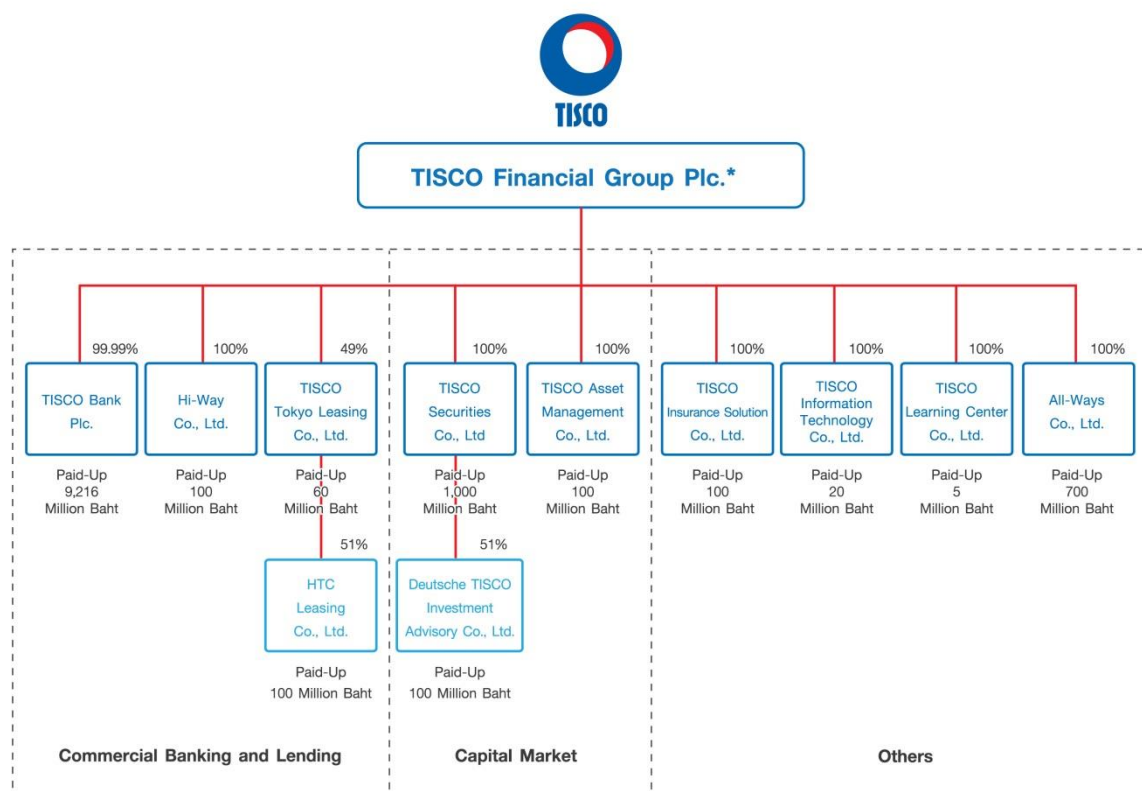
1.2 Important Changes and Developments during the past 3 years

- In 2016, TISCO Bank Public Company Limited and All-Ways Company Limited, the subsidiaries under TISCO Group, have signed an agreement to transfer retail banking business from Standard Chartered Bank (Thai) Public Company Limited whereby the business acquisition was completed successfully on October 1, 2017. TISCO Bank Public Company Limited acquired the retail banking business including mortgage loans, personal loans, business loans, wealth management, bancassurance, and retail deposit business, as well as 4 new bank branches. Meanwhile, All-Ways Company Limited acquired credit card business.
- In 2018, TISCO Bank Public Company Limited and All-Ways Company Limited, the subsidiaries under TISCO Group, entered into agreements for the sale of personal loan portfolio and credit card business with Citibank N.A. (Bangkok Branch). The personal loan portfolio was successfully transferred from TISCO

Bank on June 4, 2018 while credit card business was successfully transferred from All-Ways Co., Ltd. on September 23, 2018.

1.3 Businesses of TISCO Group

As TISCO Financial Group Public Company Limited operates as shareholders in other companies with no other major business, the competitive position can be categorized by business operations of companies in TISCO Group which divided into 2 main businesses: commercial banking and lending business and capital market business which offer various kinds of financial services in order to satisfy diverse customers' needs. TISCO Group's structure as of December 31, 2018 is shown below.



*Listed in The Stock Exchange of Thailand

Details of the juristic person that TISCO Financial Group Plc. held directly more than 10% of their issued shares as of December 31, 2018:

Company/ Head Office's Address	Type of Business	Type of shares	Registered Capital	Paid-up Capital	Issued and paid-up shares	Shareholding by the Company	
						Amount of shares held	Percentage of ownership (%)
TISCO Bank Public Company Limited^{/1} 1 st Fl., TISCO Tower, 48/2 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 6000 Fax. (66) 2633 6800	Commercial Bank	Common	9,215,676,920	9,215,676,920	921,567,588	921,452,229	100.0
		Preferred			104	-	
		Total			921,567,692	921,452,229	
Hi-Way Company Limited 2046/16 New Petchaburi Road, Bangkapi, Huankwang, Bangkok 10310 Tel. (66) 2319 1717 Fax. (66) 2308 7405	Hire Purchase and Leasing	Common	100,000,000	100,000,000	994,500	994,496	100.0
		Preferred			5,500	5,500	
		Total			1,000,000	999,996	
TISCO Tokyo Leasing Company Limited 16 th Fl., TISCO Tower, 48/30 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2638 0900 Fax. (66) 2638 0913	Hire Purchase and Leasing	Common	60,000,000	60,000,000	60,000	29,400	49.0
TISCO Insurance Solution Company Limited 22 th Fl., TISCO Tower, 48/51 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 6060 Fax. (66) 2633 4400	Insurance Selling Agent	Common	100,000,000	100,000,000	1,000,000	999,965	100.0
TISCO Securities Company Limited 4 th Fl., TISCO Tower, 48/8 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 6999 Fax. (66) 2633 6660	Securities	Common	1,000,000,000	1,000,000,000	100,000,000	99,999,998	100.0
TISCO Asset Management Company Limited 9 th Fl., TISCO Tower, 48/16-17 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 6000 Ext. 4 Fax. (66) 2633 7300	Asset Management	Common	100,000,000	100,000,000	1,000,000	999,994	100.0
TISCO Information Technology Company Limited 6 th Fl., TISCO Tower, 48/12 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 4299 Fax. (66) 2633 7600	Service Support	Common	20,000,000	20,000,000	200,000	199,994	100.0
TISCO Learning Center Company Limited 12 th Fl., Zone A, TISCO Tower, 48/20 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 7154 Fax. (66) 2633 7155	Service Support	Common	5,000,000	5,000,000	50,000	49,997	100.0
All-Ways Company Limited 7 th Fl., Zone A, TISCO Tower, 48/13 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 7129 Fax. (66) 2633 7150	Credit Card	Common	700,000,000	700,000,000	7,000,000	6,999,997	100.0
Primus Leasing Company Limited^{/2} 22 nd Fl., Zone A, TISCO Tower, 48/50 North Sathorn Road, Silom, Bangrak, Bangkok 10500 Tel. (66) 2633 7766 Fax. (66) 2633 7600	Proceeding Liquidation Process	Common	3,000,000	3,000,000	30,000	29,998	100.0

^{/1} Core company of TISCO Group

^{/2} in the liquidation process

In addition, TISCO Bank Plc., a core company of TISCO Group, held 10% of issued shares in other companies, all of them are non-listed companies. The investment in such companies is classified as general investment. The details are provided in notes to consolidated financial statement, section 3.4.5 Investments in which a subsidiary company operating banking business holds not less than 10 percent of the equity of the investees

2. Business Operations by Area

TISCO Financial Group Public Company Limited ("the Company"), the parent company of TISCO Group ("the Group"), and its subsidiaries operate two main businesses: commercial banking and lending business and capital market business.

Commercial banking and lending business: TISCO Group conducts commercial banking and related lending services under Financial Institution Business Act and related regulations. The financial services are offered through headquarter and branch network nationwide of TISCO Bank Plc. and subsidiaries.

Capital Market Business: TISCO Group provides securities and asset management services under Securities and Exchange Act.

Revenue structure

The revenue structure of the TISCO Group is as follows.

(unit: Million baht)

	2016		2017		2018	
	Amount	Amount	Amount	%	Amount	%
Interest Income						
- TISCO Bank Plc.	15,185	90.6	15,521	84.4	16,728	83.5
- Hi-Way Co., Ltd.	712	4.2	759	4.1	871	4.4
- Other Subsidiaries	114	0.7	102	0.5	91	0.4
Total Interest Income	16,011	95.5	16,382	89.0	17,690	88.3
Total Interest Expenses	(5,091)	(30.4)	(4,814)	(26.2)	(5,075)	(25.3)
Net Interest Income	10,920	65.2	11,567	62.8	12,615	63.0
Fee and Service Income						
- TISCO Bank Plc.	3,105	18.5	3,266	17.8	3,181	15.9
- TISCO Asset Management Co., Ltd.	1,143	6.8	1,686	9.2	1,523	7.6
- TISCO Securities Co., Ltd.	985	5.9	1,064	5.7	944	4.7
- Other Subsidiaries	135	0.8	329	1.8	691	3.4
Fees and Service Income	5,368	32.0	6,345	34.5	6,339	31.6
Fees and Service Expenses	(230)	(1.4)	(246)	(1.3)	(244)	(1.2)
Net Fees and Service Income	5,138	30.6	6,099	33.2	6,095	30.4
Other Operating Income	700	4.2	728	4.0	1,323	6.6
Total Operating Income	16,758	100.0	18,394	100.0	20,033	100.0

2.1 Area of Services

As the Company operates as a shareholder of other companies (Holding Company) with no other major business, the area of services can be categorized by business operations of its subsidiary companies which can be divided into 2 main businesses including commercial banking business and securities business. In accordance with client centric approach, the service operations of TISCO Group are divided into 4 business pillars namely 1) Retail Banking 2) Corporate Banking 3) Wealth & Asset Management 4) Corporate Affairs & CSR. Details for each service operation are as follows.

1. Retail Banking

Retail Banking group provides 3 service types as follows.

1.1 Retail Loans

Retail loans are conducted by offering loan services to retail customers, which mainly have specific loan purposes for individual consumption. This segment can be classified by loan purpose as follows.

• Hire-Purchase Financing

Hire-purchase financing is operated by TISCO Bank Plc, Hi-Way Co., Ltd, TISCO Tokyo Leasing Co., Ltd and HTC Leasing Co., Ltd allow borrowers to buy assets under hire-purchase terms. The buyer makes a

down payment at the predetermined proportion of asset value and pays equal installment amounts over the contract period. The ownership of assets is then transferred to the buyer after all installments are paid. Contract periods are ranged from 1 to 7 years. A fixed interest rate is charged in line with the market rate on the contract date.

TISCO Group provides hire-purchase loans for all types and models of new and used automobiles. This includes passenger cars, multipurpose vehicles, motorcycles, and commercial vehicles such as sedans, trucks, and trailers. In addition, hire-purchase financing also offers on loans for buying machinery and equipment for commercial purposes such as printing machines and medical equipment.

In 2018, TISCO Group (specified for TISCO Bank and credit granting companies) granted hire purchase loan for new car, ranked by car brands contribution, with 46.0% from Ford, 22.4% from Mazda, and 31.6% of other brands. The proportion of hire purchase loan between new car and used car were 90% and 10%. Amidst high market demand of hire-purchase loans, the TISCO Group has focused to expand the business by enhancing of service quality, offering variety of services, as well as effective control of asset quality rather than engaging in price competition. Additionally, the interest rates charged are competitive and the maximum payment period is in compliance with rules of the Bank of Thailand.

- **Consumer Loans**

Consumer loans are mainly operated by TISCO Bank, providing consumer loans according to market needs with a strong focus on acceptable risk-adjusted return on capital (RAROC). The consumer loans segment has four main categories as follows,

Mortgage Loans are granted to acquire residential property, including multipurpose loans, which use property as collateral to support the client's liquidity. The repayment terms are varied from 3 to 30 years with full collateral. The interest rates of mortgage loans are either floating rate or combination of fixed and floating rate which shall be used fixed interest rate at certain pre-defined period such 1-3 years.

In 2018, the mortgage product namely "Mortgage Saver" was introduced via digital channel to facilitate product information and create brand awareness. Mortgage Saver allows customer to make prepayment in order to reduce mortgage interest while allowing customer to make withdrawals such excess cash anytime without requesting to approve new loan. At the moment, Mortgage Saver is the only mortgage loan in Thailand having this unique feature. As a result, the customers will effectively manage their cash and satisfying diverse demands.

Consumption Loans are operated by TISCO Bank Plc, and Hi-Way Co., Ltd; providing multipurpose loans for individuals and business owners in need of cash flow for various purposes under brand "TISCO Auto Cash" and "Somwang". The loan against vehicle registration has continually enhanced in responses to diverse needs of customer segments covering car, truck and motorcycle. Key feature of loan against vehicle registration includes repayment periods up to 72 months without transfer of vehicle registration as well as allow customer to fully settle entire outstanding debt prior to the due date. To enhance customers' convenience in accessing service, TISCO has expanded branch network of loans against vehicle registration nationwide under Somwang branches. The online channels have provided to enhance customers' service convenience whereby the customer can apply online loan application at websites www.tiscoautocash.co.th and www.somwang.co.th while news and activities of Somwang can be followed at fanpage www.facebook.com/somwangfanpage.

Personal Loans are operated by TISCO Bank Plc. providing multipurpose loans for individuals and business owners in need of cash flow for various purposes. The personal loan portfolio was successfully transferred from TISCO Bank to Citibank N.A. (Bangkok Branch) on June 4, 2018

Credit card are operated by All-Way Co., Ltd. providing loans for individuals and operates card business for sales finance and cash advance. The credit card business was successfully transferred from All-Ways Co., Ltd. to Citibank N.A. (Bangkok Branch) on September 23, 2018.

Customer and Distribution Channels

Target customers of the retail loans business are individuals having regular income or salary with good repayment record. The Group operates retail loans business nationwide through the Bank's headquarters and its branch network and other subsidiary companies.

