THE CHINESE EQUITY MARKET

An Economic Inquiry into Investment Opportunities and Risks

Master's Thesis in Economics

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Abstract

The emerging market China is currently one of the most attractive and promising markets in the world. Many investors want to benefit from the high growth and promising economic outlook and therefore invest in China equity funds. However, both opportunity and risk factors need to be taken into consideration, and we have concluded that most of the Chinese market’s opportunities can be derived back to economic structure and trade conditions, whereas most risk factors can be derived back to political and institutional conditions.

The final aim of this thesis is to evaluate these opportunities and risk factors, more precisely, in terms of pros and cons of investing in China, and also to elaborate an optimal portfolio strategy. The methods we have used is partly qualitative and partly quantitative, and our analysis is backed up by a broad analytic toolbox of macroeconomic theory, portfolio theory, institutional theory and research on emerging markets that have enabled us to analyse China from different perspectives.

Our conclusion is that there are mainly three pros for investing in China: (1) the economic liberalisation and reforms of the institutional framework which creates further incentives for growth; (2) the Chinese market’s huge potential and the high-growth sectors IT and telecommunications that lead the way for China’s expansion; (3) a favourable macroeconomic climate and an impressive development.

However, there are also mainly five cons for not investing in China: (1) the mismanagement of the state-run companies constitutes a large risk; (2) the mainland exchanges’ intra-year volatility discourages short-term investments; (3) the export sector’s performance might decline as the economic outlook for China’s biggest trade partners has been marked down by the IMF; (4) the institutional framework is largely responsible for many risk factors such as scarce market information, lack of insight and public control; (5) a tougher competition climate after the entry in the WTO may affect several of China’s industries and cause bankruptcies and mergers but also a speeding up of the institutional framework.

We have studied the effects of three different portfolio combinations: a World/Hong Kong portfolio, a World/Shenzhen portfolio or a World/Shanghai portfolio. Our calculations indicate that only the Hong Kong Stock Exchange is positively correlated with the World Index, whereas both mainland stock exchanges are negatively correlated. They also show that it is the World/Shanghai portfolio that has the highest expected return and standard deviation. The World/Hong Kong and World/Shenzhen portfolios’ expected returns and standard deviations are roughly the same. Thus, our argumentation on an optimal portfolio strategy suggests that less risk-averse investors may want to consider the World/Shanghai portfolio, whereas the World/Shenzhen portfolio might instead better suit the preferences of more risk-averse investors.
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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CNY</td>
<td>Chinese Yuan</td>
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<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HKSE</td>
<td>Hong Kong Stock Exchange</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>NPLs</td>
<td>Non-Performing Loans</td>
</tr>
<tr>
<td>PboC</td>
<td>People’s Bank of China</td>
</tr>
<tr>
<td>PRC</td>
<td>People’s Republic of China</td>
</tr>
<tr>
<td>SHSE</td>
<td>Shanghai Stock Exchange</td>
</tr>
<tr>
<td>SHZE</td>
<td>Shenzhen Securities Exchange</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organisation</td>
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1. Introduction

1.1 Emerging Markets and China

Emerging markets often attract investors because of their high-growth potential. Investing in these countries can be both interesting and rewarding for an investor that is prepared for the particular risks of emerging markets such as volatility, structural weaknesses and political and institutional risks. Many of these countries are still in a developing phase and are carrying out structural changes that may affect the risk and return of a potential investment. Therefore, before investing in these countries, one must first understand their characteristics and special conditions, both in terms of opportunities and risks.

China is currently one of the most attractive and promising markets in the world. The country is experiencing high growth, has a promising economic outlook and as financial restrictions are being lifted, investment opportunities for foreigners are increasing. For foreigners, perhaps one of the easiest ways of investing in China is through a China equity fund. However, the country is still high-risk and several risk factors, of which many are attributable to economic structure, political and institutional conditions are important to consider.

1.2 Aim of the Thesis

The aim of this thesis is divided into three parts:

First, to identify and map investment opportunities and risk factors particular for China.

Second, to deepen the mapping by carrying out a qualitative analysis of economic, political and institutional conditions, and a quantitative analysis of the Chinese equity market’s historical performance.

Third, to evaluate the pros and cons for investing in China, and to elaborate an optimal portfolio strategy.

1.3 Delimitation

The following three statements delimit this thesis:

(1) Solely conditions and events that might affect the performance of Chinese equities will be considered.

(2) The description of economic, political and institutional conditions is not exhaustive, but a selection of what we have deemed as most relevant.

(3) Although Hong Kong and Mainland China is now a united country, they will where possible be commented separately because of their structural differences.

1 Guidance session by supervisor Göran Hägg, Ph.D.
1.4 Central Concepts

There are three central concepts that need to be explained before we proceed.

An emerging market is a rapidly growing market in a newly industrialised country. Examples of some emerging markets countries are Russia, Chile, Mexico, South Africa and China.

An equity fund is a collective investment fund that pools the money of large and small investors and entrusts them to the care of a professional asset manager. The money is solely invested in equities, but may be invested in different countries, sectors or companies.

Greater China refers to the entire country China, which includes both Mainland China as well as the former colony Hong Kong.2

1.5 Method

Our point of view is that economic theory provides a solid base for solving business problems, but may however not always be sufficient, in this case because the nature of our aim of the thesis requires an extensive qualitative analysis. Each business case, scenario or issue is unique and hence requires flexibility and an ability to think ‘out-of-the-box’. Thus, as theory cannot always provide an explanation to certain qualitative events, we have where necessary relied upon our own commercial awareness, intuition and logical thinking.

Our analysis is partly qualitative and partly quantitative. Since we have wanted to analyse China from different perspectives, we have used a broad analytic toolbox of macroeconomic theory, portfolio theory, institutional theory and research on emerging markets. The reason for choosing such a broad approach is that as our thesis is not targeted at investment professionals, but at undergraduates and prospective investors, we need to focus on the essentials without getting lost into complexity. We have then made a positive economic analysis that consists of a description of past and current conditions in China and complemented it with a relationship analysis that explains how several factors and conditions affect a sector or bring about a particular development or trend.

Regarding our sources, we have primarily relied upon business articles, books, research papers and the Internet. Also, we decided against doing interviews with for example fund managers, as this would have influenced our analysis and obstructed our own training in making independent market analysis.

1.6 Criticism of our Sources

The articles we have chosen have mainly been published in internationally respected business newspapers such as The Economist and Financial Times, and these sources cannot be subject to any heavy criticism regarding reliability or quality.

The books we have used cover topics such as economics, financial markets, investment management and China. Established and internationally respected authors have written most of these books. Also, several working papers come from international organisations such as

the International Monetary Fund (IMF), the World Bank and the Asian Development Bank. These sources are highly reliable and possess analytical rigour, but the thesis and us may however be influenced by their Anglican mainstream view on Economics.

Regarding the sources we have used on the Internet, these can always be criticised for some articles temporary nature and for not being reliable. However, we have mainly collected information from the international organisations that we mentioned previously and they should therefore be reliable. Furthermore, the information used for describing the different funds mainly comes from the fund management firms’ own homepages why this information is biased, as these have a profit interest and want to present the funds in the most positive way possible.

1.7 Disposition of the Thesis

Apart from this introductory chapter, there are in continuation six chapters that constitute the rest of this thesis:

Chapter 2 is the frame of references. It deals with the characteristics of emerging markets, the relationship between macroeconomic performance and the stock market, how to make a macroeconomic forecast and an overview of portfolio theory.

Chapter 3 is the first part of the empirical section. It deals with Chinese politics and economy, and is focused on political conditions, macroeconomic indicators and international trade.

Chapter 4 is the second part of the empirical section. It is a description of the Chinese stock market, different stock exchanges and their performance, shareholding system, financial policy and reform, as well as some selected high-growth industries.

Chapter 5 is the third and last part of the empirical section. It contains a brief overview of some selected equity funds and their basic data.

Chapter 6 is the analysis. It is divided into a qualitative section that analyses the pros and cons of investing in China from three different perspectives, and a quantitative section that elaborates an optimal portfolio strategy.

Chapter 7 is the conclusion. It gives a clear overview of our analysis of the Chinese equity market, by responding to the aim of our thesis.

1.8 Legal Disclaimer

This thesis is by no means any sort of recommendation on investments in China and the authors hereby disclaim themselves of all responsibility of reimbursing any financial loss that the reader or a third party may incur from their future investments in China. Nor can the authors be sued, summoned before a court of law or held liable in any possible manner.

This disclaimer comes into force, should any individual or legal entity refer to our thesis as a basis for their investment decision, whether this disclaimer was read or not.
2. Frame of References

The frame of references is divided into four sections. The first section presents general opportunities and risk factors in emerging markets. The second section highlights some macroeconomic indicators’ effect on the stock market and how a macroeconomic forecast is made. The third section presents the concepts of portfolio risk and return. The fourth section concludes the chapter by explaining some chosen concepts in portfolio theory.