The car hire-purchase business in TISCO Group is operated by TISCO Bank Plc, and TISCO Tokyo Leasing Co., Ltd while motorcycle hire-purchase is operated by Hi-Way Co., Ltd. TISCO Group has expanded client base towards dealer platform whereby the most of hire-purchase client has regular income and good repayment record. For consumption loans which are operated by TISCO Bank Plc., Hi-Way Co., Ltd and All-Ways Co., Ltd. TISCO Group targets individual customer with adequate repayment ability. At the end of 2018, there were 61 branches of TISCO Bank, 9 branches of motorcycle hire-purchase and 238 Somwang branches under Hi-Way Co., Ltd.

1.2 Bancassurance

TISCO Bank and TISCO Insurance Solution Co. Ltd. have been granted Insurance Broker license from the Department of Insurance under the Ministry of Commerce. TISCO provides insurance brokerage services for both life and non-life insurances covering various types of insurances. TISCO has focused to select and develop both life and non-life insurance products that match with risks and needs of each customer segment towards open-architect platform and the open-architect platform enable the company to select and develop product with the insurance company who is product expertise in the different business area. As a result, TISCO can provide suitable and valuable product for the customer. For non-life insurance, the service includes motor insurance, fire insurance, accidental insurance, critical illness insurance, and miscellaneous insurance. For life insurance, the service includes group-life insurance, health insurance. In addition, TISCO presently partner with several business partners who are the leading insurance companies with strong market presence and financial stability.

In 2018, TISCO emphasized to develop insurance products for retail client. For health care insurance, TISCO launched a new health care protection plan namely "My Care Smart" with variety of coverage options in response to individual needs. TISCO offered insurance premiums discount for corporate staffs who top-up My Care Smart Plan in addition to their company's medical care benefit. Likewise, the Bank launched accident protection plan for elderly whereby it is renewable yearly for life up to 100 years old together with tax deductible benefit. For the hire purchase customer, the Bank has appointed by Ford Sales and Service (Thailand) Co., Ltd. to be official insurance broker serving Ford Ensure, a car protection policy, to all new Ford's customers.

To ensure that the services have complied with market conduct framework, the intensive training program have trained to sales staff by providing knowledge and understanding about the protection benefit, term & condition and exceptions of insurance products. In parallel, TISCO has provided adequate product documentation as well as advisory to ensure that the customers are able to select the suitable products in accordance with their needs and payment ability. In addition, related rules & regulations have been emphasized to all sales staffs while also ensure that sales practice have conducted with fair and transparency customer treatment.

1.3 Commercial Lending

Commercial lending provides commercial credits mainly in small and medium-sized businesses such as inventory financing for car dealers, working capital loans, project finance and hire-purchase and leasing loans for customers in various segments including automobile & parts, logistics, and etc. Moreover, the Bank actively joined hand with Thai Credit Guarantee Corporation (TCG) under government project portfolio-guarantee scheme phase 7 to facilitate small and medium-sized enterprises (SMEs).

2. Corporate Banking

Corporate Banking group provides 2 service types as follows

2.1 Corporate Lending

Corporate Lending service is operated by TISCO Bank. Commercial finance facilities are provided to large corporate clients for commercial purposes, including loans and related services such as guarantees, aval, loan arrangement services and loan restructuring. Commercial lending is classified by the following service types:

- **Working Capital Loans**

Working capital loans fill the need for business liquidity and cash flow, especially for industry and seasonal businesses, by facilitating loans for buying raw materials and inventory, and loans for account payable repayments. They are revolving loans, with repayment terms set for within one year. The terms and conditions of such loans are subject to credit review annually.

- **Project and Term Loans**

Project and term loans fill the need created by medium or long-term business development projects which have a specific purpose. The funding project, as the ultimate source of funds for loan repayment, must be traceable in terms of project progress. This segment mainly consists of term loans which have a repayment schedule in line with the timeline, progress and cash flow of the project. The Bank's policy is to support industry and manufacturing in all business areas, especially ones that support national development. Project and term loans are generally offered for building factories, offices or business expansion, property developments, infrastructure construction, project bids such as power plant or buying industrial machinery.

- **Other Commercial Loans**

Other than the two above-mentioned types, the Bank also provides credit for other commercial purposes such as loans against deposits or liquid assets with short or medium terms using liquidity assets as collateral. This segment includes loans for investment, which are medium or long-term funds which investors use to buy assets, such as property, which they then use as collateral, with the terms and conditions of the loan set according to asset earning ability.

- **Guarantee and Aval Services**

The Bank provides guarantees and aval services for our client's business partners by issuing project bidding bonds, performance bonds and purchase guarantee letters to manufacturers. Terms of letters of guarantee are flexible and made to suit the beneficiary's needs.

- **Loan Consultancy and Related Services**

The Bank provides full-service loan consultation services in such areas as financial structuring and debt restructuring, and is also a syndicated loan arranger, facility agent and security agent.

- **Custodian Service**

The Bank provides custodian service for safekeeping the clients' assets and securities, payment and delivery, and performs the fiduciary duty of acting as custodian for provident fund, private fund, juristic person and individual, including confirmation of net asset value for provident fund.

Customer and Distribution Channels

The target customers are the existing customers who have established long-term relationship with the Bank, and new customers from industries that support economic growth and/or sectors with strong government backing, such as automobile and parts, agriculture and food processing, real-estate, power & utilities, transportation and logistics, and tourist.

The Bank provides corporate and commercial loans towards headquarter in Bangkok. The customer will directly contact through customer relationship officer. In addition, the Bank also participate loan syndication for mega project with other financial institutions both local and foreign bank.

2.2 Investment Banking

TISCO Securities Co., Ltd. is a leader in investment banking service with a long-established reputation more than 49 years in providing the best service to both with corporate and government-related clients. With high caliber and highly experienced professionals, TISCO Securities Co., Ltd. is specialized in many essential industries such as energy & utilities, petrochemicals, telecommunications, transportation & logistics, health care, banking & financial institutions, media & entertainment, and manufacturing, together with a wealth of experience in equity and debt markets, both domestically and internationally. TISCO Securities Co., Ltd. has been approved by the SEC to provide

financial advisory services and granted an underwriting license from the Ministry of Finance. The full range of financial advisory and underwriting services are covering various types of instrument including equity, debt, and convertible instruments. Moreover, TISCO Securities Co., Ltd. also provides financial advisory service for merger & acquisition, privatization advisory and implementation, project financing, debt restructuring, feasibility study, project valuation, and general advisory, etc.

In 2018, TISCO's investment banking was trusted by our customers to provide various financial advisory services including financial advisory and underwriting service for the Initial Public Offering ("IPO"), financial advisory for fund raising, tender offer, merger and acquisition, and company valuation. The highlighted transactions in 2018 included the financial advisor and lead underwriter for the initial public offering of Chememan Plc. (CMAN) totaling 922 million baht; and the financial advisor and lead underwriter for the initial public offering for REIT of Bhiraaj Office Leasehold Real Estate Investment (BOFFICE) with the issue size of 5,153 million baht.

3. Wealth & Asset Management

With an aim to become "Top Advisory House", TISCO offers full range of financial and investment advisory services under the brand "TISCO Wealth". TISCO Wealth provides comprehensive wealth management services including banking, securities brokerage, and asset management to deliver investment solutions for our clients in meeting up with their savings and investment demand. TISCO Wealth's client can be categorized into 3 groups including TISCO Premium, TISCO Platinum, and TISCO Private. These groups are defined by total consolidated portfolio including both investment in fund, securities, and deposits. TISCO Premium is defined as client having total consolidated portfolio of 1 to 5 million baht. TISCO Platinum is defined as clients having total consolidated portfolio of 5 to 20 million baht while TISCO Private is defined as clients having total consolidated portfolio of more than 20 million baht. TISCO Wealth clients are closely serviced by our personal banking officers, wealth managers, and private bankers, who provide deposit services and various types of investment advisory for both onshore and offshore investment.

TISCO Wealth clients enjoy full range of financial and lifestyle privileges including fees exemption on financial transaction services, updates on investment news, investment seminars, and special privileges including birthday privilege, lifestyles events, travelling, healthcare privilege, and special discounts on selected stores.

In 2018, TISCO Wealth continues to focus on its service excellence in being a full coverage investment advisory house. Regarding this aspect, TISCO's Economic Strategy Unit has issued TISCO Investment Portfolio Strategy or TIPS, a comprehensive report covered in-depth analysis of global economy, financial markets, and investment strategy. In parallel, TISCO Wealth seeks and develops foreign investment and trigger funds to deliver the best wealth solutions for the customer. Moreover, TISCO Wealth has emphasized to enhance staff's quality by aiming to acquire Certified Financial Planner (CFP) in the future. To extend service capability, TISCO has introduced one stop service for mutual fund trading via open architecture platform which enable customers to invest with various mutual funds from 10 leading asset management companies including TISCO Asset Management in coupled with fund selection and comprehensive wealth advisory services at TISCO Bank's branches.

Wealth & Asset Management group provides 7 service types as follows:

3.1 Private Banking

Private Banking is in charge of high net-worth clients with deposits and investment portfolio of more than 20 million baht. Private Banking services including deposits, cash management services, professional financial and investment advisory as well as fund management services. In 2018, TISCO Bank continued to provide in-depth investment advisory services covering all investment types and asset classes around the world through professional investment consultant at TISCO Bank branches. In addition, TISCO has regularly arranged investment seminars by TISCO Investment Guru to cater different investors' needs.

3.2 Retail Deposit

TISCO Bank has offered a variety of deposit products such as current account, savings account, and fixed deposits account along with related financial transaction services including issuance of cashier cheque and personal cheque, cheque clearing, and funds transfer.

In 2018, TISCO Bank has continued to focus on its complete range of financial and investment products by offering new savings account targeting retail deposits customers which is TISCO My Savings. TISCO My Savings is a savings account with no requires minimum opening balance, monthly interest payment at maximum deposit rate of 1.85% p.a. Besides, TISCO My Savings offers unlimited deposits, withdrawals, and transfers. Moreover, the Bank has developed TISCO Mobile Banking application for banking transactions via mobile phone including Promptpay, bill payment, as well as conduct purchasing transactions via Thai QR Code anywhere and anytime.

3.3 Private Sales Brokerage

Private Sales Brokerage is operated by TISCO Securities Co., Ltd (“TISCO Securities”), as a member number two on the Stock Exchange of Thailand, offering brokerage services to retail clients through head office in Bangkok including Thonglor Branch and four other branches upcountry including Chiang Mai, Nakhon Pathom, Nakhon Ratchasima, and Udon Thani. In 2018, service foundation of TISCO Securities Co., Ltd is built on quality and client satisfaction while adhering to ethics and service integrity. In addition, client can choose services by placing orders through their designated marketing officers or by themselves through internet channel.

With an aim to expand customer base, enhance trading volume and deploying technology to improve services, TISCO Securities Co., Ltd has continued Banker to Broker initiative with the Stock Exchange of Thailand in which investors can open trading account of both equity and derivatives at TISCO Bank branches. TISCO Securities has developed Mobile Application namely TISCO Guru Plus, a stock investment application in which investors can search for stocks according to their investment style and risk appetite with model portfolio function. It also provides real time research publications whereas the investors are able to set up notifications as needed. The customer can connect with TISCO Securities via Line application: @TISCOeResearch which is an effective information channel. In addition, TISCO Securities has continually promoted marketing activities and provide investment knowledge in Bangkok and key provinces to investors as well as our marketing staffs to attain the best possible service for the customer. Apart from domestic investment, TISCO Securities also provides international brokerage services namely “TISCO Global Trade” to provide investment opportunities for the customer who demands to invest in world-class companies in 5 leading countries including United State of America, Britain, Japan, Hong Kong, and Singapore. The market share of retail investor was at 1.7% in 2018.

Table shows information on TISCO Securities business

(Unit: Million baht)

Information of TISCO Securities Business	2016	2017	2018
Trading values of Individual Customer	206,359.12	206,293.45	186,729.26
Overall Market Share – Company ¹ (%)	2.4	2.6	2.5
Market Share – Retail Customer (%)	1.6	1.9	1.7

¹ SET and MAI excluding Proprietary Trading

Source: TISCO Securities Co., Ltd.

3.4 Institutional Brokerage

TISCO Securities Co., Ltd offers brokerage services to institutional clients through head office in Bangkok. In 2018, TISCO Securities proactively carried out marketing activities by arranging leading corporation's representatives to meet with global investors through Deutsche TISCO Investment Advisory Company Limited, who provide world-class equity research and strategic investment advisory service for domestic and foreign institutional investors. Thus the market share of institution customer was 2.5% comprised of 3.0% from local institution investor and 2.2% from foreign institution investor.

Table shows information on TISCO's Securities Business

(Unit: Million baht)

Information of TISCO Securities Business	2016	2017	2018
Trading values of Institutions Customer	318,798.58	337,049.55	422,419.67
- Domestic	157,520.69	171,316.87	192,077.73
- Foreign	161,277.89	165,732.68	230,341.94
Market Share – Institutions Customer^{/1} (%)	2.7	2.7	2.5
- Domestic Institutions	3.0	3.3	3.0
- Foreign Institutions	2.5	2.3	2.2

^{/1} SET and MAI

Source: TISCO Securities Co., Ltd.

3.5 Asset Management

TISCO Asset Management Co., Ltd. operates provident funds, private funds, and mutual funds management as permitted under its mutual fund and private fund management licenses granted by the Ministry of Finance. Details are provided as follows

• Provident funds

TISCO Asset Management Co., Ltd's provident fund management license covers advisory services for setting up provident funds, and registrar and advisory services for provident fund committees. Fund investments cover wide range of instruments such as bond, debenture, equity and ETFs in line with consent from the respective provident fund committees. Moreover, the mobile application "My PVD My TISCO" was developed to enhance customer convenience. It provides fund information, statement enquiry, as well as support retirement planning.

As of December 31, 2018 there were 116 provident funds accounted for asset under management amounted to 162,127.22 million baht, up by 7.3% (YoY), representing 4,287 companies and 659,225 members. As of December 31, 2018, the provident fund business accounted for a market share of 14.4% putting the company in 2nd place in the overall market, based on net asset value. The breakdown of TISCO Asset's provident fund types is shown below

(Unit: Million baht)

TISCO Asset Provident Fund	2016	2017	2018	% Growth
Single Fund	46,782.57	48,502.87	49,063.20	1.2
Master Fund	84,290.67	102,550.55	113,064.02	10.3
Total	131,073.24	151,053.42	162,127.22	7.3

• Private funds

TISCO Asset Management Co., Ltd provides private fund management services for individuals and juristic persons taking into account the client's risk-return profile in offering a wide range of investment alternatives including equity, fixed income, and mutual funds. The customers receive reports which summarize fund performance on a regular basis. As of December 31, 2018, there were 268 private funds accounted for asset under management amounted to 42,064.87 million baht, increased by 0.5%. As of December 31, 2018, the private funds business accounted for a market share of 4.3%, putting the company in 5th place in the overall private fund market. The breakdown of TISCO Asset Management Co., Ltd.'s private fund types is shown below.

(Unit: Million baht)

TISCO Asset Private Fund	2016	2017	2018	% Growth
Juristic person	15,789.24	30,939.45	31,831.46	2.9
Individual	10,943.71	10,915.82	10,233.41	(6.3)
Total	26,732.95	41,855.28	42,064.87	0.5

• Mutual funds

TISCO Asset Management Co., Ltd provides mutual fund management services for retail investors. Mutual fund units are sold to the general public with due consideration given to finding the right investment type suitable for each investor's needs. TISCO Asset Management Co., Ltd focuses on efficient investment based on continuous research and risk management. It reports fund performance to the public regularly. The asset management companies focused on multi-asset strategy by investing in various assets such as Global Emerging Markets Fund, Global Technology Equity Fund, Global Infrastructure Equity Fund, US Financial Sector Fund and Trigger Fund.

As of December 31, 2018, there were 98 mutual funds accounted for asset under management amounted to 44,869.71 million baht. As of December 31, 2018, the mutual fund business accounted for a market share of 0.9% and ranked 14th in the overall mutual fund market.

3.6 Cash Management Services

The Bank's Cash Management Services include cash inflow and cash outflow management for corporate clients, which ultimately help increase operation efficiency and reduce operating cost for clients. Cash Management Services comprise of three main business areas, TISCO Collection, TISCO Payment, and TISCO Liquidity Management. Additionally, TISCO E-Cash Management was introduced to facilitate customer in performing business transaction and enquiring consolidated account information.

3.7 Mutual Fund Selling Agent

Mutual Fund Selling Agent is operated by TISCO Bank Co., Ltd offering advisory mutual fund products and services via Open Architecture platform for our clients to enjoy benefits from 10 asset management companies, 500 funds including TISCO Asset Management's together with our expertise in wealth advisory service. Additionally, TISCO will also facilitate customer in research and investment strategy to maintaining good return from investment along with the good choice of investment including asset allocation strategy for the customer.

Distribution Channels

TISCO Bank has offered a variety of deposit products with related financial transaction services such as mutual fund and insurance product through head office and 61 branches in all regions of Thailand. Moreover, the Bank offers customer anytime, anywhere to access banking transaction with TISCO Mobile Banking.

Moreover, TISCO Securities offering brokerage services to retail clients through head office and 4 branches along with the service through Application TISCO Guru Plus and Line Application @TISCOeResearch.

In general, TISCO Asset Management Co., Ltd. uses direct market approach as main channel for all fund types. For mutual fund business, the company has additional channels consisting of selling agents from banks, finance and securities companies, as stated in their prospectus. The customers also carry out fund trading transaction via website www.tiscoasset.com.

4. Corporate Affairs & CSR

Corporate Affairs & CSR group aims to promote business operational efficiency while ensuring that business ethics and a strong sense of social responsibility are incorporated into corporate core values. With an aim to achieve sustainable value creation to all stakeholders, TISCO has placed great emphasis on building strong supportive network among our stakeholders, to promote long-term social development, environmental awareness, and arts & cultural support programs. Furthermore, all governance and support functions are centralized at the Company; subsidiary companies shall outsource all such activities back to the Company. These include, but not limited to, the following functions:

- Enterprise Risk Management, Risk & Business Analytics, Investment, Corporate Accounting, Planning & Budgeting, Credit Control, Appraisal & Valuation
- Internal Audit, Corporate Compliance, Operational Risk Management, Legal Office, Credit Review, IT Risk Management

- Corporate Marketing & Communication, Economic Strategy Unit, Corporate Services, Corporate Sourcing & Vendor Management
- Human Resources Management, Human Resources Services

In addition, TISCO also has Treasury department as a unit under the Bank, which is responsible for asset and liability management activities including the procuring of funding sources from local and foreign financial institutions, and investing and trading bonds in order to maximize return under the corporate guidelines and risk policy and in compliance with all related rules and regulations. It also manages liquidity according to the BoT regulations.

TISCO Securities Co., Ltd handles the securities trading business and trades equity securities for company accounts, with an aim to maximize investment return. However, securities trading volume was insignificant because TISCO Securities has maintained its investment policy of long-term return rather than short-term trading gain. In addition, TISCO Securities Co., Ltd actively performs securities trading when the stock market is in favorable condition. TISCO Securities Co., Ltd only invests in good performance and strong fundamental securities to minimize market risk.

2.1 Market and Competition

2.2.1 Commercial Banking Business

• Market

As of December 31, 2018, commercial banking system was totaled 30 banks, comprising of 19 domestically-registered commercial banks and 11 subsidiaries and branches of foreign banks. The conditions of deposits and loans market are detailed as follows;

Deposits

As of December 31, 2018, deposits of 14 domestically-registered commercial banks¹ were at 12,577,810 million baht, up by 3.1% (YoY). At the end of 2018, average 3-month deposit interest rate of the top four large banks remained stable at 0.93% amidst ample market liquidity. In addition, the Bank of Thailand raised the policy rate (Overnight Repo) 1 times in December 2018 from 1.50% to 1.75% p.a. It was the first rate hike in seven years to maintain financial stability and to build up policy space in the future.

Table showing movement of average interest rates of Thai commercial banks

(Unit: % per year)

	2016	2017	2018
Minimum Lending Rate (MLR) ^{/1}	6.26	6.20	6.20
3-month fixed deposit rate ^{/1}	0.93	0.93	0.93

^{/1} Average interest rate at the end of each period of four large banks, i.e. Bangkok Bank Plc., Siam Commercial Bank Plc., Krung Thai Bank Plc. and Kasikornbank Plc.

Net Loans

As of December 31, 2018, net loans of 14 domestically-registered commercial banks were at 11,614,834 million baht, up by 5.0% (YoY) along with domestic economy expansion. At the end of 2018, the average MLR at the top four large banks was at 6.20% per year. The Bank's net loan was 225,559 million baht, reduced by 3.7% (YoY). At the end of 2018, TISCO Bank ranked eleventh in asset. The market share of assets, deposits and net loans were 1.7%, 1.6% and 1.9% respectively.

¹ Summary of Assets and Liabilities Form (C.B. 1.1) Bank of Thailand

Table exhibits comparison of assets, deposits and net loans as of December 31, 2018

(Unit: Million baht)

Commercial Banks	Assets	Market Share (%)	Deposits	Market Share (%)	Net Loans	Market Share (%)
1. Bangkok Bank Plc.	3,008,242	17.6	2,262,490	18.0	1,875,908	16.2
2. Siam Commercial Bank Plc.	2,860,127	16.7	2,156,936	17.1	2,022,277	17.4
3. Krung Thai Bank Plc.	2,656,181	15.5	2,042,948	16.2	1,734,199	14.9
4. Kasikorn Bank Plc.	2,641,150	15.4	1,991,423	15.8	1,823,362	15.7
5. Bank of Ayudhya Plc.	2,049,902	12.0	1,420,893	11.3	1,502,571	12.9
6. Thanachart Bank Plc.	984,124	5.7	753,945	6.0	679,939	5.9
7. TMB Bank Plc.	888,151	5.2	649,575	5.2	652,714	5.6
8. UOB Bank Plc.	525,142	3.1	405,299	3.2	372,178	3.2
9. CIMB Thai Bank Plc.	350,377	2.0	185,215	1.5	209,094	1.8
10. Kiatnakin Bank Plc.	295,137	1.7	182,206	1.4	220,160	1.9
11. TISCO Bank Plc.	290,700	1.7	195,216	1.6	225,559	1.9
12. Land & House Bank Plc.	238,658	1.4	168,171	1.3	158,118	1.4
13. ICBC (Thai) Plc.	199,700	1.2	102,142	0.8	106,306	0.9
14. Standard Charter Bank(Thai) Plc.	151,860	0.9	61,351	0.5	32,449	0.3
Total	17,139,451	100.0	12,577,810	100.0	11,614,834	100.0

Source: Summary of Assets and Liabilities Statement (C.B. 1.1) Bank of Thailand

Car hire-purchase business, the major business of the Bank, generally expanded in line with domestic auto sales growth. In 2018, domestic car sales grew by 19.5% (YoY) to 1,041,739 units attributed to the launch of new car models coupled with aggressive pricing campaigns and attractive loan condition. For year 2018, the total domestic auto sales comprised 38.4% of passenger car and 61.6% of commercial car.

Table showing car sales in Thailand during 2013-2018

(Unit: Vehicle)

Category	2014	2015	2016	2017	2018
Passenger car	369,836	299,309	279,827	346,247	399,657
Commercial car	511,996	500,323	488,961	525,400	642,082
Total	881,832	799,632	768,788	871,647	1,041,739

Source: Automobile Institute

• Competition

For the sector performance, commercial bank industry recorded higher net profit compared to 2017, driven by higher interest income from loan expansion and lower provisioning expenses to cancel out the impact of waiving digital transaction fees as well as the investment for technological development to enhance services. Total outstanding loan expanded by 6.0% mainly driven by the consumer loans. On the loan quality front, NPLs ratio was at 2.93%, close to the year earlier. The asset quality was pressured by weakened asset quality of SME loans as well as high household debt level. Nevertheless, the commercial banks have sufficient loan loss reserves to cushion against the weak asset quality while the capital fund remained solid to support the effective for the new accounting standards (IFRS 9) to take effect in 2020.

In 2018, there was lower degree of deposit competition due to market liquidity remained at high level. The commercial banks launched deposit campaigns from time-to-time to maintain customer base as well as term deposits to maintain cost of fund. In wealth management segment, several large commercial banks have strengthened their private banking and wealth management businesses by forming a partnership with leading global partners to enhance service platform as well as expand investment product offerings. Moreover, the commercial banks announced transaction fees cancellation over digital channels during the early of 2018, which in turn, bolster their digital-based transactions. Driven by changing customer behavior toward digital banking transaction, some of commercial banks have downsized the physical branch networks to reduce operating cost while emphasized more on development and deployment of financial technology to enhance service capability. Hence, TISCO Bank continues to focus on expanding retail deposit customer base by offering board range of savings, investment, and protection products to response with diverse needs of customer as well as improving services to enhance customer convenience. TISCO also enhances quality of wealth relationship manager in order to provide professional financial advisory and planning for different customer risk and investment profiles.

For corporate and SMEs banking businesses, the competition remained intense to maintain the existing customer base as well as expanded new customer. Most of the players adopted pricing strategy and integrated financial solution to serve the customer. Nevertheless, the commercial banks tightened credit policy for SMEs segment to curb the weakened asset quality. Meanwhile, some of corporate customers tend to raise fund from the issuance from equity and debt instrument. TISCO Bank has focused on controlling asset quality as well as preparing to cope with economic uncertainty. Thus, TISCO Bank aims to compete on service quality rather than pricing. The Bank also expands customer base by deploying long experience in the business, excellence operation, and quality service to response with diverse needs of the customer.

For auto hire purchase business, the competitors in auto hire purchase business can be divided into two major groups: 1) commercial bank and leasing company, a subsidiary of commercial bank and 2) subsidiary companies of car manufacturers and car dealers (captive finance companies). For the year 2018, the competition in auto hire purchase market remained intense despite the total car sales was increased by 19.5% (YoY) following new car models from key car manufacturers and strong promotional campaign along with improving economic condition. Meanwhile, the used car sales have been slow down from the previous year due to the strong promotional campaign and low interest rate of new car. Nevertheless, TISCO Group has retained the competitive advantage in new car business from being the key strategic partner with car manufacturers and car dealers of Ford and Mazda. Moreover, Office of The Consumer Protection Board (OCPB) issued the notification of the Contracts Committee regulating hire purchase contracts for automobile and motorcycle hire purchase businesses 2018. The regulation will provide better customer protection and fair treatment by amending some clauses i.e. the calculation of interest rate on late payments, cap on penalty fees for overdue payments, as well as providing hire purchase payment schedule showing all details to the borrowers, and etc. Amidst economic volatility, TISCO Group continues to expand customer base through efficient and high standard of service, long experience in hire purchase business, good relationship with car dealers, effective cost and risk management together with extensive customer database.

2.2.2 Capital Market Business

(1) Securities and investment banking business operated by TISCO Securities Co., Ltd.

- **Market**

At the end of 2018, there are 42 companies¹ who have been granted to operate brokerage business service and 74 companies¹ who have been granted to operate financial advisory service by the office of Securities and Exchange Commission. In 2018, SET index closed at 1,563.88 points, decreased by 189.83 points (10.8% YoY) from 1,753.71 points at the end of the previous year. Meanwhile, the average daily turnover was at 56,409 million baht, increased by 18.1% from 2017. For derivative market, total trading volume increased by 32.2% to 104 million contracts from a year earlier. The average daily volume increased to 426,213 contracts per day, significantly improved from 324,217 contracts per day in 2017. In primary market, there were 19 newly listed companies in SET and MAI markets, 3 property funds

¹ Source: www.sec.or.th

(REITs) and 1 infrastructure fund (IFF). The total offering size of newly listed securities was 81,572.53 million baht, down by 23.2% (YoY).

The capital market in 2018 was highly fluctuated throughout the year resulting from prolonged trade war between US and China, the US Federal Reserve's interest rate raise totaling 3 times, and declining oil price. As the result, the SET index had continuously declined especially in the fourth quarter driven by hefty foreign fund outflow over year in amount 287,696 million baht. Meanwhile, the trading portion of retail investors fallen to 39.6% from 46.0% whereas part of them switch to trade derivative products i.e. Single Stock Future and Block Trade which are favorable during past 2-3 years.