2.1 Emerging Markets

The characteristics of ‘emerging markets’ can be summarised in just a few words: high growth, volatile, exotic and risky. More precisely, an emerging market is a rapidly growing market or a stock market in a newly industrialised country. Emerging markets are also considered to be a distinct asset class that is gaining increasing institutional acceptance and interest, as the liberalisation of financial markets is expanding its boundaries beyond the developed markets of the Western world. However, the risk-reward profile of emerging markets is somewhat different from those of developed markets. Some of the particularities that investors have to take into account are for example restrictions of foreign shareholdings, scarcity of company information, illiquidity and political risk.

Emerging markets are also characterised by a low or middle GDP per capita. Also, emerging markets are characterised by an underdeveloped capital market, which means that the total value of all companies quoted on the stock exchange only represents a minor part of GDP. Both opportunities and risk may be higher in emerging markets than in developed markets, and the investor needs to understand what factors lie behind this. Table 2.1 is a summary of opportunity and risk factors, and aims to provide the reader with a general conception about conditions in emerging markets.

Table 2.1 Opportunities versus Risk in Emerging Markets Countries

<table>
<thead>
<tr>
<th>General opportunities</th>
<th>General risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratisation and liberalisation of markets</td>
<td>Unstable stock markets</td>
</tr>
<tr>
<td>Cheap labour power</td>
<td>Political uncertainty and mismanagement</td>
</tr>
<tr>
<td>Productivity gains</td>
<td>Lack of insight and public control</td>
</tr>
<tr>
<td>Re-negotiation and cancellation of foreign debt</td>
<td>Capital restrictions</td>
</tr>
<tr>
<td>Reforms of the institutional framework</td>
<td>Illiquidity, high inflation and an unstable exchange rate</td>
</tr>
</tbody>
</table>


The backlash of socialism in the world has resulted in democratisation and the support of free markets. Consequently, a freer trade and a more liberal finance and investment policy are stimulating the business climate and attracting foreign capital. Furthermore, the infant mortality rate and life expectancy are improving more rapidly than in the Western world and this results in an abundant access of cheap and competitive labour power, which makes the emerging markets highly competitive in terms of labour cost.

4 Brunswick Emerging Markets homepage, “Tillväxtmarknader”.

4
Productivity gains have basically two sources. First, new technologies, especially in the telecommunications and computer industry, increase productivity in the industry, and second, the emerging educational system also contributes to entrepreneurship and higher productivity. Furthermore, the re-negotiation and cancellation of loans taken during the 1960s and 1970s alleviate the emerging markets countries’ debt burden, and more capital can thus be used for productive investments.5

Another important growth factor in emerging markets countries is the reforms of the institutional framework. Both formal constraints, such as political, economic and judicial rules, as well as informal constraints such as culture, norms and customs constitute a society’s institutional framework. The institutional framework is important because it reduces uncertainty and provides structure to everyday life, and in the long run it affects economic stability and performance as it determines total costs, i.e. both transformation (production) and transaction costs.6 However, in comparison to developing countries in the Third World, emerging markets countries have come farther in undertaking adjustments of rules, norms and enforcement which improves the opportunities for both the citizens and for the political, economic, social and educational bodies. The commitment to create a formal and efficient institutional framework tends to enhance growth and development and also builds the foundations of economic success, both cross-sectional as well as through time.7

Regarding risks, one first must consider the instability of emerging stock markets. Large price fluctuations mean possibilities of making money, but also a risk of losing it. Political uncertainty or mismanagement of the domestic economy is more frequent in emerging markets countries, and actions that hinder or threaten liberal market reforms can have negative effects on the stock market. Furthermore, insight and public control are usually not satisfactory either, often because of insufficient market regulation or mismanagement of companies. Capital restrictions are another problem that can make it more difficult to move capital, gains and dividends out of the country. An investor must also take into account macroeconomic indicators such as a high inflation and an unstable exchange rate. Finally, small markets can also be illiquid, i.e. difficulties in selling a financial asset at a fair price.8

2.2 Macroeconomics and the Stock Market

The ‘macroeconomic performance’, which depends upon both cyclical forces and policy decisions, is important because economic indicators such as GDP-growth, inflation and monetary policy have an important effect on the stock market and its players.

GDP-growth affects the stock market positively, ceteris paribus, mainly because the firms’ earnings are expected to increase, and as firms become more valuable, stock prices will also rise. Such influences cause stock prices to move with the business cycle, being high when profits are high, and low when profits are low. These influences also cause stock prices to vary with a host of factors that influence expectations of future profits.9 There are also other

5 Brunswick Emerging Markets homepage, “Tillväxtmarknader”.
6 North (1990), pp. 3-6, 27-38, 83 and 102.
7 North (1990), pp. 7-9 and 67-69.
8 Brunswick Emerging Markets homepage, “Tillväxtmarknader”.
factors that are related to GDP-growth, such as demand for stocks, which reflects the households’ wealth, which in turn depends on employment opportunities etc.\textsuperscript{10}

Inflation is an important macroeconomic indicator as well, because it affects firms’ competitiveness and consequently their earnings. A low inflation provides a sound business climate, which is positive for business and industry, hence earnings would be expected to increase and stock prices likewise.

Changes in monetary policy cause changes in inflationary expectations along with interest rates and these latter, or just the expectation of them, affect stock prices. For example, if a country’s Central Bank decides to decrease monetary supply, a rise in interest rates will follow. Investors will then understand that holding government bonds would be more profitable, and as investors sell their stocks, prices will fall.\textsuperscript{11} Furthermore, a boom would also affect interest rates. The Central Bank is then expected to decrease monetary supply, so interest rates would rise. In total, the correlation between the interest rate and the stock market is negative, i.e. lowered interest rates lead to higher stock prices and vice versa.\textsuperscript{12}

\subsection{2.2.1 Macroeconomic Forecasting}

Besides from just knowing how the macroeconomic performance affects the stock market, we must also be able to predict its development. Arbitrary Pricing Theory identifies the following five major forces as most relevant when making a ‘\textit{macroeconomic forecast}’:

\begin{itemize}
  \item \textit{The business cycle}: Changes in real output are measured by percentage changes in the index of industrial production.
  \item \textit{Interest rates}: Changes in investors’ expectations about future interest rates are measured by changes in long-term government bond yields.
  \item \textit{Investor confidence}: Changes in yield spread between high and low-grade bonds narrows as investor confidence increases, and vice versa.
  \item \textit{Short-term inflation}: Month-to-month jumps in commodity prices are measured by changes in the consumer price index.
  \item \textit{Inflationary expectations}: Changes in expectations of inflation are measured by changes in the short-term risk-free nominal interest rate.\textsuperscript{13}
\end{itemize}

\subsection{2.3 Portfolio Risk and Return}

\subsection{2.3.1 Definition of Risk}

In the financial field, risk means an uncertainty that can be measured in terms of variance or standard deviation, which can also be interpreted as an asset’s volatility.\textsuperscript{14} Risk is usually divided into two main categories: diversifiable risk and market-related risk. The diversifiable risk is company-specific; for example a strike, an accident, poor management or some other event may have a negative impact on the company’s stock price. On the other hand, market-

\textsuperscript{10} Skytt (1996), p. 49.
\textsuperscript{11} Lipsey (1996), p. 615.
\textsuperscript{12} Skytt (1996), p. 51.
\textsuperscript{13} Fabozzi (1999), p. 95.
\textsuperscript{14} Fabozzi (1999), pp. 39-40.
related risk refers to general market, economic and political conditions, and these affect companies similarly regardless of what industry they belong to.15

2.3.2 Risk Propensity

As risk and return are positively correlated, i.e. a higher expected return would also mean a higher risk, an investor must do a weighing between these both. However, investors have different ‘risk propensity’ and one can distinguish three different categories:

- **Risk-averse** investors, when faced with two investments with the same expected return but two different risks, will prefer the one with lower risk.
- **Risk neutral** investors feel indifferent about choosing a higher or lower investment risk for the same expected return.
- **Risk-preferring** investors, when faced with two investments with the same expected return but two different risks, will prefer the one with higher risk.16

2.3.3 Measuring Portfolio Risk and Return

The actual ‘portfolio return’ is calculated as a weighted average of the expected return of each asset in the portfolio. This can be expressed as shown below:

$$R_p = \sum_{i=1}^{I} w_i R_i .$$

Where
- $R_p$ = rate of return on the portfolio over the period;
- $w_i$ = weight of asset $i$ in the portfolio;
- $R_i$ = rate of return of asset $i$ over the period;
- $I$ = number of assets in the portfolio.

Thus, the equation above states that the return on a portfolio of $G$ assets ($R_p$) is equal to the sum of the individual assets weights in the portfolio times its return for each asset $g$.

Let us now turn to risk instead. ‘Portfolio risk’ can be calculated as the actual rate of return times the probability of occurrence for a given investment. As was briefly pointed out earlier, the statistical measures that are used to measure risk are variance and standard deviation. In statistical terms, variance is a measure of the dispersion of possible outcomes for the rate of return around the expected return. See the equation below on how to calculate it:

$$\text{var}(R_i) = \frac{N}{n-1} \sum_{n=1}^{N} p_n [r_n - E(R_i)]^2 .$$

Where
- $r_n$ = the $n$th actual return for asset $i$;
- $p_n$ = the probability of attaining the rate of return $n$ for asset $i$;
- $N$ = the number of possible outcomes for the rate of return;
- $E(R_i)$ = expected return for asset $i$.