Table shows capital market conditions

	2016	2017	2018
SET index (points)	1,542.94	1,753.71	1,563.88
Market capitalization (million baht)	15,079,272	17,587,433	15,978,252
Trading turnover (million baht)	12,259,772	11,652,311	13,820,220
Average daily turnover (million baht)	50,245	47,755	56,409
Dividend yield (%)	3.04	2.70	3.22
Price to earnings ratio (times)	18.55	19.06	14.75
Number of listed companies on the SET	522	538	545
Volume of derivative contract (contracts)	69,576,164	78,990,574	104,422,200

Source: The Stock Exchange of Thailand

• Competition

Although there are a lot of players in securities brokerage market, the new players still interest to enter the market amidst the brokerage business liberalization. Thus, the brokerage market competition remained intense to maintain and expand market share. Most of market player has adopted price cutting strategy as well as pure online trading brokerage service to reduce operating cost. Furthermore, some of market players adopted revenue diversification strategy through new sources of income including cross-border business activity to expand investment banking business, exclusive partnership with international brokers in order to increase market share in foreign institution and extend to global market services, and new business expansion such as derivatives warrant business, derivatives business, selling agent business, etc. Also many securities companies extensively operated their own proprietary trading to increase trading income. Going forward, the competitive pressure will be significantly increased led by commission fee liberalization in which sliding scale commission fee will be applied to individual investor while freely negotiated commission fee will be applied to institutional client. TISCO Securities Co., Ltd has no policy in aggressive price cutting. However, TISCO Securities Co., Ltd. focuses to serve fundamental investors rather than speculative investors, by producing high quality research article, and developing other services as an alternative for the investor.

For the year 2018, TISCO Securities enhanced service capability of several investments tools. For instance, Stock Scan feature was integrated in TISCO Guru Plus, a stock investment application to increase customer's service convenience. It provides real-time information for all investment demand covering comprehensive stock selection, notify when stocks reach target price and immediately execute orders. Besides, TISCO Securities has provided Aspen Mobile application service that provides graphic technical analysis and real-time online news around the world. For the institutional client business, Deutsche TISCO Investment Advisory Co., Ltd has continually developed research and investment advisory services to serve local and foreign institutional investors. In 2018, TISCO Securities Co., Ltd accounted for a market share (excluding proprietary trading) of 2.5%, ranked 18th place among 38 securities companies.

For the investment banking market, the market competition is intense as there are a lot of market players while market demand is limited. The players have completed in term of price and quality of services. In response, TISCO Securities focused on quality of team, experience, and expertise in financial advisory as well as established long-term relationship with customer.

(2) Asset Management business operated by TISCO Asset Management Co., Ltd.

• Market

For the asset management industry, there are 27 players including asset management companies, commercial banks, securities companies, and insurance companies. As of December 31, 2018, the asset under management of asset management market totaled 7,126,964 million baht, increased by 3.1% (YoY). Furthermore, the provident funds totaled 1,128,848 million baht, increased by 4.3% (YoY) while private funds totaled 989,415 million baht, increased by 17.6% (YoY). Mutual funds totaled 5,008,701 million baht, increased by 0.5% (YoY). The details of industry AUM at year-end of 2016 to 2018 are shown as follows:

Table shows Asset Management Industry AUM

(Unit: Million baht)

Funds	2016	2017	2018
Provident Fund	973,273	1,082,620	1,128,848
Private Fund	746,170	841,078	989,415
Mutual Fund	4,529,538	4,986,212	5,008,701
Total	6,248,981	6,909,910	7,126,964

Source: Association of Investment Management Companies

• Competition

In 2018, overall performance of provident fund business has continually grown amidst intense market competition. The top-market share asset management companies have carried out aggressive marketing campaigns by offering price, variety of funds, and fund performance to attract the customer. In addition, several asset management companies have developed mobile application which enable customer to change investment policy while also serve as a channel providing specific investment advisory for individual customer.

In provident fund business, TISCO Asset Management Co., Ltd (TISCO ASSET) has continued to maintain its market share and leading market position with the highest number of corporate accounts. In 2018, the number of leading corporates that newly assigned TISCO ASSET as their provident fund manager was more than 300 companies, e.g. Sammitr Motors Manufacturing Plc., Thai Packaging Industry Plc., Hitachi Consulting (Thailand) Group and etc. Also there were funds transferred to TISCOASSET such as Asia Capital Group Plc., Silom Medical Co.,Ltd., IT One Co.,Ltd., Daikin Airconditioning (Thailand) Co.,Ltd. and Thai Dairy Co.,Ltd. etc. At the end of 2018, total provident fund under management was 162,127 million baht.

In 2018, TISCOASSET has joined as a partner in "Happy PVD Company" project with the Securities and Exchange Commission Thailand in cooperation with The Stock Exchange of Thailand, the Association of Investment Management Companies and the Association of Provident Fund. The main objective of the project aims to encourage employees to give a priority to long-term savings for a good quality of life after retirement. Moreover, recently TISCO ASSET has won the award of "Best Provident Fund Provider Thailand 2018" from Global Banking and Finance Review. The award reflects our good provident fund performance and excellent services.

For mutual fund and private fund businesses, despite the capital market in 2018 was highly fluctuated from various factors i.e. prolonged trade war between US and China, the US Federal Reserve's interest rate hike, the fluctuate currencies of emerging markets, and etc. causing investors to remain cautious and allocate their investment to lower risk assets. In 2018, mutual fund industry slightly increased by 0.5% (YoY) with total AUM of 5 trillion baht. According to the proposal of the Ministry of Finance in August 2018, the cabinet agreed to impose 15% withholding tax on the gains from investment in fixed income fund which lower the return on investment in fixed income fund.

Despite an unfavorable and highly volatile investment climate in 2018, TISCO Asset was seeking the investment opportunity to launch new investment products responding to diverse investment demand. For instance, TISCO India Active – a mutual fund focuses on India equity market, TISCO Global Income – a mutual fund focuses on allocating investment among global set of assets for moderate risk investor, TISCO Global ESG – a mutual fund focuses on selected companies that pass ESG screening criterion. Amidst highly volatile equity market, TISCO launched 7 trigger

funds that investing in both domestic and foreign capital markets i.e. China and Japan equity markets as well as specific sector investment i.e. technology sector.

For private fund business, the industry growth remained high driven by the fund inflow from institution clients amidst low interest rate environment. However, the intense price competition still persisted in this client segment. Thus, TISCO Asset Management avoided competition in this segment but focusing on individual clients which have different preference from institution client. The most of individual clients have higher risk tolerance, considering on creditability of organization, investment advisory service, as well as service capability of fund management team rather than considering only competitive price. In sum, private fund as of December 31, 2018 slightly increased to 42,065 million baht from 41,855 million baht after growth over 50% in 2017.

Table shows the TISCO's asset under management by type of fund business as of December 31, 2018

Funds	Net asset under management (Million baht)	Market Share (%)	Market Rank
Provident Fund	162,127.22	14.4	2/16
Private Fund	42,064.87	4.3	5/24
Mutual Fund	44,869.71	0.9	14/23
Total	249,061.80	3.5	8/27

Source: Association of Investment Management Companies

2.2 Resources

1) Sources of Fund

Apart from the Group's capital, most of the Group's and its subsidiaries' funds are sourced from deposits, interbank and money market and short and long-term borrowing. The details of sources of funds are as follows

(Unit: Million baht)

Sources of Fund	2016	2017	2018
Deposits ¹	161,034.44	188,280.76	198,985.23
Interbank and Money Market Items	5,196.60	4,017.51	4,374.67
Debentures	64,362.00	63,601.70	49,680.00
Other Liabilities	9,353.82	12,756.67	11,675.28
Total Sources of Fund from Liabilities	239,946.86	268,656.64	264,715.18
Capital	31,325.54	34,731.76	37,829.45
Total Sources of Fund	271,272.40	303,388.41	302,544.63

As of December 31, 2018, list of assets and liabilities breakdown by term to maturity is shown in the following table:

(Unit: Million baht)

Transactions							
	At call	0 – 3 months	3- 12 months	1-5 years	Over 5 years	Unspecified	Non-performing loans
Financial assets							
Cash	1,192	-	-	-	-	-	-
Interbank and money market items	1,956	52,115	-	-	-	-	-
Derivatives assets	-	6	-	-	-	-	-
Investments – net	-	5,507	1,948	188	-	1,369	-
Loans to customers	2,369	17,615	45,562	122,796	46,079	-	6,876
Securities and derivatives business receivables	-	949	-	-	-	-	-
Receivables from clearing house	-	115	-	-	-	-	-
	<u>5,517</u>	<u>76,307</u>	<u>47,510</u>	<u>122,984</u>	<u>46,079</u>	<u>1,396</u>	<u>6,876</u>
							<u>306,642</u>

¹ Total deposits including short-term borrowings

<u>Transactions</u>	0 – 3		3- 12	Over 5		Non-performing		Total
	At call	months	months	1-5 years	years	Unspecified	loans	
<u>Financial liabilities</u>								
Deposits	58,382	68,914	61,874	3,938	-	-	-	193,108
Interbank and money market items	520	1,470	140	2,245	-	-	-	4,375
Liabilities payable on demand	238	-	-	-	-	-	-	238
Derivative liabilities	-	5	6	-	-	-	-	11
Debts issued and borrowings	37	15,840	21,000	12,000	6,680	-	-	55,557
Securities and derivatives business payables -net	-	995	-	-	-	-	-	995
Payables to clearing house	-	61	-	-	-	-	-	61
	<u>59,177</u>	<u>87,285</u>	<u>83,020</u>	<u>18,183</u>	<u>6,680</u>	<u>-</u>	<u>-</u>	<u>254,345</u>
<u>Commitment and contingent liabilities</u>								
Avals to bills and guarantees of loans	2	250	38	18	-	446	-	754
Other commitments	-	1,318	623	495	-	351	-	2,787

Details of risk of duration mismatch are described in Part 1 Section 3: Risk Factor.

2) Lending

- **Credit granting policy**

Commercial loans

TISCO Group (specified for TISCO Bank and credit granting companies) has a policy to emphasize prudent growth in commercial and retail lending. In each new credit approval, the Bank thoroughly considers the borrower's business potential, opportunities, ability to repay, collateral, and also the rate of return that justifies the risk of each borrower. TISCO Group focuses on expanding business into markets with acceptable risks/returns in which it has sufficient expertise. TISCO Group performs analysis and key risk characteristics prior to entering new markets.

The collateral policies vary, depending on the type of credit. Prudent collateral policies are employed with effective procedures to stabilize collateral values under the specified conditions and to minimize potential losses. However, TISCO Group may selectively grant loans without collateral to certain borrowers considered to have high creditworthiness on a case-by-case basis. For the appraisal of collateral values, the Bank has a policy to have the collateral appraised by an independent appraiser or the internal asset appraisal unit before any loan can be drawn. TISCO Group's Appraisal Sub-Committee is responsible for approving the appraisal value proposed by the internal unit and independent appraisers under the company's guidelines in compliance with the regulations of the BoT.

TISCO Group has established prudence procedures for all credit approvals to ensure high credit quality while maintaining customer satisfaction. Approved credits are reviewed and controlled in compliance with overall credit policies.

The maximum credit terms are set according to the regulations of the BoT. TISCO Group has constructed a pricing policy aligned with current market conditions and credit exposure as well as the cost of funds without any price undercutting strategy.

Retail loans

The hire-purchase business covers a large portion of the retail credit portfolio. TISCO Group has a policy to aggressively expand its hire-purchase business in this market with justified risk-adjusted returns. TISCO Group has established a standard approval process for the hire-purchase portfolio and other retail loan portfolios by systematically implementing a credit-scoring system which has been developed from an internal database to effectively control and shorten the loan approval process.

Credit policies have been regularly reviewed to reflect the current market situation and support loan expansion in a prudent manner. Nevertheless, overall customers still have appropriate risk-adjusted return. Meanwhile, TISCO Group has a policy to maintain good credit quality compared to competitors without resorting to a price-cutting policy. In this respect, the focus on enhancing quality of service and good business relationships is a vital competitive tool. For the collateral policy, hire-purchase assets are supported by adequate secondary markets and appropriate insurance strategies.

For mortgage loans, the approved credits do not exceed 90% of the collateral value with terms and conditions varying with the types of collateral, while other retail loans without collateral require higher interest rates to offset the higher risk being assumed.

- **Credit Approval Limits and Authorities**

The Credit Committee is responsible for overseeing the credit approval process under the credit policies and guidelines set forth by the Executive Board.

In addition, credit approval policies have been clearly stated in terms of credit limits and delegation of authority. All corporate loan transactions must be reviewed and approved by the Credit Committee while loan facilities considered material and large in size must be approved by the Executive Board.

For the retail credit portfolio, which naturally covers small transaction sizes, the credit approval process and delegation of authority varies according to the level of credit limit as controlled by overall credit policies. Large retail credits must be approved by the Credit Committee or the Executive Board after reviewing the types and purposes of loans on a case-by-case basis.

For hire purchase business, TISCO has also implemented a credit-scoring system to assist the loan approval process in which customer characteristics, loan terms and conditions are taken into consideration for the computation of credit scores.

- **Credit Risk Management**

The Risk Management Committee of the Bank, comprised of senior management from key business lines, has been delegated the authority to set up policies, guidelines and procedures for overall credit risk management. Meanwhile, the Credit Committee and Chief Credit Officer, who are in charge of the loan approval processes of each credit transaction, set up guidelines for the delegation of approval authority at different levels for different types of facilities. The Problem Loan Committee is set up to monitor and follow up on problem loans and set up appropriate provisions for potential loan losses. Moreover, Risk Management Committee will report risk management activities to the Risk Management Committee of TISCO Financial Group Public Company Limited, the parent company, on a regular basis in compliance with Consolidated Supervision principle of the Bank of Thailand.

To ensure independence in carrying out the credit approval process and reporting to the Risk Management Committee, credit quality control functions are clearly separated from marketing functions. Moreover, credit review functions assigned by the Internal Control function and the Audit Committee are responsible for reviewing ongoing credit approval processes and ensuring transparency in overall credit granting procedures.

A credit grading system has been adopted in credit risk assessment for both corporate and retail credit portfolios in accordance with the implementation of the Internal Ratings Based approach (IRB) resulting in more efficiency in capital utilization in the long term.

In controlling risks from credit concentration, TISCO Group has set up a concentration limit which defines the maximum credit exposure for each individual borrower or borrowing group. Moreover, concentration in a single sector is also controlled within an acceptable level, and considered in combination with the sector exposure of equity investment. Furthermore, TISCO Group complies with the regulations of BoT concerning single lending limits.

- **Credit Collection**

TISCO Group regularly performs credit reviews of the loan portfolio and monitors problem accounts. The Credit Committee closely co-ordinates with credit departments, and follows up accounts with potential problems promptly after a missing repayment is reported. Also, Problem Loan Committee meetings are arranged to review the status of borrowers, set up debt collection schedules and follow-up procedures, pursue legal action, and set aside provisions for loan losses. In the follow-up procedures, the credit officer reports to the Problem Loan Committee on all restructure cases on a regular basis.

For the retail credit portfolio, TISCO Group strives to continuously improve the strategies and procedures for debt collection and follow-up, in line with economic conditions and related laws and regulations, particularly with regard to notification from the Office of Consumer Protection. The main collection and follow-up process includes collection, follow-up and asset repossession, legal process and enforcement.

- **Debt restructuring**

The objective of debt restructuring is to resolve problem loans, which are affected by economic downturns or the borrower's financial difficulties. Under TISCO Group's procedures on debt restructuring, there are various methods such as relaxing of payment conditions, debt-to-assets conversion, debt-to-financial-instruments conversion, and debt-to-equity conversion.

Debt restructuring can be conducted with every type of borrower, either defaulted or non-defaulted. The corporate lending function is responsible for the debt restructuring process, including the decision to select borrowers for restructuring. The delegated officers will evaluate the borrower's credit qualities and related financial and operating environments, and perform projections on repayment possibilities.

For debt restructuring cases related to, both directly and indirectly, Bank directors, persons related to TISCO Group directors or the management, the borrower's status, repayment ability and cash flow status must be evaluated by an independent financial institution or third party with no conflict of interest with the bank and the borrower. Under the regulations of the Bank of Thailand, all restructured loans are reclassified, provisioned, and recalculated for impairment loss.

(3) Capital Adequacy

The Group has a policy to maintain capital that is adequate to safeguard against company risks in the long run, taking into account long-term solvency within economic uncertainties and the adequacy of regulatory capital-to-risk asset ratios as required by law. Currently, the Bank of Thailand sets the capital adequacy ratio for banks registered in Thailand at 10.375%, where Tier-I Capital must be maintained at a level equal to at least 7.875% of risk assets.

The capital base of the Group remains strong with the Capital Adequacy Ratio exceeding the requirements of the BOT and fairly sufficient to support the forthcoming regulations concerning debt reclassification and provisions.

(4) Liquidity Management Policy

The Risk Management Committee is responsible for monitoring and determining assets-to-liabilities direction and funding structure in detail. The Committee also establishes various liquidity limits to serve as early warning triggers such as liquid assets, contractual maturity mismatches, funding concentration and daily deposit/withdrawal levels. Furthermore, a liquidity contingency plan has been established for outlining clear procedures and responsibilities in detail for liquidity management in times of crisis.

Meanwhile, the Treasury function is responsible for daily liquidity management and preparation for securing sources and the use of funds as required. The Treasury function is also responsible for managing the Bank's liquidity position to comply with internal guidelines and the regulatory requirements of the BoT.

(5) Asset Classification, Provisions and Write-offs

The Group defines asset classifications according to the notification of the Bank of Thailand regarding worthless or irrecoverable assets and doubtful assets that may be worthless or irrecoverable as follows:

- (1) Assets classified as Loss are claims where there is no possibility of repayment due to death, disappearance, bankruptcy or dissolved business, or losses from debt restructuring according to the rules and regulations of the Bank of Thailand.

- (2) Assets classified as Doubtful-to-Loss are assets or claims whose entire value is expected to be irrevocable, such as debt claimed on the principal and interest overdue more than 12 months from the payment date.
- (3) Assets classified as Doubtful are assets or claims that are unlikely to be repaid in full, such as debtors with payments overdue more than 6 months from the contractual payment date.
- (4) Assets classified as Sub-Standard are defined as assets or claims with difficulties of repayment or that do not generate a reasonable income, such as debtor-owing interest and/or principal payments for a cumulative period of over three months from the contractual due date.
- (5) Assets classified as Special Mentioned are assets or claims whose value is deteriorating, such as debtor-owing interest and/or principal payments for a cumulative period of over one month from the contractual due date.
- (6) Assets classified as Pass are assets or claims which are not classified as Loss, Doubtful to Loss, Doubtful, Sub-Standard, or Special Mentioned.

The Group has a conservative provisioning policy. As of December 31, 2018, the Bank's reserves were 11,051.80 million baht, or 239.3% of those required by the BoT. Our asset classification policies are in compliance with those set by the Bank of Thailand and the Securities and Exchange Commission as presented in Part 1 Section 4: Operating Assets item: 4.2

Securities Business operated by TISCO Securities Co., Ltd is detailed as follows:

(1) Sources of fund

The sources of funds are mainly from equity, operational cash flow and loans from financial institutions for working capital purposes.

(2) Credit approval and authorization

TISCO Securities Co., Ltd. has a credit approval policy to screen qualified customers as well as to provide customers with a good understanding of securities trading. The credit line for a particular customer will be based on the customer's financial status and collateral. The Executive Board of Directors has granted credit approval authority to the Credit Committee. The Credit Committee approves high volume credit lines by itself and has granted lesser authority to management responsible for approving general credit lines complying with the Credit Committee's guidelines and policy.

(3) Margin trading accounts

All clients of securities brokerages are cash accounts.

(4) Investment Policy

For listed equity, TISCO Securities Co., Ltd. has a policy to invest in businesses with strong fundamentals by considering liquidity, risk and return on securities and the diversification of its portfolio. As for non-listed equity, the Company has no policy to enlarge this portfolio, but will exploit market opportunities for selling the existing securities at the highest price. For debentures, TISCO Securities Co., Ltd. holds them only for liquidity reserve purposes. For unit trusts, the company holds them as a short-term and a long-term investment depending on their investment policy and fund performance. Moreover, the company has a policy to invest in derivative instruments to earn gains from trading and for risk management purpose upon investment climate in the stock market.

Investment policy complies with the guidelines and policies of the Risk Management Committee, which consists of key executives. This committee determines the investment policy, size of investment portfolio, maximum limits for daily securities trading, and the loss limit.

(5) Capital Adequacy Ability

The Net Capital Rule (NCR) ratio of TISCO Securities Co., Ltd. as of December 31, 2018 is 105.91%, well above the 7.0% regulatory requirement of the SEC.

3. Risk Factors

Overview of Risk Management

TISCO Group places great importance on effective risk management and controls. By establishing an overall risk management framework, including policy objectives for all risk-related transactions, TISCO Group is able to increase awareness, accountability and efficiency in enterprise-wide risk management as well as maintain best practice standards and high-quality corporate governance. In addition, TISCO Group aims to maximize sustainable risk-adjusted return for shareholders over the long run.

Risk Management Policy

Overall risk management policy, as a standardized operation for TISCO Group's risk management, encompasses the following structures:

1. Consolidated and centralized risk management

Risk management infrastructure is centralized by consolidating risk exposure from all subsidiaries under the Company through careful risk assessment and the establishment of appropriate risk guidelines and procedures.

2. Business line accountability, independent risk oversight

Each business line is accountable for managing its own risks in the best interests of TISCO Group while complying with risk management policies, guidelines, and procedures. Independent risk oversight and check-and-balance system have been established to ensure that risks are adequately monitored and controlled.

3. Comprehensive risk assessment

Risk assessment is performed comprehensively in all key activities. Risk assessment methodologies may range from basic approaches such as expert judgments to more advanced approaches such as quantitative and statistical analysis, depending on the size and complexity of the risks involved. These assessments are in turn supplemented by fundamental risk analysis and stress testing of extreme risk events.

4. Capital management based on standardized risk tools

Capital represents the ultimate interests of the shareholders. All risk exposures are quantified into a standardized risk measure called Risk Capital based on Value-at-Risk (VaR) concept which can relate risks to the amount of capital required to protect against them according to predefined risk limits. The process of risk assessment under Risk Capital is considered as part of Internal Capital Adequacy Assessment Process (ICAAP) of TISCO. Risk capital enables management and business line managers to understand the level of risks being taken in a meaningful manner. Risks from different levels are integrated to produce an overall risk picture of the Group, which is used for capital adequacy planning and strategic capital allocation both at the corporate and business unit level.

5. Risk Tolerance Level and Capital Allocation

The total risk capital shall not be in excess of available capital fund of the Group where qualitative risk tolerance level shall be applied for non-capital based assessment. Risk Capital shall determine the economic capital adequacy of TISCO, which the available capital is also allocated to the business and operating units such that the capital adequacies to undertaken risk are ensured both at the corporate- and business-unit-level.

6. Adequate return for risk and risk-adjusted performance management

To promote shareholder value creation, risk components are incorporated into business performance measurements with the objective of maximizing risk-adjusted returns for shareholders. Product pricing takes into account varying risks to ensure overall profitability. Business expansion is advocated in the areas where marginal risk-adjusted returns are in excess of the marginal risks.

7. Portfolio management, diversification and hedging

Risk diversification is a key risk management principle in all business activities. Diversification is considered and adopted by management and business line managers both at the portfolio and transaction levels as an effective approach to reducing the aggregate level of risks in accordance with certain guidelines and limits.

8. Strong Risk Awareness Culture

Awareness and understanding of risks and risk management are important for the accountability of risk management. Business heads are expected to have a high degree of awareness and understanding of the risks in their accountable areas and how they contribute to the overall risk of the corporate as a whole.

9. Effective Risk Modeling and Validation

Risks shall be modeled as forward-looking measures that reflect potential likelihood and impact on the intrinsic value of TISCO assets, liabilities, or businesses. Mark-to-market practice shall be adopted in all portfolios as appropriate, where independent validation from risk management shall be adopted in the case of high complexity in valuation. Key risk models with sufficient information shall be validated through a systematic back-testing process or other prudent statistical tools.

10. Regulatory best practice

TISCO Group has adopted risk management policies and guidelines that comply with all regulations and best practice standards of the Bank of Thailand (BoT), the Securities and Exchange Commission (SEC) and other regulatory authorities.

11. New Business or Product

All new businesses or products shall be approved by the portfolio risk authority and relevant specific-area risk authority according to the procedure outlined in the risk management guideline. New business or product will be evaluated in terms of its risk-reward characteristics, the contributions to the overall corporate risk profile, and the consistency with corporate capital capacity.

12. Related Party Transaction

All business transactions among TISCO Group and related party shall be on a similar basis with same treatment of regular customers. Additionally, the related transaction shall be transparent and auditable. Meanwhile, the proportion of business transaction among TISCO Group shall be controlled under regulatory guideline.

13. Stress Testing

Stress testing is a procedure to assess the impact on the company's financial status under extreme risk events. Stress testing process is designed to be as a supplementary tool for the analysis of credit risk, market risk and funding risk. Risk Management Committee is responsible to oversee the framework for stress tests. The Committee will establish guidelines and key required assumptions to perform stress tests based on the appropriate framework. Meanwhile, Risk Management Function is responsible to facilitate all related business units in order to perform periodically stress tests, and report the stress testing results as well as the recommendations on any important aspects to the Risk Management Committee. Stress testing assessment and results shall be integrated to setting and evaluating the internal management strategy which may involve reviewing the need for limit changes or developing contingency plans.

Risk Management Framework

In accordance with enterprise-wide risk management policies and objectives, risk management and internal control have been monitored and controlled by the Board of Directors of the Company with the delegation to the Executive Board of Directors of the Company. An effective management process has been established for assessing and managing all firm-wide risk exposures at both the portfolio and transactional levels to ensure the financial soundness and safety of TISCO Group. Senior management and relevant business advisory committees oversee the entire risk management framework and strategy for all business areas supported by planning and budgeting function. Risk Management Committee, supported by enterprise risk management, risk and business analytics, operational risk

management, and IT risk management functions, are set up to oversee that enterprise-wide risk management of the group is undertaken according to the same standard. Specific-area risk authorities are then established to manage in-depth, transaction-level risks in each particular area, such as the Credit Committee, Problem Loan Committee, and Compliance & Operation Control Committee. These mechanisms are in turn supported by the credit control and other supporting functions, governing compliance, and legal office. Business lines are fully accountable for managing their own risks within the policy guidelines established by the Risk Management Committee and specific-area risk authorities. All the business operations are under the risk limit approved by the Risk Management Committee including new business analysis in each business line. Additionally, risk limits triggered as well as new businesses shall be reported monthly to the Risk Management Committee for acknowledgement. However, to enhance the overall risk management system, the risk management system shall be audited and reported to the Audit Committee which directly reports to the Board of Directors.

In the present, Information Technology (IT) is involved as integral part of business to serve business needs and being customer channels to access information and services as known as Financial Technology (FinTech), in addition to several laws and regulations which have been announced for IT good governance.

In year 2018, TISCO Group set up IT Risk Management function to support risk management committee regarding to IT risk as integral part of operational risk and IT Risk Committee in specific-area risk authorities to manage in-depth and transaction-level of IT risks.

The roles and responsibilities of the relevant committees and risk management authorities are described as follows:

- Board of Directors

The Board of Directors of the Company shall ensure the institution of effective risk management system of the Bank and ensure that the Company has adopted and adhere to TISCO Group Risk Management Policy. The Board has assigned Executive Board the task of overseeing and monitoring risk management activities. This is achieved by setting risk limits and risk appetites, and ensuring the establishment of effective risk management systems and procedures in accordance with the standard practices of risk identification, assessment, monitoring and control, all of which are in line with the Audit Committee standards.

- Board of Directors of Subsidiaries

Under consolidated supervision framework, the Board shall ensure that each subsidiary adopt and adhere to TISCO Group Risk Management Policy approved by the Board of Directors of the parent company. The Board will appoint other committees according to the needs and suitability to carry out specific tasks to ensure that the operations are in compliance with established Corporate Governance Policy and report risk management activities and financial performance to the parent company's Executive Board on a regular basis, in compliance with the Consolidated Supervision Principle of the Bank of Thailand.