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15 Fabozzi (1999), p. 68.
In other words, variance is the same as an investment’s uncertainty or risk. However, we can also express this with the measure of standard deviation, which is the square root of the variance:

\[ SD(R_i) = \sqrt{\text{var}(R_i)}. \]

The equation above shows that variance and standard deviation are conceptually equivalent. Also note that the larger the variance or standard deviation, the greater the investment risk.\(^{17}\)

2.4 Portfolio Theory

2.4.1 Diversification Strategy

‘Diversification’ is a way of reducing portfolio risk without necessarily sacrificing return. The concept can mean two different things. Firstly, investing in different asset classes such as stocks, bonds and real estate, and secondly, investing in only one asset class, in our case stocks, and placing the funds in many different companies from different industries.\(^{18}\)

If we take a look at Figure 2.1, we understand that the idea behind diversification is that the diversifiable risk, which is the company-specific risk, decreases as we increase the number of holdings. However, the market-related risk depends on general market conditions that apply to all companies and may therefore not be reduced by purchasing assets in different companies. Despite this, the diversification strategy is still meaningful as the total risk (standard deviation) decreases as well.

Figure 2.1 Portfolio Diversification

![Figure 2.1 Portfolio Diversification](image)


The optimal diversification gain can be found only by using a quantitative measure and this is done in a two-stage approach. First, we need to calculate the covariance between the stocks.

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\(^{17}\) Fabozzi (1996), pp. 40-44.

The following equation shows that the covariance is the product of the correlation coefficients between the stocks and their respective standard deviations:

\[ \text{cov}(R_i, R_j) = \text{cor}(R_i, R_j) \times SD(R_i) \times SD(R_j). \]

Second, we put the covariance into the equation below, where we now have two stocks, \( R_i \) and \( R_j \) that have the weights \( w_i \) and \( w_j \) respectively. The portfolio’s variance is then:

\[ \text{var}(R_p) = w_i^2 \times \text{var}(R_i) + w_j^2 \times \text{var}(R_j) + 2w_iw_j \times \text{cov}(R_i, R_j). \]

This equation makes us realise that the diversification strategy is concerned with combining assets that are less than perfectly correlated, which in turn lowers the portfolio’s variance and hence the standard deviation. Thus, the principle is that as correlation (covariance) decreases, so do variance and standard deviation. Due to the degree of correlation between expected asset returns, investors can maintain expected portfolio return and lower portfolio risk by combining assets with lower and preferably negative correlation. Lower correlation is advantageous because the less correlated the portfolio’s stocks are, the less volatile will the portfolio be. However, very few assets have small or negative correlation with other assets.\(^ {19} \)

### 2.4.2 Top-Down versus Bottom-Up Approach

When constructing global portfolios or analysing markets, fund managers usually use one out of two different approaches, the top-down or the bottom-up approach. The ‘**top-down approach**’ can be described as a macroeconomic review of the conditions of a country. More precisely, by using this approach one studies indicators such as growth, balance of payments, inflation, interest rates and monetary and fiscal policy. After having chosen the country of investment, one evaluates the firms’ growth prospects and then decides in which industries and firms to invest.\(^ {20} \)

The ‘**bottom-up approach**’ is done in the opposite way. That is, one researches different industries and companies directly. For example, examining the balance sheet, income statement and the firm’s competitive environment is what characterises this approach.\(^ {21} \)

### 2.4.3 Sharpe Index

The ‘**Sharpe Index**’ is a single-index performance evaluation measure that is useful for comparing portfolios, or comparing a portfolio against an index or another benchmark. It measures a portfolio’s risk-adjusted return and what makes it unique is that no consideration is taken to how index has performed as each portfolio is evaluated independently.\(^ {22} \) More precisely, it is a measure of the reward/risk ratio. The Sharpe Index’s formula is expressed as follows:

\[ Sh_p = \frac{R_p - R_f}{SD(R_p)}. \]

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\(^ {19} \) Fabozzi (1996), pp. 48-52.

\(^ {20} \) Gratry & Company homepage, “Top-down/Bottom-up”.

\(^ {21} \) Ibid.

\(^ {22} \) Andersson & Haglund (2001), pp. 16 and 23.
Where \( R_p = \text{Portfolio return}; \)
\( R_F = \text{Risk-free rate, for example the interest rate for a one-year Treasury bill}; \)
\( SD(R_p) = \text{Standard deviation of portfolio}. \)

Thus, the Sharpe Index measures the excess return relative to the total variability of the portfolio. A high value of the Sharpe Index would mean a high risk-adjusted return and vice versa.\(^{23}\)

### 2.4.4 The Efficient Frontier

The efficient frontier is defined as the subset of portfolios that will be preferred by all investors who exhibit risk aversion and who prefer more return to less.\(^{24}\) The main point with the efficient frontier is to find an optimal portfolio strategy and we will use this technique in the quantitative part of the analysis.

However, since the technique for calculating the efficient frontier contains slightly difficult mathematics, we have chosen to place this part of the frame of references in Appendix A. Similarly, Appendix B contains a real numerical example of how we have calculated the efficient frontier presented in the analysis.

**Key Words:**

- Bottom-up and top-down approach
- Macroeconomic performance
- Diversification
- Portfolio return
- Efficient frontier
- Portfolio risk
- Emerging markets
- Risk propensity
- Macroeconomic forecast
- Sharpe Index


3. Chinese Politics and Economy

This chapter is divided into three sections. The first section is an introduction to Chinese politics. The second section contains information on China’s economic performance and some selected economic indicators. The third section contains information on trade relations and other relevant market conditions.

3.1 An Introduction to Chinese Politics

It is untrue to claim that Communism ended in 1989-1991. The Communist Party (CCP) was put to the test during those turbulent years, notably by the Tiananmen protests of 1989, but it did not crumble. The party still rules over 1.3 billion people, a fifth of the world’s population thanks to a Leninist apparatus of power and coercion. The following quote may illustrate how the Communist Party’s political approach still works today:\(^{25}\)

“If the party is a dog, it is a little white around the muzzle, preferring to snooze peacefully by the fire rather than to snarl at the gates of Marx. But when called upon by its masters to bite, it still knows how.”

(Vaclav Havel, President of the Czech Republic)

Before proceeding with China’s political development, Table 3.1 provides an overview of China’s political structure and although not described any further throughout the text, it aims to help the reader put the following sections into a wider context.

Table 3.1 China’s Political Structure

<table>
<thead>
<tr>
<th>Official name:</th>
<th>People’s Republic of China.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form of government:</td>
<td>One-party rule by the Chinese Communist Party.</td>
</tr>
<tr>
<td>The executive:</td>
<td>Fifteen-member state council elected by the National People’s Congress.</td>
</tr>
<tr>
<td>Head of state:</td>
<td>Jiang Zemin is currently state president, general secretary of the party and chairman of the Central Military Commission.</td>
</tr>
<tr>
<td>National legislature:</td>
<td>Unicameral National People’s Congress with 2,979 delegates elected by provinces, municipalities, autonomous regions and the armed forces.</td>
</tr>
<tr>
<td>Regional assemblies:</td>
<td>22 provinces, four special municipalities and five autonomous regions.</td>
</tr>
<tr>
<td>National elections:</td>
<td>Elections for the National People’s Congress is due by March 2003.</td>
</tr>
<tr>
<td>National government:</td>
<td>The politburo (political bureau, currently 20 members), its seven-man standing committee is however the focus of power.</td>
</tr>
<tr>
<td>Main political organisation:</td>
<td>Chinese Communist Party.</td>
</tr>
</tbody>
</table>


Now turning to the political development, the Chinese Communist Party founded the People’s Republic of China (PRC) in 1949. Its chairman, Mao Zedong, then led the country for nearly three decades. After gaining power in 1978, two years after Mao’s death, Deng Xiaoping began to introduce economic reforms and in the process consolidating his own authority.\(^ {26}\) China’s leadership currently wants to continue economic liberalisation and sustainable

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\(^{25}\) The Economist, Nov 15\(^{th}\) 2001, “Bitter and bickering”.

\(^{26}\) The Economist Intelligence Unit, Oct 26\(^{th}\) 2001, “China Country Report: Factsheet”.

11
growth, without reducing political control. Reform of under performing state-owned industries and the indebted state-owned financial sector is an essential factor.\footnote{The Economist Intelligence Unit, Oct 26th 2001, “China Country Report: Factsheet”.