- Risk Management Committee

The Risk Management Committee of the company, comprising the senior managements from the TISCO Group, has been delegated from the Executive Board of Directors of the company in charge of the formulation and implementation of enterprise-wide risk strategies and action plans in connection with risk management policies and guidelines. The Risk Management Committee meeting is regularly held once a month. Enterprise risk management, risk and business analytics, operational risk management, and IT risk management functions support the Risk Management Committee in setting up and monitoring risk management policies and guidelines and performing enterprise-wide risk management activities through research, assessment, and reporting process. Moreover, Risk Management Committee of TISCO Bank has also been established in effective management and control of risks in various business units of the bank by adopting the risk management policy from the parent company. Under consolidated supervision principle of the Bank of Thailand, Risk Management Committee of TISCO Bank directly reports to the Risk Management Committee of the company.

- Specific-Area Risk Authorities

Specific-area risk authorities are set up to address in-depth risk management and controls at the transaction level. Key specific-area risk authorities include the Credit Committee and Problem Loan Committees, which are in turn supported by the credit control in overseeing credit approval and risk management. In addition, Executive board of Directors of the bank and Board of Directors of other credit-granting subsidiaries shall control and follow up all specific risk areas which are directly reported to the Board of Directors of the bank as well as the Board of Directors of the company on a regular basis.

Risk Types

Risk management of TISCO Group considers five risk factors which are 1) Credit Risk 2) Liquidity Risk 3) Market Risk 4) Operational Risk and 5) Strategic Risk. Details are shown in item 3.1-3.5

The overall risk of TISCO Group is at a manageable level, with amount of capital fund remaining strong for further business expansion which has already been assessed by the Bank of Thailand. Moreover, TISCO Group has guidelines for risk management according to each type of risks.

Additional details are shown in Part 3 Section 14: Management Discussion and Analysis

3.1 Credit Risk

Credit Risk is defined as the possibility of obligor's failure to meet the contract agreement with TISCO Group. If the failure occurs, it requires the Bank to maintain higher provisions for loan losses. As a result, it adversely impacts net income and capital of TISCO Group.

3.1.1 Default Risk

Default risk occurs from lower credit quality. As of December 31, 2018, NPL ratio of TISCO Group increased from 2.32% at the end of 2017 to 2.86% at the end of 2018, mainly resulting from the revision of loan classification criteria to be more stringent for installment loan in accordance with prudent credit control policy, despite the clients' repayment behavior and overall asset quality that remained stable. Moreover, in order to prevent rising credit risk, an increase in expected loss was also absorbed by the provision expense set up during the year, with prudently managed non-performing loans (NPLs) including advanced risk management tools and stringent practice of loan collection, debt restructuring and write-off process. Additionally, NPL ratio of retail loan increased from 2.74% at the end of 2017 to 3.36% at the end of 2018, where NPL ratio of corporate loan increased from 0.94% to 1.32%. Total NPLs was 6,876.21 million baht which increased by 18.0% or 1,046.85 million baht. NPLs of the Bank were 6,309.06 million baht, where NPLs of other subsidiaries amounted 567.14 million baht.

TISCO Group has applied collective approach for loan loss provisioning to the car hire-purchase portfolio following the Basel III framework. The loan loss reserve was derived from the best estimate of expected credit losses from the portfolio over the next 12 months, based on historical loss data incorporating with adjustment for the recent market situation. In 2018, TISCO Group has utilized portion of general reserve to compensate the potential losses in the future. Meanwhile, as of December 31, 2018, loan loss reserve of TISCO Group was 11,673.64 million baht, or 169.8% of NPLs. Total loan loss reserve of the Bank was 11,051.80 million baht or accounted for 239.3% of loan loss reserve required by the Bank of Thailand, reflecting the prudent provisioning policy to mitigate potential risk.

3.1.2 Concentration Risk

Concentration risk is the risk from borrower concentration. As of December 31, 2018, hire purchase and commercial loans represented 54.4% and 18.7% of the total credit portfolio, respectively. The hire purchase portfolio, of which concentration was very low, had 130,861.49 million baht of loan outstanding. Top-10 borrower exposure of hire purchase portfolio stood at 670.13 million baht or 0.5% of the total hire purchase portfolio, or equal to 0.2% of the total credit portfolio.

For the commercial loan portfolio, it was diversified into four different sectors: manufacturing and commerce, 9,699.49 million baht; real estate and construction, 11,386.13 million baht; public utilities and services, 23,289.33 million baht; and agricultural and mining, 673.77 million baht. Lending to the above industrial sectors represented 21.5%, 25.3%, 51.7%, and 1.5% of the total commercial loan portfolio, and 4.0%, 4.7%, 9.7%, and 0.3% of the

total credit portfolio, respectively. As top-10 borrower exposure stood at 34,417.96 million baht or accounting for 11.8% of the total credit portfolio, there is slight concentration in public utilities and services as well as manufacturing and commercial sector which have been managed under risk management procedure. Moreover, commercial loan portfolios are almost fully collateralized. In loan approval process, appropriate proportion of collateral value and financing amount is maintained to ensure that risks were kept within a manageable level. Furthermore, collateral values will be regularly appraised and effective loan drawdown procedure has been implemented. Portfolio credit quality was closely monitored.

3.1.3 Collateral Risk

Collateral risk occurs from borrower defaults and the value after selling collaterals in the debt collection process cannot cover the original debt amount. As of December 31, 2018, lending portfolio of TISCO Group came mostly from TISCO Bank whereby 77.9% of the portfolio was asset backed or with collateral. For the hire purchase portfolio, the underlying asset under the loan agreement itself is still owned by TISCO Group. In case the borrowers of hire purchase loans cannot meet the terms and conditions, TISCO Group can follow up and seize the underlying assets immediately. After repossession, the process of asset liquidation can be completed within one month.

A major risk factor in the hire purchase business depends on the market value of used cars. A substantial decrease in the market value of a used vehicle results in credit loss, which directly affects the net income and capital of TISCO Group. Market prices for used cars depend on such diverse factors as market demand, type, brand, and tax regulations.

According to the past records, the recovery rate for asset liquidation in the secondary market was somewhat high at 70%-90% of the remaining net financing amount, which helped in absorbing losses from defaulted loans. TISCO Group has attempted to minimize credit risk by regularly updating its information regarding trends in the used car market, requiring high-value collateral, sufficient average down payment, and favoring well-known brands in the secondary market.

For commercial and mortgage loans, most collateral extended as loan guarantees was in the form of real estate, of which the value could be deducted for the purposes of loan loss provisioning. Collateral values were appraised according to regulations of the Bank of Thailand. The proportion of collateral value used in deducting the provisioning requirements for NPLs was 75.8% of the NPLs of commercial loan and mortgage loan.

Generally, the risk of real estate value changes depends on economic conditions. A recession in the Thai economy might result in lower values, which would require TISCO Group to reserve higher loan loss provisions. Moreover, the legal process of collateral acquisition through related laws and enforcement is both costly and time consuming. However, all pending cases are closely monitored on a regular basis.

3.1.4 Property Risk from Foreclosed Assets

Property risk from foreclosed assets is the impairment of assets transferred from loans, hire purchase receivable on which debtors had defaulted on their repayment obligations under the loan contracts or restructured receivables. The value of repossessed assets is stated at the lower of cost and net realizable value. Outstanding assets in the process of liquidation held by TISCO Group as of December 31, 2018 were worth 10.86 million baht, or 0.004% of total assets. Allowances for impairment stood at 52.2% of total foreclosed assets.

▪ Credit Risk Management Framework

The Risk Management Committee is delegated to oversee credit risk management of the corporate portfolio. The committee is responsible for formulating credit risk strategies and establishing guidelines and limits, as well as advising other credit risk authorities and retaining accountability on related issues. It also monitors and reviews credit risks at the portfolio level and reports essential credit risk information to the Board.

Credit risk is mainly incurred from subsidiary companies, in which conducting loan as main business. Specific-Area credit risk authorities include the Credit Committee, and Problem Loan Committee, which are established to oversee credit risk management and control at in-depth transaction level of subsidiary companies. The Credit Committee is responsible for reviewing and granting credit approvals to any single client proposed by lending officers. The Credit Committee may delegate its authority to designated persons for authorizing lower-risk

transactions. The Problem Loan Committee was set up to monitor and follow up overdue payment of problem loan accounts and foreclosed assets on a regular basis.

Sound credit risk assessments are key risk practices at TISCO Group such as credit analysis, credit rating, delinquency analysis, concentration level and risk capital. All loan origination must operate under a sound credit granting process in which an effective credit rating system is employed in key business area. In retail lending area, quantitative-oriented approaches to credit grading are implemented, considering its homogenous high-volume characteristics, with emphasis on the use of extensive data mining and analysis. In corporate lending area, qualitative-oriented credit grading approaches shall be employed, taking into account its highly varying risk profiles, with well-defined standard.

Concentration risks are also essential in credit portfolio risk management. Appropriate guidelines on concentration risks are set up considering appropriate business practice and company risk capital capacity.

TISCO Group uses credit risk management guidelines and limits that are comprehensively applied to all credit-related functions both at the portfolio and transactional levels, as well as monitoring and managing problem loan and foreclosed assets.

3.2 Liquidity Risk

Liquidity risk is the possibility that TISCO Group might not be able to meet its obligations to repay debts when they come due, whether as a result of a failure in cash management or an inability to raise funds to meet demand in time. Liquidity risk comes from internal and external factors. Internal factors are maturity mismatches in the assets and liabilities profile which affect the level of liquid assets, while market liquidity and depositor confidence represent external factors affecting liquidity risk.

As of December 31, 2018, the value of liquid assets is 64,046.99 million baht, which comprised of cash at 1,191.80 million baht compared to 1,324.81 million baht in December 31, 2017, net transactions with interbank and money market at 54,071.39 million baht compared to 44,647.15 million baht as of December 31, 2017 and net current investment at 8,792.84 million baht compared to 7,125.98 million baht as of December 31, 2017.

Currently, liquidity risk from the maturity mismatch is moderate, once adjustments for the historical behavior of creditors and debtors such as loan defaults or rollovers are taken into account. According to maturity mismatch profile within 1 year, the cumulative gap has shown the matured assets over the matured liabilities accounted for 57,371.55 million baht. In addition, emergency credit line, cash flow from operations as well as inter-bank borrowing shall be utilized as a cushion against funding risk that might occur.

As of December 31, 2018, the Bank reported deposit 193,108.31 million baht, the outstanding long-term debentures (both subordinated and unsubordinated) of 18,680.00 million baht and short-term debentures of 31,000.00 million baht, and bill of exchange amounted to 5,876.92 million baht.

▪ Liquidity Risk Management Framework

Funding risk management is overseen by the Risk Management Committee who delegates day-to-day management of liquidity position to the accountable business line, subject to independent oversight and compliance to the approved risk policies and regulatory requirements. Key funding risk policies involve the management of cash flow maturity profiles, funding concentration, liquidity coverage ratio, net stable funding ratio, and liquidity contingency plan. Funding risk strategies shall take into account the liquidity status in the market and how unexpected changes would affect the company's risks. A manageable level of maturity mismatches of cash flows from assets and liabilities shall then be consistently maintained and regularly monitored with liquidity stress testing, together with the level of liquidity reserve. Funding sources shall be well-planned to optimize risk/return while controlling excess concentrations in certain funding sources is crucially required. Contingency procedures for liquidity management in the times of unexpected financial crisis must be established and made ready for timely activation.

3.3 Market Risk

Market risk stems from adverse changes in securities prices and interest rates, which affect the volatilities of net income, capital, asset value, and liabilities of TISCO Group.

3.3.1 Equity Price Volatility

As of December 31, 2018, the equity portfolio stood at 1,360.13 million baht, of which 299.56 million baht was listed equity, 780.28 million baht was ETF in current market value, and 219.51 million baht was non-listed equity in book value.

TISCO Group gained profit from security investment amounted to 486.78 million baht. Meanwhile, loss from the difference between fair value of securities as of December 31, 2018 and unrealized loss of securities according to the accounting standard of security foreclosure were 88.53 million baht.

(1) Listed Equity Risk and ETF

TISCO Group exposed to price risk from market price volatilities of listed equity and ETF investment. Investment portfolio in available-for-sale book stood at 1,140.62 million baht in which profit and loss will be realized when sale, however, a change in its value would impact the equity through unrealized gains or losses. As of December 31, 2018, unrealized loss from available-for-sale investments equaled 88.53 million baht.

TISCO Group calculates VaR for risk assessment purposes and files reports to management in charge as well as to the Risk Management Committee on a daily basis. VaR is a maximum potential loss at a predefined confidence level and time horizon. Three month investment horizon VaR at a 99.0% confidence level excluded unrealized gain/loss, as of December 31, 2018, was 206.52 million baht, increased from 192.28 million baht as of December 31, 2017 mainly resulted from increasing of risk exposure due to stock value increase during the year. For effective risk management and control, trigger limits were set up to monitor the overall market risk profile according to internal guidelines, such as concentration trigger limit, stop-loss trigger limit, etc.

(2) Non-Listed Equity Risk

Non-listed equity portfolio's book value stood at 219.51 million baht, decreased from 420.36 million baht from the end of 2017 from sale transaction. Presently, our investment strategy is not to increase the size of the non-listed equity portfolio. TISCO Group is instead seeking opportunities to liquidate them, while at the same time closely monitoring portfolio quality on a regular basis.

3.3.2 Interest Rate Risk

Interest rate risk can be classified into two types; namely risk from interest-bearing assets and liabilities profile, and fixed-income risk.

(1) Risk from Interest-Bearing Assets and Liabilities Profile

Interest rate risk occurs whenever there is a mismatch in the re-pricing period of assets and liabilities. A movement in the level of interest rates may lead to higher borrowing costs when compared to earnings, resulting in lower interest rate income, which in turn influences TISCO Group's income and capital.

The Risk Management Committee also acts as the Assets and Liabilities Management Committee (ALCO), which is responsible for managing and maintaining interest rate risk at an appropriate level. TISCO Group's interest-bearing assets and liabilities structure, as of December 31, 2018, is provided in the following table.