The Chinese regime has been characterised by internal opposition. The main reason for the conflicts has been the constant changes of the constitutional laws. The first constitution was passed in 1954 but was eliminated during extensive periods of time due to political unrest. New constitutions have been passed three times since then: in 1975, 1978 and 1982. The main reason for establishing these new constitutions has been a willingness to strengthen and stabilise the communist system.\footnote{Lindahl (1998), p. 246.}

Nowadays, the regime is facilitating entrepreneurial activity, but formerly there existed laws prohibiting hiring, or as it was called, ‘exploitation’ of workers in private firms. This made it difficult for the private sector to expand why the sector remained small. In recent years, the private sector has been the fastest growing and most efficient sector in the Chinese economy. This is a direct consequence of the fact that the government encourages bourgeois economic activity, mainly as a means to create employment in urban areas.\footnote{Lindahl (1998), pp. 249-250.}

During the years, the Chinese government has been subject to both internal and external criticism. Even though it claims to be a democratic state, China has a history of repression, which inevitably has led to political dissidence. However, as the communist party has formed the entire Chinese society, it has been difficult and even dangerous for dissidents to emerge publicly. Also, there have been no organised dissident movements in China due to the facts that the Chinese government has been successful in repressing these but also because dissidents rarely have been able to come to any agreements.\footnote{Taylor (1996), p. 42.} The Chinese Communist Party does not have any clear political opposition, although the government has identified the Falungong sect and the China Democracy Party as potential rivals.\footnote{CIA homepage, “The World Factbook 2001”.

Leadership changeover

The Chinese Communist Party is preparing for a leadership changeover in autumn 2002. Along with most government ministers and around 100 members of the CCP central committee, President Jiang Zhemin will step down from his post as state president. Vice president Hu Jintao is expected to take his place, with a like-minded group of technocrats forming his inner circle.\footnote{The Economist Intelligence Unit, Jan 28th 2002, “China Country Report: Forecast”.}
Corruption

Corrupt city leaders and bureaucrats are a serious problem for China as this is creating a massive discontent among the public. Although several corruption scandals involving city leaders and mafia bosses have recently unfolded, the actual corruption rate is believed to be much higher. However, the problem is not only the corruption itself, but rather that few people dare to accuse a public leader still in office. Such an accusation is considered illegal as it “disrupts public order”.33

Party, government and managers of state-run companies are intertwined

At the end of 2000, the Chinese Communist Party had 64.5 million members but only 17.4% were women and 6.2% were ethnic minorities. The members of the party are relatively old (77.7% of members are over 35) and poorly educated (only 20% of members have completed middle-school education). Party membership is a benefit in both material and professional life, and in some government bodies effectively a prerequisite of advancement.

Furthermore, the Communist Party, government and managers of state-run companies are highly intertwined. In the late 1980s there was much talk of the “separation of functions” between party and government, but little has changed as the party, government and state-run companies are still today staffed by almost the same people.34

Local autonomy versus central rule

After 1949 there was a centralising thrust, based on the Soviet model of control and development. Both economic and political decisions were of a top-down nature. However, as the culture of commerce has spread throughout the bureaucracy, the autonomy of local governments has increased, mainly for mobilising local power and responsibilities. Local governments tend to regard their mandate as being heavily economic in content, consisting largely of the requirement to maximise employment and revenue-raising opportunities.

However, there is a continuing struggle between local and higher-level officials over the closure of state-owned enterprises (SOEs) that are not viable. Responsibility for the welfare of workers at SOEs that have been closed down devolves upon local governments. As a result, they tend to resist central government orders to hasten the reform and closures of SOEs. The central government usually commands compliance with its major policies, but most provincial bureaucrats are now appointed locally and their disloyalty is severely trying the patience of the central government.35

3.2 Economic Performance

Since 1978, the Chinese economy has been changing from a straightforward planned economy to a market-based economy, however still communist. The reason behind this is the failure of the Chinese government, during the ruling of Mao Zedong, to create a prosperous economy despite the vast potentials of the country. In 1978, Deng Xiaoping introduced what is usually referred to as ‘the second revolution of China’.36 The logic behind this revolution

33 The Economist, Nov 22nd 2001, “Rocking the Boat”.
34 The Economist Intelligence Unit, Sep 5th 2001, “China Country Report: Political Forces”.
35 Ibid.
was that by deregulating the economy and encouraging entrepreneurship, the economy would be more efficient and consumption and standard of living would be raised through improved accessibility to consumption goods through increased wages. Some important parts of the reforms were a rationalisation of public enterprises and to make prices on goods and services react to market demand. Also, the Chinese government began to open up China to foreign influences such as technology import, borrowing abroad and foreign investment in China.

The economic revolution became an instant success, but it was put to a halt in 1989 when students protested against corruption and for political freedom at Tianamen Square in Beijing. The government’s response to these protests was a massacre that led almost the entire world to isolate China from the world economy. At the beginning of the 1990s the isolation began to loosen up and China was again invited to be part of the world economy. Since then, the Chinese economy has expanded dramatically. This development is shown in Table 3.2.

### Table 3.2 Economic Indicators I

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP (US$ billion)</td>
<td>216.2</td>
<td>362.0</td>
<td>997.5</td>
<td>1,076.9</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
<td>NA</td>
<td>198</td>
<td>780</td>
<td>840</td>
</tr>
<tr>
<td>GDP (average annual growth in %)</td>
<td>10.1</td>
<td>10.3</td>
<td>7.1</td>
<td>7.9</td>
</tr>
<tr>
<td>Gross domestic investment/GDP (%)</td>
<td>35.2</td>
<td>34.7</td>
<td>37.1</td>
<td>37.3</td>
</tr>
<tr>
<td>Expenditure on education/GDP (%)</td>
<td>NA</td>
<td>2.9</td>
<td>2.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Exports of goods and services/GDP (%)</td>
<td>7.6</td>
<td>17.5</td>
<td>22.0</td>
<td>25.9</td>
</tr>
<tr>
<td>Exports of goods and services (average annual growth in %)</td>
<td>11.0</td>
<td>16.5</td>
<td>13.9</td>
<td>32.0</td>
</tr>
</tbody>
</table>


It should be noted how China’s GDP has risen sharply since the 1980s, whereas the annual growth rate has stayed roughly the same. During the last couple of years, the growth rate has slowed down even though it is still high compared with world growth rates. The gross domestic investment figure has risen with roughly the same rate as GDP, while exports of goods and services have increased more than GDP. This fact signifies a growing importance of international trade as a source of income.

However, the Chinese government recently admitted that the public statistics might frequently be inadequate and exaggerated. According to the government, China’s high growth figures during the last couple of years might have to be revised. The reason why the economy might be overstated is that local officials have a tendency for presenting numbers that are enhanced to boost their own careers. However, the Chinese government has recently sent out 4,500 professionals to deal with the faulty statistics and improve the trustworthiness. As of now, no one really knows what the real figures are but the government hopes that the private economy will counterbalance the exaggerations of the public statistics.

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40 *Dagens Industri*, Nov 27th 2001, “Kina erkänner att statistiken visar överdriven tillväxt”. 

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Another interesting issue is that since the economic revolution in the late 1970s, the battle against inflation has been widely discussed. The main cause of the Chinese inflation is said to be the many state-owned enterprises still operating in China. As these industries are less productive than their private counterparts, they borrow a lot of money that usually ends up as bad debts. \(^{41}\)

If we take a look at Table 3.3, we can confirm that the Chinese government’s attempts to reduce inflation have been successful. Between 1994-1996, the consumer price index (CPI) rose by approximately 10% per year, but the inflation was under control five years later with only a slight increase of about 1%. \(^{42}\) However, the period during 1997-1999 was a period of deflation, but since then, prices have started to pick up again, and now at a more moderate pace. \(^{43}\)

Furthermore, in the index of industrial production we see that the growth of real output slowed down somewhat during 1998 and 1999, but is slowly beginning to increase again as the year 2000 and 2001 show figures of relative increases of more than 10% per year. The Treasury bill rates (i.e. the short-term risk free nominal interest rate) have shown a somewhat fluctuating pattern. Since 1994 it has fluctuated between 6% and 4% only once exceeding these limits going up to 7.50% in 1996.

<table>
<thead>
<tr>
<th>Table 3.3 Economic Indicators II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Consumer price index</td>
</tr>
<tr>
<td>Index of industrial production</td>
</tr>
<tr>
<td>Treasury bill rates(^a)</td>
</tr>
<tr>
<td>Long-term government bond yields</td>
</tr>
</tbody>
</table>

\(^a\) Treasury bill rates are for Hong Kong only.


3.3 Trade and Trade Agreements

China’s trade balance has moved somewhat cyclically and imports have frequently exceeded exports resulting in a negative trade balance. \(^{44}\) Furthermore, China’s terms of trade have moved from being positive to negative. The reason may be that Chinese imports are less concentrated among some products than the Chinese exports and consequently, China is a price taker regarding imports and the opposite regarding exports. \(^{45}\)

China was one of the first socialist states to orient its trade towards trade with market economies. In the early 1990s, the Chinese trade was mainly focused on the Hong Kong market, which in turn re-exported the goods to other countries because of their superior marketing knowledge. Two major destinations for Chinese exports are the United States and

\(^{41}\) Taylor (1996), p. 44.
\(^{42}\) World Bank homepage, “China at a glance”.
\(^{44}\) Lardy (1994), p.57.
Japan. The United States has become an increasingly important final destination for Chinese goods, now accounting for 27% of China’s total exports and Japan for 20%. A reason for this was that China’s exports were mainly labour-intensive and cheap, which facilitated the introduction on these markets, as the demand on these markets is relatively price-elastic. However, it should be noted that exports are forecasted to decline to about 10-15% in 2001 and 2002 due to poor growth and also because of a high base in 2000. Furthermore, according to the IMF, the world economic outlook for 2002 has been marked down since the terrorist attacks on September 11th. However, the world economy in its whole is expected to grow by 0.8% in 2002, but the projections on growth in the U.S. and Japan have been marked down 1.5 and 2% respectively.

However, according to the fund management firm Robur, China is the only Asian country that can avoid a recession in the ongoing global depression. Financial means such as raised public consumption can keep demand high and thus keep growth on a high level even though private consumption is low. The majority of the other Asian countries lack the high domestic demand of China, instead they are more dependent on the export earnings of, for example, components of IT-equipment. As a result, the depression that hit the Western world last year has had a great effect on, for example, Taiwan and Korea while China has remained virtually unaffected.

In 1980, China signed a bilateral trade agreement with the United States and soon afterwards received a ‘most-favoured nation’ status. This has also led to increasing trade frictions between China and other trade partners as the increase in sales of labour-intensive manufactures in the United States inevitably led to decreases in the sales of the same products of other developed countries. Furthermore, China recently joined the World Trade Organisation (WTO) and forecasts predict that imports will continue to grow faster than exports as a consequence of the fact that tariffs and non-tariff barriers will be fewer. To prepare the economy for the consequences of the entry into the WTO, the Chinese government has amended three major laws relating to foreign investment and also revised several laws to make them compatible with WTO rules.

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46 Asian Development Bank homepage, “China Key Indicators”.
50 Robur homepage, “Kommentar Asien”.
4. The Chinese Stock Market

This chapter is divided into five sections. The first section provides some introductory market statistics on the Chinese market. The second section presents China’s three stock exchanges and a comparison between these. The third section discusses the shareholding system and some of its complications. The fourth section discusses financial policy and reform. The fifth section concludes the chapter by presenting two additional industries: information technology and telecommunications.

4.1 Comparative Market Statistics

The Chinese stock market has been developing very quickly since 1990 and has now more individual stockholders than any country besides the United States. The Chinese stock market is the second largest in Asia, and stocks are traded on three different stock exchanges: The Hong Kong Stock Exchange (HKSE, established in 1914), The Shanghai Stock Exchange (SHSE, established in 1990) and The Shenzhen Securities Exchange (SZSE, established in 1991). In Table 4.1, we find some basic market statistics on the Chinese and U.S. stock markets.

Table 4.1 Market Statistics on the Chinese and U.S. Stock Market

<table>
<thead>
<tr>
<th>Country</th>
<th>Market capitalisation (US$ millions)</th>
<th>Number of listed domestic companies</th>
<th>Number of listed foreign companies</th>
<th>Average company size (US$ millions)</th>
<th>Market concentration¹</th>
<th>Market turnover ratio²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>303,705</td>
<td>518</td>
<td>NA</td>
<td>586</td>
<td>NA</td>
<td>37.3</td>
</tr>
<tr>
<td>Mainland China</td>
<td>42,055</td>
<td>323</td>
<td>NA</td>
<td>130</td>
<td>20.2</td>
<td>115.9</td>
</tr>
<tr>
<td>United States</td>
<td>6,857,622</td>
<td>7,671</td>
<td>541</td>
<td>894</td>
<td>15.2</td>
<td>85.7</td>
</tr>
</tbody>
</table>

¹ Ten largest firms as percentage of market capitalisation.
² Annual trading value / market capitalisation.


What is interesting about Table 4.1 is the difference between developed markets such as Hong Kong and the United States, and an emerging market such as Mainland China. This comparison clearly shows some interesting traits that emerging markets have, for example fewer listed companies, higher market concentration and higher market turnover ratio.

4.2 Differences between the Hong Kong and Mainland Stock Exchanges

On the two mainland exchanges, traded companies are overwhelmingly state-owned enterprises which are largely listed not for their efficiency, but rather because of their political connections. In general, the state-owned enterprises are not transparent and provide little of the financial information that companies must give to investors in international and Western equity markets. 

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There is also a difference regarding what each stock exchange trades. Oil, power and telephone companies are traded on the SHSE, while the SZSE is more like a NASDAQ-inspired exchange, focusing on high-tech and so-called growth enterprise companies, whereas the HKSE is more diversified than the other two stock exchanges.\(^{56}\) Regarding size and liquidity of the two mainland exchanges, it is the SHZE that is the smaller and less liquid of them both.\(^{57}\)

Furthermore, the Hong Kong stock market is one of the most established stock markets in the world and is classified as a developed market. Hong Kong has the second largest stock market in Asia and the seventh largest in the world. Compare this with the two mainland stock exchanges, which both are relatively small and illiquid for an economy the size of China.\(^{58}\) In Hong Kong, there is also a strong presence of the world’s major financial institutions; including foreign banks, overseas securities and commodities trading companies, insurers and mutual funds. Hong Kong is also a free economy with well-established laws for finance and commerce. The trading system is extremely transparent and brokerage and transaction costs are very low. Furthermore, the Economic Intelligence Unit ranks Hong Kong shares in the lowest risk category.\(^{59}\)

Let us now take a look upon how the stock index performance has been for each one of these three stock exchanges. In Table 4.2, we can see how stock index performances have developed during 1995-2000. Note that although the stock exchanges use different stock indexes, we have constructed a common index and used year 1995 as base year to be able to compare the performance of these different stock exchanges.

<table>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong Stock Exchange</td>
<td>100</td>
<td>143</td>
<td>116</td>
<td>95</td>
<td>156</td>
<td>133</td>
</tr>
<tr>
<td>Shanghai Stock Exchange</td>
<td>100</td>
<td>165</td>
<td>216</td>
<td>207</td>
<td>246</td>
<td>581</td>
</tr>
<tr>
<td>Shenzhen Securities Exchange</td>
<td>100</td>
<td>135</td>
<td>139</td>
<td>158</td>
<td>207</td>
<td>336</td>
</tr>
<tr>
<td>Emerging Markets Index(^a)</td>
<td>100</td>
<td>106</td>
<td>92</td>
<td>66</td>
<td>109</td>
<td>74</td>
</tr>
<tr>
<td>World Index(^a)</td>
<td>100</td>
<td>117</td>
<td>134</td>
<td>164</td>
<td>203</td>
<td>175</td>
</tr>
</tbody>
</table>

\(^a\) The Emerging Markets Index and The World Index are the official indexes of the investment bank Morgan Stanley Capital International.

**Source:** International Federation of Stock Exchanges and Morgan Stanley Capital International homepages.

Two patterns regarding the three Chinese stock exchanges can be distinguished in the table above. First, we see that the SHSE and SHZE have had a similar performance during the last six years, that is a positive and uninterrupted trend despite the Asia crisis, and also that they have risen very sharply since 1999 and onwards. Second, the HKSE has performed differently than the other Chinese exchanges. The HKSE seems to follow basically the same pattern as the Emerging Markets Index, experiencing strong ups or downs interchangeably every year. The HKSE has also performed relatively poor compared with the rest of the world, and one should also notice how the HKSE fell heavily during the Asia crisis and that it does not shows the same remarkable rise as the two mainland exchanges do.

\(^{56}\) *Financial Times*, Nov 13\(^{th}\) 2000, “First big step on the long road to reform”.


\(^{59}\) Hong Kong Stock Reports homepage, “Hong Kong stock market in a nutshell”.