(Unit: Million baht)

Interest Bearing Assets and Liabilities	Changed within 1 month	Changed within 2-12 months	Changed within 1-2 years	Changed after 2 years	Total
Assets	116,622.31	61,300.41	44,445.62	71,049.78	293,418.11
Liabilities	(88,951.01)	(140,258.40)	(15,878.10)	(8,985.29)	(253,072.80)
Net Gap	28,671.30	(78,957.99)	28,567.52	62,064.48	40,345.31

Under the change of interest rate within 1 year, TISCO Group had liabilities over assets within 2-12 month stand at 78,957.99 million baht. Considering the interest rates outlook of gradually increase trend, the repricing gap structure was still under acceptable risk level.

(2) Fixed-Income Risk

Fixed-income risk is the result of a decrease in the value of fixed-income instruments when interest rates increase. As yields in the market go up, the value of fixed-income instruments decreases to maintain yields at the same level.

TISCO Group's fixed-income portfolio as of December 31, 2018 stood at 7,643.18 million baht, increased from 5,741.68 million baht at the end of 2017. Average duration of the bond portfolio was 0.30 year, increased from 0.21 year from the end of 2017. Meanwhile, average duration of the debenture portfolio was 1.39 years, increasing from 0.98 years from the end of 2017. However, Fixed-income risk was under acceptable risk and also meets the purpose of maintaining liquidity reserves according to the Bank of Thailand's requirements.

▪ Market Risk Management Framework

Risk Management Committee is responsible to oversee the portfolio risk management and control of market risks. The business lines are accountable to manage market risks in their portfolios within the guidelines and limits set by the Risk Management Committee. Specific-Purpose Risk Authorities have been established in high-risk areas to oversee all aspects of transaction-level risks, such as setting investment guidelines, authorizing investment transactions and trade counterparties etc.

Market exposures shall be grouped appropriately according to the nature and characteristics of risks involved. Suitable risk treatment framework shall be implemented to effectively manage each class of market exposures. Portfolio market risks of all assets and liabilities shall be assessed and quantified using the Value-at-Risk (VaR) concept employing methodologies and techniques appropriate to the nature of risks involved. Back-testing has been prudently performed to validate internal value-at-risk model. In addition, stress testing in place as a supplement to VaR is performed under various extreme scenarios. The risk assessment and corresponding risk treatment has taken into account the transaction intent as well as the market liquidity of the securities.

Interest rate risk from banking book is analyzed on the basis of mismatch between the timing of interest rate re-pricing of assets and liabilities and its potential impacts on future net interest income of TISCO Group under simulated scenarios.

Sophisticated market risk positions, such as derivatives securities, shall be handled with special attention. Derivative risks must be decomposed into basic risks and analyzed such that the inherent risk profile is clearly understood. In addition, derivative risk management policy has been set up in order to effectively control and manage risks from derivative transactions with appropriation to complexity of the derivative.

3.4 Operational Risk

Reference is made to the definition given by Basel Committee on Banking Supervision of the Bank for International Settlements and in accordance with the Policy Statement of the Bank of Thailand in regard to the Operational Risk Management. Operation Risk is defined as the vulnerability of earnings, capital, or business continuity due to inadequate or deficient or failed internal processes, people, technology or external factors including the legal risk and fraud risk. The impact can be classified into financial loss and non-financial loss as reputational damage and business opportunity losses. TISCO Group well realizes that the operational risk is one of the risks those may significantly impact to the business undertaking of TISCO Group. Thereby, TISCO Group puts more emphasis on the operational risk management and continuously develops the operational risk management programs and processes with an aim to minimize the possible operational risks.

▪ Operational Risk Management Framework

The operational risk management policy is set by TISCO Financial Group Public Company Limited and coherent adoption across all subsidiary companies in TISCO Group. Operational Risk Management function performs duties in supporting and impelling all functions in proceeding operations in accordance with the framework stipulated

in the operational risk management policy as well as providing assurance on the adequate control systems established for each business under risk-return perspectives. Compliance functions shall have duty in overseeing all functions to operate in compliance with the rules and regulations of the supervisory authorities. IT Risk Management function performs IT risk analysis and provides proper recommendation to all IT and business functions for appropriate IT control level as well as IT compliance. Internal Audit function shall independently conduct audit process and provide assurance on the internal control system and whole risk management processes under the supervision of the Audit Committee.

In year 2018, TISCO Group has expanded new digitalized service channels to customers and new business products; therefore, operational risk increased accordingly following the business expansion. Nevertheless, the inherent risks in all aspects of such new businesses were analyzed and well managed to assure that the possible risks were mitigated to be in acceptable risks with prudent control process establishment in compliance with TISCO New Business Guideline prior launching. As a result of business expansion in year 2018 as well as the increasing trend of complex fraudulent behavior in current environment, addition to the effective implementation of fraud risk management process for proper determining fraud response plan to mitigate risks to contain in the acceptable level. In 2018, TISCO has planned to enhance the capacity of Transaction Fraud Monitoring System. The system shall be capable to detect the irregularities in order to have further prudent investigation on the appropriateness of transactional execution and minimize the possible losses incurred either to customers or TISCO.

Pursuant to the ongoing operational risk management process of the TISCO Group, it starts from the establishment of operational risk management culture by building control awareness to all business units and educating them in regard to the stipulations according to the operational risk management framework for thorough understanding and perception. For practicing as risk owner, all functions shall have to participate and take accountabilities in managing operational risk of functions under their supervision. Operational Risk Management function shall have duty in managing overall operational risk in an enterprise wide addition to the duty in supporting, overseeing and monitoring all functions to proceed in accordance with the determined operational risk management framework. In the process of operational risk assessment, the key operational risk would be identified together with the assessment on the control effectiveness. The remedial action plan as well as the Key Risk Indicators would be subsequently determined in order to mitigate the revealed residual risks or prevent the incurrence of possible risks for properly mitigating risks for properly containing them within the acceptable risk level appropriate to each business (Risk Appetite). The result of the risk assessment in corporate level would be reported to the Risk Management Committee and the Audit Committee for acknowledgement. Due to the information technology places importance in business operations of TISCO Group as well as the expansion of digitalized service channels, these resulted to the dramatically increasing of IT risk including but not limited to the cyber threats, in 2018, under the consolidation supervision of TISCO Group, IT Risk Management function was set up to be responsible for supervising and governing IT risk. Additionally, the new function also has duty to assess the appropriateness and efficiency of control measures over related to IT risk, follow IT risk through IT KRI for properly mitigating risks and containing them within the acceptable risk level and to determine the appropriate IT risk management. In addition, the specific committee, namely IT Risk Committee has also set up with an aim to govern the efficiency of IT risk management of TISCO Group.

In regard to the incident management process which treated as an integral part of operational risk management, TISCO Group has arranged the supporting system to log and track the incidents. The purpose of the system arrangement is aimed to have the systematic and integrated remedial process with monitoring control for timely responses. Other than that, the incident and loss database would be gathered to make analysis for mitigating repeated risks for monitoring purpose in order to minimize the error rate or enhance the operational efficiency. In addition, the TISCO has formulated the guideline and authority delegation for considering and approving the compensation made to the customers in order to have the standardized practice and fair to affected customers. The overall results of the incident incurrence within TISCO Group as well as the notable operational incidents as well as the summarized report of compensation made to customers would be reported to the relevant committees for acknowledgement and determination remedial actions as deemed appropriate. With respect to the complaint handling and management process, TISCO arranged various channels for accepting complaints and determined the measures for handling and resolving complaints cases within determined timeframe. The complaint cases shall be

analyzed and summarized the results to report to the relevant managements for considering improving the effectiveness of operational processes as deemed appropriate. In year 2018, TISCO has planned to enhance the efficiency of the process of accepting and handling customer complaint.

Whereas the TISCO Group undertakes financial businesses and provides financial services to customers, the continuity of business undertaking in order not to disrupt the services provision to the customers is the crucial matter that the TISCO Group highly emphasizes on. TISCO has well developed and proactively prepared readiness of every system and process relating to the critical businesses for ascertaining the continuous business operations (Business Continuity Plan) without any disruption. Within the Business Continuity Plan, it also covers the process for recovering the critical systems to resume their availabilities within the determined period and the other relevant contingency and backup plans. The actions according to the Business Continuity Plan is subjected to be tested on an regular basis in order to make all relevant business units perceive and understand their roles and responsibilities and actions required to be taken whenever disaster incurs. In addition, TISCO has realized the severity of several impacts those may affect to the safety of employees, customers, counterparties or other relevant parties, thereby, the Emergency Plan has been established as an integral part of the Business Continuity Plan to determine appropriate action plans for managing various emergency situations exposed from external events with the primary objective to secure the safety and minimize possible losses. In order to support and enhance the efficiency of the proceeding in accordance with the Business Continuity Plan, TISCO Group has determined communication plan and channels for communication between managements and employees including the communicating channels with the external parties in order to convey the situation updates and the corporate action plans to all relevant persons in the timely manner.

Given the current situation, cyber threats are a growing potential risk that could cause damage to the organization's business operations either in the form of monetary effects or corporate reputation or any other forms. TISCO are well aware of the impact of such threats and proactively prepares the preventive measures and proper response plan in the event of such impacts incurred. To raise awareness and perception of all employees, the enhancement of the understanding on cyber threats is regularly conducted through organizational training, posting on various office places including the announcement of information on the corporate website with an aim to avoid or reduce the possibility of being affected by cyber threats. Additionally, the study on the potential cyber-crime attack, monitoring and assessment on possible IT risks and cyber threats are regularly conducted in order to effectively improve the quality of risk management, appropriately harden the security and prepare for preventive measures and establish response plan including the communication plan both for internal and external parties. In 2018, TISCO has arranged the cyber drill by simulating the testing scenario for both technical and business session. The participations of the drill comprised of top managements, head of relevant functions including the function responsible for corporate communication and all customer touch point functions, IT staff and Incident Response Team in order to make all relevant functions gain thorough understanding and perceive their roles and responsibilities in responding the cyber-attack whenever the event incurred.

3.5 Strategic Risk

Strategic Risk is a form of uncertainty stemming from the possibility that TISCO Group might make an adverse business decision, improper strategy implementation or misalignment between strategy, target, organization structure, competition and resources that affect TISCO Group's earnings and capital.

3.5.1 Risk from Economic Conditions and Business Competition

Although TISCO Group diversifies its businesses in areas of high potential, most of them are influenced by changes in economic conditions. For hire purchase businesses, growth and credit quality are directly affected by the state of the economy, levels of competition and growth in public consumption. Strong economic growth results in faster growth in asset size and revenues of TISCO Group, and vice-versa. Strong market share and competitive advantage, however, make TISCO Group less vulnerable to negative economic factors.

For the equity investment of TISCO Group portfolio, the economic outlook, capital market performance and investor sentiment is still crucial to TISCO Group's financial performance. In a bullish economy, equity prices tend to increase significantly, resulting in improving the Bank's profit and capital. Conversely, unexpected events, such as

terrorist attacks and natural disasters may cause a substantial drop in equity values, adversely affecting TISCO Group's financial performance. While the brokerage and underwriting business also depends on the condition of the stock market, most income is derived from trading volumes, with the result that the impact of price levels may not be substantial. In effect, TISCO Group has adopted a variable cost structure in the brokerage business, which minimizes the impact of unfavorable market conditions.

The asset management business is dependent only to a minor degree on economic conditions as fee income is based on the net asset value of funds under management. Profit and loss from investments do not directly affect TISCO Group's financial results. However, higher competition on pricing structure is a major risk factor in this business.

3.5.2 Risk from Capital Adequacy

As of December 31, 2018, as TISCO Bank's capital requirement based on Basel III Internal Rating Based Approach (IRB), the regulatory capital adequacy ratio (BIS ratio) stood at 22.91% remaining higher than the 10.375% required by the Bank of Thailand. Tier-I and Tier-II adequacy ratio stood at 17.85% and 5.06%, respectively, in which Tier-I adequacy ratio also remained higher than the minimum requirement at 7.875%. Meanwhile, the net capital rule (NCR) of TISCO Securities Co., Ltd. remained strong at 105.91%, greatly higher than the minimum required ratio by the SEC of 7.0%.

As an internal risk measurement of capital adequacy (ICAAP), the risk-based capital requirement of TISCO Group stood at 14,795.51 million baht, accounting for 40.1% of total projected capital base under Basel III - IRB of 36,890.19 million baht. In addition, capital surplus for future risks and business expansion stood at 22,094.68 million baht.

3.5.3 Risk from Subsidiaries' Financial Performance

TISCO Financial Group Plc. was established with the purpose of investing in other companies only. Therefore, the performance of the company depends on the performance of invested companies. Subsidiaries' risks involve the risk of TISCO Bank's business operation which is a core business of the company and other subsidiaries' business operations. The company holds shares of all 8 subsidiaries including TISCO Bank. However, while most of the net income comes from dividends received from its subsidiaries, volatile performance of subsidiaries may affect the overall the company's performance. In effect, the dividend payment to shareholders may also be volatile.

Profit recognition of TISCO Group came from all subsidiaries including TISCO Bank. As of December 2018, net profit of TISCO Bank and other subsidiaries was 6,423.46 million baht, where 1,513.70 million baht was from subsidiaries excluding TISCO Bank. Although the subsidiaries experienced outstanding business performance and generated profits to the company, investment strategy is important in the future. Therefore, the board of directors meeting has defined the investment policy for TISCO Group where the company will invest in those businesses having ability to support the competitive efficiency of the group. Besides, the market and industry trends, competitive environment and long-term profit making capability together with prudent risk management shall be considered.

Net income from subsidiaries, excluding TISCO Bank, accounted for 26.5% of total net income, which significantly affects the overall TISCO Group's income. Additionally, the net income from brokerage and investment banking are from TISCO Securities while net income from asset management is from TISCO Asset Management.

While subsidiary businesses are influenced by market activity and overall economic conditions, the impact of risk from securities and asset management businesses will have a significant effect only on Bank profitability, without having a severe impact on capital as the major focus is on services rather than lending or investment.

Internal control and risk management of subsidiaries is centralized at the Company which applying a universal set of standards and guidelines for all. The company sends its representatives to serve as directors at subsidiaries for at least half of the total directors and to participate in establishing important business policies, in which the annual business plans of subsidiaries require approval by the company.