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The reason for the stock exchanges’ different performance is partly because the mainland exchanges uses China’s non-convertible currency, meaning that these stock markets operate independently of the ups and downs of other exchanges around the world, whereas the HKSE is more dependent on the international financial development.60

4.3 Shareholding System and Complications

There are four general categories of shares in China: 1) *A-shares* are restricted to domestic investors and denominated in the local currency, Chinese Yuan (CNY); 2) *B-shares* are restricted to foreign investors and denominated in US Dollars in the SHSE and in Hong Kong Dollars in the SZSE. Although A-shares and B-shares have equal voting rights, the government puts a strict restriction on the proportion of a firm’s B-share issuance, which makes foreign take-overs almost impossible; 3) *H-shares* are also available to foreigners. These are a handful of significant mainland companies listed on the HKSE, also known as ‘red chips’; 4) *N-shares* are Chinese companies listed on the New York Stock Exchange.61

The biggest problem for China’s stock market is its fragmentation. The two exchanges on the mainland – Shanghai and Shenzhen – lists and deals both A-shares and B-shares. However, the B markets are small, having been overtaken by the larger H-share issues traded in the liquid Hong Kong market. However, one complication for foreign investors is that information is seldom available in English. 62

In March 2001, the government announced that citizens would be allowed to buy class B-shares and the result was that money poured into the country to residents from friends and relatives abroad. As a consequence, buyer’s hugely outnumbered sellers and share prices skyrocketed. Almost none of these investors buy for the long-term and few spend time studying the companies involved, partly because information is sketchy at best. Instead, the market moves largely on rumours and second-guesses. It even seems as if residents regard the stock market as a no-lose game and that the stocks’ valuations are unsustainable high because of scarcity of stocks rather than of the shares’ actual value. The overall result has been a money-driven market and the building of what some analysts regard as a dangerous market bubble. The class A-market has been raised for years, even though many of the companies listed there is low quality by international standards.63 Share prices have also been very volatile, mainly due to the limited supply of securities, the significant build-up of personal savings in the banking system and the limited number of attractive alternative investments for Chinese residents.64

With China’s entry into the WTO, regulators have begun looking for ways to make the market more liquid to compete with offshore markets when China’s financial system barriers begin to fall. China is also expected to eventually merge the B share market into the larger Yuan-denominated A-share market, but that will have to wait until the country’s currency is more freely convertible, something that is not expected to happen for several years.65

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60 *Financial Times*, May 8th 2001, “China’s new issues market”.
63 *Financial Times*, May 8th 2001, “China’s new issues market”.
65 *Financial Times*, May 8th 2001, “China’s new issues market”.
4.4 Financial Policy and Institutional Reform

The development of China’s stock market has been dramatic, but people in the brokers business claim that it badly needs a more rational structure and more equal valuations. Since approximately 15 years back, China’s socialist regime has adopted an ‘if you can’t beat them, join them-strategy’ and declared that financial markets will be the cornerstone of modernisation in China and widespread reforms of sectors and policy are now taking place.\(^{66}\) This kind of institutional reform is common in socialist economies as they are beginning to realise that the underlying institutional framework is often the source of poor economic performance and that they need to restructure it.\(^{67}\)

Apart from the reforms in the banking and financial sector that are described more in detail in the two following sections, some other alarming issues in contemporary China that can be derived back to a poor institutional framework are the following:

- Corporate law is quite unclear.
- Securities regulation and shareholder protection is insufficient.
- Unified control and supervision is needed.
- Stock markets are small, illiquid and volatile.
- Market information is inadequate.\(^{68}\)

4.4.1 Banking Sector Reform Dilemma

The greatest structural weakness in the Chinese economy is the level of non-performing loans (NPLs) in the domestic banking system. Independent analysts believe that as much as 50% of the loans in the ‘big four’ state banks could be non-performing. However, official estimates are claiming nearer 30%. Such fragile underpinnings are a source of concern for the government, partly because the ‘big four’ – the Industrial and Commercial Bank of China, the Bank of China, the Agricultural Bank of China and the China Construction Bank, account for around 80% of assets in the domestic financial system. The government has however recognised the importance of action, since these bad loans may have disastrous effects on the economy as whole.\(^{69}\)

The Chinese government is facing somewhat of a ‘damned if you do and damned if you don’t dilemma’ as they are forced to shut down badly managed companies although aware of the market’s reactions. The recent closure of Guandong International Trust and Investment Corporation (Gitic), a badly managed investment company with underperforming assets, excessive foreign borrowings and facing an increasingly acute liquidity crisis, was said to be a necessary step. On the other hand, the sudden decision to shut down one of China’s best-known finance companies and largest international borrowers caused a short-term crisis of international confidence in Chinese creditworthiness. The failure of Gitic was a warning shot to the rest of the state-owned financial community, as it showed that the government is not prepared to come to their rescue. Due to the strength of the foreign reactions, the government has proclaimed that it will tread more gently in handling financial institutions and rather than closing them down, they will look for alternative solutions instead.\(^{70}\)

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\(^{66}\) Dipchand (1994), pp. 159-162.
\(^{67}\) North (1990), p. 110.
\(^{69}\) Financial Times, Oct 8th 2001, “Bad debts dog the big four”.
4.4.2 Financial Sector Reform

China has speeded up reforms to address some of the problems in its financial sector, mainly due to the accession to the WTO, which demanded a commitment to liberalisation and an opening up to foreign competition. It has streamlined the central bank’s regional organisation, introduced a more accurate and transparent system of asset classification and established the first asset management company to repackage and sell bad debts, mainly through debt-equity swaps.71

As the government has recognised the importance of the stock markets for attracting capital, they now want its residents to take their money out of the banks and put it into the markets, by simply signalling that it will pursue policies to ensure that stock prices remain high.72 Furthermore, getting companies to be open and honest with stock market investors about their financial health is an important area of reform. Other problems that need to be dealt with are the lack of independent boards and the malpractice of unprofessional investment decisions.73 However, according to Vincent Chan, head of China Economics and Strategy at UBS Warburg in Hong Kong, China’s financial reforms depend on the government’s ability of ensuring a stable macroeconomic environment to allow interests rate to remain low.74

4.5 Industries and Trends in the Chinese Market

If the companies want to stay ahead as the economy becomes more open and mature and Chinese competition is intensifying, companies are expected to replace many workers with machines.75 However, the good news is that the Chinese economy is already strong and can now compete with its neighbouring countries in all sectors. Foreign capital is to a greater extent being directed towards China and many manufacturers are moving out of neighbouring countries and into low-wage China.76 Apart from the banking and financial sector that has previously been described, there are mainly two industries that are very high-growth and may be particularly interesting for investors.

4.5.1 The IT Industry

China’s IT market is the fastest expanding market in Asia and is expected to surpass Australia and to be the largest market in the Asia Pacific region (excluding Japan). The compound annual growth rate between 1999-2004 is projected to be nearly 26% but despite strong growth in the China IT market, growth is still slower than the general industry expectation. Both government policymakers and end users increasingly view IT adoption as a critical factor of China’s participation in the international community.

Despite the impressive growth, stock analysts say that an IT stock market bubble is being created and technology stocks listed on other Asian markets were in March 2000 hit by strong waves of selling. So this is somewhat of reminder of that the technology bubble cannot expand forever.77

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71 World Bank homepage, “Country brief: China”.
73 Financial Times, Nov 13th 2000, “First big step on the long road to reform”.
74 UBS Warburg homepage, “Press release on Oct 16th, 2001”.
75 Financial Times, Nov 13th 2000, “Honing its competitive edge”.
76 Dagens Industri, May 31st 2001, “Tigrarna får ökad konkurrens av Kina”.
77 Australian Broadcast Corporation, March 14th 2000, “Internet stockmarket bubble bursts in Asia”.
4.5.2 The Telecommunications Industry

Consider the fact that 75% of China’s population has never made a phone call, which are almost one billion people. Other impressive figures are that two million new telephone rentals are signed each month, telephone lines are being constructed in a very high pace and that every fifth new mobile user in the world is Chinese. However, it is the mobile industry that is expanding the most, subscribers currently amount to about 70 million and average annual growth during 1994-1995 was about 94%. Thus, the telecommunications pie in China is potentially huge and Mr. Kobler, chief representative of AT&T China, forecasts that the telecom industry will double in size over the next five years.

China’s burgeoning mobile market is the second biggest in the world after the United States, and China’s WTO agreements are laying down timetables for foreign investment in telecom service and this include crucial commitments to improve the regulatory framework. The government has also committed to create a regulatory environment aimed at ensuring that the existing state-run monopolies provide fair treatment on interconnection and other issues relating to newcomers. But realisation is likely to be slow, the two state-owned companies China Mobile and China Unicom dominate China’s mobile industry, and its fixed line business is also run by a state monopoly, China Telecom. Thus, there are few incentives for these giants to form full strategic partnerships with foreign companies or to open up to new competitors.

Ironically, it may eventually be domestic competitive pressure rather than rule changes under the WTO that forces the sector to open up to foreigners. There are a growing number of other Chinese state-run companies demanding access to the mobile market, including fixed line operator China Telecom and the smaller China Netcom Corp. If these companies receive licenses, existing players such as China Mobile will have to become more innovative in marketing and distribution in order to compete. WTO is likely to open up many of these companies, which previously had been cash-starved, to new foreign investment and the chance to improve their market share.\(^78\)

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\(^78\) Financial Times, Nov 13\(^{\text{th}}\) 2000, “Foreigners eye the China pie”.  

5. China Equity Funds

Five selected China equity funds are described in this chapter to show examples on funds that one can find on the market and to give some directions on where to find these. One fund will be described at the time, and both general information about in what industries and major companies the fund invests in will be presented, as well as more detailed economic information on standard deviation, Sharpe index and accumulated growth.

5.1 Aragon SKAPA Aktiefond Kina

The Aragon equity fund for China invests in Chinese companies that are primarily active on the Chinese mainland. The distribution between Hong Kong equities and Shanghai/Shenzhen equities is 54% against 46% and the major sector in which the fund invests is services with 17.4%. Among the largest holdings of the fund, one can find China mobile HK Ltd China Unicom and Petrochina Co ‘H’. 79

Concerning the fund’s accumulated growth, an investor that invested SEK 100 in 1998 when the fund was created, would find that the investment had grown to SEK 133 in 1999 and to SEK 168 in the year 2000. On November 20th 2001, the standard deviation was 43.59%. On the same date, the Sharpe-index was 0.4997. 80

5.2 SkandiaLink Multi-Link China Mainland, China Securities

This fund invests in equities quoted on the stock exchanges on Mainland China. A few of the five largest holdings are in the companies Shanghai Vacuum Electron Devices Co Ltd ‘B’, China First Pencil ‘B’ and Shanghai Automotive ‘A’. 81

About the fund’s accumulated growth, an investor that invested SEK 100 in 1999 when the fund was created, would find that the investment had grown to SEK 163 one year later. On November 20th 2001 the standard deviation was 59.98%. Also, on the same date, the Sharpe-index was 0.8275. 82

5.3 FF-Fleming China Fund

The FF-Fleming China Fund aims at investing directly in Chinese companies quoted on the Chinese stock exchanges or investing in companies that are active on the Chinese market but quoted on other stock exchanges, and preferably the HKSE. The fund manager, Steve Luk, uses a bottom-up approach pursuing value or growth depending on current market conditions. The fund has achieved top-returns over the past five years as a consequence of good stock selection. Some of the largest holdings are in Legend Holdings, China Unicom and China Mobile HK Ltd. 83

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79 Morningstar homepage.
80 Morningstar, Johan Ekberg.
81 Morningstar homepage.
82 Morningstar, Johan Ekberg.
83 Standard & Poor homepage, “Fund ratings”.
Regarding the fund’s accumulated growth, an investor that invested SEK 100 in 1995 when the fund was created, would find that the investment had grown to SEK 171 in 1997 and to SEK 194 in the year 2000. On November 20th 2001, the standard deviation was 36.95%. Also, on the same date, the Sharpe-index was 0.5384.84

5.4 Invesco GT Greater China Opportunities Fund (A)

The Invesco GT Greater China Opportunities Fund invests with an exposure to the economies of Hong Kong and Mainland China. The emphasis is on larger companies with above average growth prospects. The distribution between Hong Kong and Mainland China is 93% against 7%. The fund manager, Billy Chan, uses a bottom-up management within a thematic overlay. The approach is active and aggressive and Mr. Chan exploits the economic cycle to identify areas of opportunity. In December 2000, the portfolio had an overweight of investments in property and smaller banks. The fund has significant holdings in, for example, Cheung Kong Hdg, PetroChina Co ‘H’ and HSBC Holdings Co Ltd.85

Regarding the accumulated growth of the fund, an investor that invested SEK 100 in 1995 when the fund was created, would find that the investment had grown to SEK 290 in 1997 and to SEK 386 in the year 2000. On November 20th in 2001, the standard deviation was 30.78%. Also, on the same date, the Sharpe-index was 0.5399.86

5.5 Invesco GT PRC Fund (C)

The Invesco GT PRC Fund invests in equities in mainly Chinese companies. The management approach is bottom-up and value-driven as well as aggressive and active. Thus, there are no impositions on investments in any asset class. When it comes to stock selection, the search for ‘undiscounted change’ is fundamental. The fund is concentrated to 27 holdings and 58% invested in the market’s top-10 blue-chip companies. The most important sector in which the fund invests is banking and finance. China Southern Airlines, China Mobile HK Ltd (7.5%) and PetroChina Co ‘H’ (7.5%) are among the fund’s largest holdings.87

Regarding the fund’s accumulated growth, an investor that invested SEK 100 in 1998 when the fund was created, would find that the investment had grown to SEK 149 in 1999 and to SEK 157 in the year 2000. On November 20th 2001, the standard deviation was 39.50%. Also, on the same date, the Sharpe-index was 0.4883.88

84 Morningstar, Johan Ekberg.
85 Standard & Poor homepage, “Fund ratings”.
86 Morningstar, Johan Ekberg.
87 Standard & Poor homepage, “Fund ratings”.
88 Morningstar, Johan Ekberg.
6. Analysis

The analysis is divided into a qualitative part and a quantitative part. In the qualitative part, the pros and cons of investing in China are analysed from three different perspectives: (1) overall opportunities and risks due to economic, political and institutional conditions, (2) macroeconomic conditions and (3) industry sector conditions. The quantitative part consists of elaborating an optimal investment strategy for Chinese equities.

6.1 Qualitative Analysis

6.1.1 Opportunities and Risks: Economic, Political and Institutional

We have concluded that most opportunities can be derived back to economic structure and trade conditions, whereas most risk factors can be derived back to political and institutional conditions – and this observation also constitutes the structure of this section.

Box 6.1 below summarises the opportunities and risks for the Chinese market that can be derived back to economic structure and trade conditions.

<table>
<thead>
<tr>
<th>Box 6.1 Economic Opportunity and Risk Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunities:</strong></td>
</tr>
<tr>
<td>• Economic liberalisation and WTO entry</td>
</tr>
<tr>
<td>• Cheap labour and productivity gains</td>
</tr>
<tr>
<td>• Huge potential for the inner market</td>
</tr>
<tr>
<td>• A few high-growth sectors</td>
</tr>
<tr>
<td><strong>Risks:</strong></td>
</tr>
<tr>
<td>• Intra-year volatility on mainland stock exchanges</td>
</tr>
<tr>
<td>• Export sector is affected by weak growth in the U.S. and Japan</td>
</tr>
</tbody>
</table>

China has been heading towards a more globally oriented economy and its recent entry in the WTO creates possibilities, both for the Chinese economy and for international investors. The economic liberalisation may also bring economic growth, but the competition will also harden as foreign companies enter their market. As we see it, Chinese companies face a tougher competition on two fronts: First, on their own domestic market as foreign companies will establish new manufacturing facilities in China. Second, imported goods from developed countries can offer high-tech products that the Chinese may find difficult to outperform.

Furthermore, to survive a tougher competition, Chinese companies are expected to replace many workers with machines. However, there are other factors that can have implications on competition and productivity and that need to be taken into consideration. First, in Table 3.2 ‘Economic Indicators I’, one saw how China is investing a huge 3% of GDP in education and this might be interpreted as a commitment to move away from its positioning as a low-wage manufacturing country. Historically speaking, becoming a knowledge-based economy has required the country to attract educated professionals with the result of higher salaries. Also, a reforming of personnel policies linking salaries to performance rather than to lifelong loyalty and allowing a free flow of talent has been crucial to achieve this. Second, an investment in education also normally affects the workers’ productivity, with a demand for higher wages as a result. However, whether productivity improvements are caused by investment in machines or in education is less relevant for investors. According to economic theory, ceteris paribus, both developments should be positive for a company’s earnings.
Though it is true that the country has a huge potential, the economic development is led by the high-growth IT and telecommunications sector in primarily the eastern and coastal regions of Beijing, Hong Kong and Shanghai. This might indicate that the impressive economic development does not apply to the whole country. One fact that supports this line of argument is the information in Table 3.2 ‘Economic Indicators I’, namely that the average GDP per capita is only $840, which in turn gives a daily budget of about 2$ per day. Thus, the wealthy and fast-growing coastal regions are hardly representative for the whole country, hence a substantial dispersion of wealth between the country’s regions is evident. Therefore, it may take a substantial amount of time before the country can live up to what investors have always been dreaming about. Although the country actually has 1.3 billion potential consumers, neither history nor the current socio-economic structure provides little basis for thinking that the China dream of foreign investors may be any more than that – a dream.

Let us now turn to risk factors instead. When examining the information on the three different stock markets in Table 4.2 ‘Stock Index Performance Comparison’, the Hong Kong exchange appears to be the most stable one. However, it has had a poorer stock index performance than its mainland counterparts, partly depending upon that it is more globally integrated and has followed the weak financial development of the rest of the world. On the other hand, although the mainland stock exchanges have had a superior stock index performance this does not necessarily mean that they are a safe bet. They become volatile if examining monthly variation instead, as heavy falls in share prices have been followed by even sharper rises, which have eventually resulted in a positive stock index performance. Therefore, investing horizon is a crucial factor, as putting the money into the mainland exchanges in the short run may be risky due to their intra-year volatility.

Furthermore, China’s international trade with the United States and Japan has become an increasingly important source of revenue, now accountable for 47% of total exports. According to the IMF’s world economic outlook for 2002, the U.S. and Japan will experience weak growth, which might affect China’s export sector. However, from a global perspective, the world economy is growing faster than these regions and therefore, there may be a potential for accommodating China’s export growth if it can properly readjust its export strategy and find alternative markets.

Let us now turn to political and institutional conditions instead. Box 6.2 below summarises the opportunities and risks for the Chinese market that can be derived back to political and institutional conditions.