▪ **Strategic Risk Management Framework**

The executive board and senior management directly oversee strategic risks of TISCO Group, with the policy to employ effective sound practices in strategic management that enable it to respond effectively to changes in the business environment and unexpected external events. Vision and mission statements reflect the company's core direction and how our business is conducted, around which all strategies and policies are formulated. Sufficient processes have been set up to carry out effective corporate strategy formulation, business planning, resource management, performance management, and other essential decision support systems. Strategic audit process is then performed at the board level of the company by non-management directors as the ultimate line of protection.

In organization and business practice, the principles and practices of good corporate governance have been adopted to protect the rights and interests of all stakeholders. The corporate governance framework has included corporate governance policy and strong systems of internal controls, which are subject to regular independent assessment and review.

TISCO Group manages strategic risk by setting up 3-year strategic plans to provide a clear business direction together with operating budgets. The plans are reviewed on an annual rolling basis and used to compare actual performance on a monthly basis.

4. Operating Assets

4.1 Major Fixed Assets

Land, premises, and equipment – Net

Land, premises, and equipment of TISCO Group as of December 31, 2017 and 2018 are as follows: These assets are free from any obligations.

(Unit: Million baht)

List	Type of Property Right	Contingent Liability	Value	
			2017	2018
Land				
Cost	owner	none	17.51	17.51
Office condominium and building improvements				
Cost	owner	none	697.73	746.83
Revaluation	owner	none	2,585.86	2,477.10
Furniture fixtures computer and equipment				
Cost	owner	none	1,153.76	1,183.60
Motor vehicles				
Cost	owner	none	156.80	164.31
Total			4,611.66	4,589.35
<u>Less</u> Accumulated Depreciation			(1,958.46)	(1,597.12)
Land, premises, and equipment – Net			2,653.20	2,992.23

Long-term contract

1. Contract

The subsidiary companies have entered into several lease agreements in respect of the lease of office building and branch office. The terms of the agreements are generally 1 - 15 years. As at December 31, 2017 and 2018, future minimum lease payments required under these non-cancellable operating leases contracts were as follows:

(Unit: Million baht)

Types	Maturity	As at December 31,	
		2017	2018
Lease office building and branch office	Within 1 year	213	192
	Over 1-5 years	319	281
	Over 5 years	70	56
Total		360	529

2. Rental contracts between the Company and its subsidiaries

Office suite rental agreements between the Company and its subsidiaries located at TISCO Tower are based on 1-3 year contracts at normal market prices. These contracts are illustrated as follows:

Type of Assets	Renter	Owner	Area (sq.m.)
TISCO Tower Office	TISCO Securities Co., Ltd	TISCO Financial Group Plc.	3,405.39
TISCO Tower Office	TISCO Information Technology Co., Ltd.	TISCO Financial Group Plc.	2,149.59
TISCO Tower Office	TISCO Bank Plc.	TISCO Financial Group Plc.	1,286.47
TISCO Tower Office	TISCO Learning Center Co., Ltd.	TISCO Financial Group Plc.	590.00
TISCO Tower Office	Deutsche TISCO Investment Advisory Co., Ltd.	TISCO Financial Group Plc.	375.00
TISCO Tower Office	TISCO Insurance Solution Co., Ltd.	TISCO Financial Group Plc.	948.91

4.2 Loans

Classification of assets

Asset classification in TISCO group consists of loans and receivables, investments in securities and property foreclosed. Our asset classification policies are in compliance with those set by the BOT and the SEC. The details of asset classification as of December 31, 2018 are shown below:

(Unit: Million baht)

Classification	Loans and receivables	Investments in securities	Property foreclosed	Investment in receivable	Total	%
Pass	264,469	-	-	-	264,469	92.0
Special mention	16,533	-	-	-	16,533	5.8
Substandard	3,356	-	-	-	3,356	1.2
Doubtful	1,536	-	-	-	1,536	0.5
Bad debts	1,417	36	13	12	1,478	0.5
Total	287,311	36	13	12	287,372	100.0

Provision for Loan Loss Policy

TISCO Group's provisioning policy for bad debt allowances or losses from debt restructuring are in accordance with the regulations of the BOT and the SEC.

The provisioning requirements for bad debt allowances under the BOT regulations can be summarized as follows:

1. Assets classified as Loss shall be written off.
2. Assets classified as Doubtful to Loss require a provision of 100%.
3. Assets classified as Doubtful require a minimum provision of 100%.
4. Assets classified as Sub-Standard require a minimum provision of 100%.
5. Assets classified as Special Mention require a minimum provision of 2%.
6. Assets classified as Pass require a minimum provision of 1%.

The Bank of Thailand has imposed criteria to set up provisioning whereby the regulations require assets classified as Substandard, Doubtful, and Doubtful to loss to set a minimum provision in accordance with a 100% of the different between asset's carrying amount and present value of estimated future cash flow or the present value of estimated future cash flow from collaterals. Meanwhile, the loan portfolio with similar credit risk profile can be set on a portfolio basis following collective approach.

TISCO Group has a policy in applied portfolio provision basis or collective approach with loan portfolio which as similar credit profiles with adequate historical loss data. TISCO Group will prudently set provision level based on estimation of historical loss.

Provision of Asset Impairment Policy

TISCO Group will reserve provisioning in cases of asset impairment by considering impairment indicators based on generally accepted accounting principles (GAAP) and by estimating the receivable value of the assets.

Policy of revenue recognition on interest income

Interest on loans is recognized as income on an accrual basis and is based on principal outstanding. Hire purchase, finance lease and loan against auto license income are recognized over the installment period, using the effective interest rate.

The subsidiary recognises interest on credit card receivables relating to overdue credit card installments from the positing date and interest on credit card receivables arising from cash advances from the date of the cash withdrawals. Interest on credit card receivables paid in installments is recognized on an accrual basis.

The subsidiaries have policies for corporate loans on which interest payments have been defaulted for more than one month, it is the policy of its subsidiaries to cease accruing income. For other loan accounts which are overdue for

more than three months, the recognition of interest income is ceased, already recorded accrued interest is reversed from accounts and after that interest will be recognized as income on a cash basis.

Accrual of interest is ceased for margin loans on which interest is overdue for more than two months and interest is then recognised on a cash basis.

The accounts will be reinstated to an accrual basis when the overdue amounts are received.

Interest or discounts already included in the face value of notes receivable or loans are recorded as deferred income and taken up as income evenly throughout the term of the notes or loans.

4.3 Investment in Securities

Details of investment in securities are shown in Notes to Financial Statements, 3.4 Investments.

Securities Investment Policy

Securities investment policy is described in Part 1 Section 2 : Business Operations by Area, item 2.3

Risk Management of Investment Portfolio

TISCO Group diversifies its investments in order to avoid high concentrations in single securities. Appropriate investment opportunities are emphasized to ensure a proper risk-return trade-off. In addition, the Group has set up an integrated risk management system to aggregate all investment risks, where the issues of capital adequacy and the prospect of risk-return from each investment are incorporated to enable timely portfolio adjustment if required. Details of risk management are listed in Part 1 Section 3: Risk Factors.

Allowance for Impairment of Securities

TISCO Group sets allowances for impairment of securities according to accounting standards. Investments in securities held for trading purposes are determined at fair value. Gains or losses arising from changes in the value of securities are included in determining earnings. Investments in available-for-sale securities, both held for short-term and long-term investment, are determined at fair value. Changes in the value of the securities are shown as separate items in shareholders' equity until the securities are sold, after which they are included in determining earnings.

The fair value of marketable securities is based on the latest bid price of the last working day of the period as quoted on the SET. The fair value of government bonds, state enterprise securities and private debt instruments is determined by using the formula quoted by the BOT, which is based on the yield rate quoted by the Thai Bond Dealing Center or other financial institutions. The fair value of unit trusts is determined based on their net asset value.

In the event the Company and its subsidiaries reclassify their investments in securities, the investments are adjusted to reflect their fair value on the reclassification date. Differences between the carrying amount of the investments and their fair value on that date are included in determining earnings or recorded as a surplus (or deficit) from changes in the value of investments in shareholder equity, depending on the type of investment which is reclassified.

4.4 Policies on investment in subsidiaries and joint venture company

The details on investment in subsidiaries and joint venture company are presented in Notes to Financial Statements item 3.5 Investment in subsidiaries and joint venture

The subsidiaries and joint venture company has a policy to invest its funds in investment activities that generate sufficient returns in relation to risk, with the objective to maximize value creation for the Company and its shareholders. The Company's investments can be divided into 2 groups Strategic Investment and Financial Investment.

1) Strategic Investment

Strategic Investments are investment in equity of subsidiaries or affiliated companies for the purpose of fulfilling TISCO Group corporate mission, business strategies, and action plans. The Company will invest in strategic investment to the extent that the Company gains managerial control, and thus able to direct the company according to the Group direction and governance.

Strategic Investments shall be made in company with good business prospects, which supplements well with the group businesses. The investments shall also be justified in terms of risk-return in the long run, considering group's overall sustainability and profitability, and shall be free of any conflict of interests.

Subsidiaries companies under strategic investment are required to strictly comply with group's governance policies, which comprehensively constitutes all key strategic & control areas including governance and operating structure, business strategy, management, operations, risk and control, human resource, finance and accounting, corporate affairs, and public and client communications. All decisions for strategic investment required case by case approval by the Executive Board of TISCO Financial Group Plc.

2) Financial Investment

Financial Investments are investment in financial instruments for the purpose of earning financial returns as well as for liquidity management. The investment may be in various types of financial instruments, e.g. fixed income, equities, hybrids, mutual funds, etc.

Financial investments shall be made with good justification of risk and returns, and careful consideration of liquidity, capital adequacy, and risk tolerance.

Financial investments shall also be made only in instruments that the Company has sufficient knowledge of risk and returns, and shall be well supported by good risk management system.

Table illustrates details of investment in subsidiaries and joint venture company

(Unit : Million baht)

Company Name	Paid up As of December 31, 2018	Cost Method As of December 31, 2018
TISCO Bank Plc.	9,216	17,641
TISCO Securities Co., Ltd.	1,000	1,075
TISCO Asset Management Co., Ltd.	100	110
Hi-Way Co., Ltd.	100	273
TISCO Information Technology Co., Ltd.	20	22
TISCO Insurance Solution Co., Ltd.	100	137
Primus Leasing Co., Ltd. ^{/1}	3	33 ^{/2}
TISCO Learning Center Co., Ltd.	5	5
All-ways Co., Ltd.	700	700
TISCO Tokyo Leasing Co., Ltd. ^{/3}	60	73
Investment in subsidiaries and joint venture company - net		20,069

^{/1} Ceased business operation and proceeding liquidation process

^{/2} Deducted impairment in investment

^{/3} Joint venture Company

5. Legal Disputes

As of December 31, 2018, the Company and its subsidiary companies had 37 unresolved cases from its regular business operations, all of them are cases caused by banking business operation (TISCO Bank Plc.) and asset management business (TISCO Asset Management Co., Ltd.) involving an estimated total amount 334.15 million baht, which was less than 5% of its shareholders' equity, consisting of:

- (1) 35 cases that TISCO Bank being sued (estimated total amount of 333.43 million baht), there were 15 cases involving total amount of 77.94 million baht which were in the tribunal process and not yet reach judgment. Furthermore, there were 20 cases, with a total value of 255.49 million baht that already dismissed by the Court of First Instance and/or the Appeal Court, however, the plaintiffs still appealed to the Appeal Court or Supreme (Dika) Court.; and
 - (1.1) 1 administrative case with a total value of 2.92 million baht which governmental unit as the plaintiff filed lawsuit against TISCO Bank as the guarantor under letter of guaranty. Currently, the case was dismissed by the Administrative Court of First Instance but the plaintiff appealed the case to Supreme Administrative Court;
 - (1.2) 1 criminal case which the plaintiff filed a lawsuit against car dealer, manufacturer and TISCO Bank as co-defendants for Selling goods be any fraudulent and deceitful means or cheating and fraud. This case was in the tribunal process and not reaches judgment; and
 - (1.3) 33 cases that TISCO Bank being sued (estimated total amount of 330.5 million baht), there were 14 cases involving total amount of 77.94 million baht which were in the tribunal process and not yet reach judgment. Furthermore, there were 19 cases, with a total value of 252.56 million baht that already dismissed by the Court of First Instance and/or the Appeal Court, however, the plaintiffs still appealed to the Appeal Court or Supreme Court.
- (2) 2 cases that TISCO Asset Management Co., Ltd. being sued (estimated total amount of 0.72 million baht) and the tribunal process was not reach judgment.

Additional details on legal disputes are presented in Notes to Financial Statements; 3.37.2 Litigation. The management of the TISCO Group believes that neither the Company nor its subsidiary companies will suffer material loss as a result of the abovementioned lawsuits. In addition, there is no claim against the Company by the directors, managements or any related person of the Company or its subsidiary companies.

6. General Information

6.1 General Information

Company Name	: TISCO Financial Group Public Company Limited
Symbol	: TISCO
Type of Business	: Holding Company
Address	: 48/49 TISCO Tower, 21 st Fl., North Sathorn Road, Silom, Bangrak, Bangkok 10500
Registration Number	: 0107551000223
Total registered capital	: Baht 8,007,032,950 (Eight thousand and seven million, thirty two thousand and nine hundred and fifty Baht)
Paid-up Capital	: Baht 8,006,554,830 (Eight thousand and six Million, five hundred and fifty-four thousand and eight hundred and thirty Baht) comprising of 800,645,624 common shares and 9,859 preferred shares, both with par value of 10 baht per share
Home Page	: www.tisco.co.th
Telephone	: (66) 2633 6000
Fax	: (66) 2633 6880
Reference:	
Share Registrar	: Thailand Securities Depository Co., Ltd. 93 Rachadapisek Road, Dindaeng, Dindaeng, Bangkok 10400 Tel. (66) 2009 9000 Fax (66) 2009 9991 SET Contact Center: (66) 2009 9999 Email: SETContactCenter@set.or.th Website : www.set.or.th/tsd
Auditor	: Ms. Somjai Khunapasut CPA License No. 4499 EY Office Limited 33 rd Fl., Lake Rajada Office Complex, 193/136-137 Rajadapisek Road, Bangkok 10110 Tel. (66) 2264 0777 Fax. (66) 2264 0789-90

6.2 Other Important Information

None