<table>
<thead>
<tr>
<th>Box 6.2 Political and Institutional Opportunity and Risk Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opportunities:</strong></td>
</tr>
<tr>
<td>• Reforms of the institutional framework</td>
</tr>
<tr>
<td><strong>Risks:</strong></td>
</tr>
<tr>
<td>• Inefficient state-run companies</td>
</tr>
<tr>
<td>• Unpredictable economic and public policy</td>
</tr>
<tr>
<td>• Lack of insight and public control</td>
</tr>
<tr>
<td>• Corruption, unreliable statistics and lacking market information</td>
</tr>
</tbody>
</table>

The reforms of the institutional framework may be of major importance for future investments. As China is reforming several areas simultaneously, such as merging the fragmented stock markets and reforming its financial sector, one gets the impression of a government that is committed to institutional improvement. However, many of these reforms have been quite radical, such as closing down badly managed banks and the government is not handling change very gently, which might be interpreted negatively by investors.
China’s mismanagement of the state-run companies constitutes a large risk. As members of the Chinese Communist Party usually appoint the managers of these companies, these may be appointed because of their political ties rather than qualifications. One implication to consider is that the gradual increase in foreign competition because of the WTO entry will expose the weakness of the state-owned sectors and this might have consequences when they suddenly face fierce global competition. However, the state-run companies’ ability of survival may be dependent on their ability of successfully dealing with the problem with the non-performing loans and increasing their efficiency, productivity and transparency for being able to live up the market’s expectations.

Another political risk that an investor should take into account is that Chinese politics have historically been characterised by sudden and unexpected turnabouts in economic and public policy. Though it now seems as if China has embarked upon the foreign policy of liberalisation, reform and openness to the West, there are some factors that might possibly affect this. First, in the absence of institutions and mechanisms to resolve political conflicts, feuding and intrigue seems to have taken over instead. Internal conflicts between local and central government officials are frequent, which might create further tensions within the Communist Party. Second, although President Jiang Zemin has announced that he will step down from his post as general secretary, we have noticed that he actually holds three official posts and this might indicate that he intends to yield power from the wings. Historically speaking, it has occurred that former leaders in emerging markets countries have found ways of securing immunity or influencing domestic politics even after their resignation, which has been the case in for example Chile (Pinochet, 1990) and Russia (Yeltsin, 1999).

Regarding the lack of insight and public control, this should be a problem mainly on the mainland markets. The Hong Kong market is extremely transparent and should not have any major problem with neither of these. However, the Chinese mainland markets are clearly moving towards more open and transparent markets as the Chinese government has exhorted the Chinese companies to be honest and clear about company information. As long as the information presented by the companies and the stock markets is not transparent, the small international investors may have difficulties in keeping up with their more established investment companies. This is a factor that may possibly hamper the movement of the mainland markets to more global markets and limit the number of investors interested in the Chinese market. However, the risk that big international investment companies will have difficulties because of the language appears small as these usually have Chinese-speaking employees. Furthermore, one tendency is that as it is becoming more common to purchase stocks in China, this puts more pressure on the companies to take greater responsibility for their actions and improve the information to shareholders.

Lastly, corruption scandals, unreliable statistics and scarce market information are obviously something that is interpreted very differently by individuals and reactions are likely to vary. As many growth figures or other results can be overstated, this may lead to a general insecurity, but in the long run, the development may be dependent on the measures that the government takes to revise the problem.
6.1.2 Macroeconomics and the Stock Market

This section analyses China’s macroeconomic development, focusing on key trends rather than on exact numbers. Table 6.1 below summarises our arguments in this section and states how the macroeconomic conditions have developed during the past five years and what their current conditions look like today.

Table 6.1 China Macroeconomic Development Summary

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Past 5 years</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business cycle</td>
<td>Slow increase</td>
<td>Stable and high-growth</td>
</tr>
<tr>
<td>Short-term inflation</td>
<td>Deflation, low inflation</td>
<td>Very low</td>
</tr>
<tr>
<td>Inflationary expectations&lt;</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Interest rate&lt;</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Investor confidence&lt;</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

< Based on interest rates in Hong Kong only.
< Based on other information than changes in yield spread between high and low grade bonds as this information is not available.

Business in China is thriving because of the country’s exceptional GDP-growth. Although the growth has slowed down in recent years, China is still one of the fastest growing regions in the world. However, China was facing a downturn in 1998 but the economy has expanded since then. Based on the official index of industrial production and growth figures presented in Tables 3.2 and 3.3 ‘Economic Indicators I and II’, China’s growth appears stable and high-growth. Even though this is good news for investors who want to invest in the stock market because of the companies expected increases in profits, at least two challenges remain. First, some company statistics may be overstated, particularly in state-run companies as their top-management often have close ties to the Communist Party and are fond of their own career advancement. Second, neither should one disregard the fact that competition has continuously become tougher in recent years due to a loosening up of restraints for foreign companies. Therefore, China’s entry into the WTO is an event that needs to be taken into consideration as this might have an affect on overall growth prospects and individual companies’ ability of competing on a tougher market.

Regarding the short-term inflation, the government has succeeded in keeping inflation on a low level. During the last five years, inflation has not exceeded 2.8% on any annual estimation. However, between 1994-1996 inflation was reduced from approximately 24% down to 8%. This fact might indicate several important things. First, from Table 3.3 ‘Economic Indicators II’, one sees that inflation has been very high when industrial output has also been very high. Inflation has been reduced only when industrial output has decreased, and first after the growth had slowed down to the 10%-level, the People’s Bank of China could keep the inflation on a low and stable level, however after first experiencing a period of deflation. Second, despite this observation, it also implies a strong commitment to keep down inflation, to provide China’s companies with a sound business climate and to keep investors content with low interest rates.

Regarding the inflationary expectations and interest rates, the raising and lowering of the treasury-bill rates that can be seen in Table 3.3 ‘Economic Indicators II’ show how one has tried to control inflation. However, solely looking upon these two factors for the outcome of inflation does not provide any clear pattern. This is because during some years, inflation has
unexpectedly risen when interest rates have been raised, and fallen when interest rates have been lowered. Whether this may result from the transmission mechanism not working adequately in this emerging market or involve interference of other market factors that have affected inflation, we dare not say. However, note that in 2001, the treasury-bill rate was lowered from 6% to an all-time low of 4%. According to economic theory, this provides an incentive for inflationary expectations to rise and for investors to hold stocks instead of government bonds.

Investors still seem to have faith in the China dream despite disappointments on artificial growth figures, the companies’ unsatisfactory shareholder information and the Communist Party’s intertwined relation with the market. Historically speaking, China’s rather unexpected public policy has made investors cautious. However, events such as China’s entry into the WTO and increasing economic and financial ties with the exterior suggest that the Chinese government may have realised the importance of handling changes in economic and public policy more gently. In total, investor confidence in China remains high as the economy’s expansion and the impact of the economic slowdowns in Europe, Japan and the U.S. might become rather small because of the Chinese domestic market’s size and fast growth. However, one should consider if the growth figures, skyrocketing stock quotations and general expectations are realistic and based on economic fundamentals. Whatever the answer may be, it is still a fact that investments keep pouring into China.

6.1.3 Industry Sectors

The banking and financial sector faces several challenges that may have implications for investors. The government’s policy of encouraging people to buy stocks by guaranteeing low interests rates and a sound financial climate is one reason to believe that an expansion of the sector might be on its way. However, one also notices a reluctance of letting foreign banks dominate the domestic market. Chinese competitiveness may be in danger because they are, broadly speaking, likely to be less efficient than foreign banks and furthermore, that the institutional framework with poor shareholder protection and unclear corporate law also work to their disadvantage. However, the new public policy of not letting financial domestic banks go bankrupt may instead cause a wave of mergers, acquisitions and restrucutures because simply pouring the tax-payers money into domestic banks standing would also violate the government’s own policy of fiscal restraint. Thus, tougher competition and a changed public policy in the banking and financial sector is affecting the business climate in this sector, which might have implications on certain companies’ market shares and profits.

The telecommunications sector has shown impressive growth during recent years and is currently one of the most promising sectors in China. There are two trends that we would like to point out. First, the opening-up and deregulation of China’s telecommunications sector makes one think of the development of the Nordic telecommunications market during the 1990s. Despite the differences between these regions, there is a point in observing the success that the new and innovative companies have had. That is, although the companies were new and small, they managed to win market shares from a state-run monopoly. In China, the previous mentioned state-run companies China Mobile and China Telecom are infamous for their inefficiency and this weakness may just be what the smaller telecom companies need to establish themselves on a the telecom market. One should also take into consideration if the big state-run companies, which are often managed by CCP officials, would be prepared for a merger or joint venture with foreign companies. This is a relevant issue because efficiency, flexibility and creativity are usually common traits for succeeding in competitive sectors.
Second, another issue that an investor might want to consider is what will happen to competition when foreign telecom giants such as Vodafone and Nokia are allowed to compete on the same terms as Chinese companies.

The IT sector is expanding enormously, stock prices are soaring but few international investors seem to be very interested in this sector. One explanation, which of course is our highly subjective and possibly erroneous view, is that these stocks may be overvalued. Despite an impressive development, China’s stock market is literally speaking ‘emerging’ and all people do not seem to understand how the stock market works, as some believe it to be a no-lose game. However, it is probably not the Chinese IT industry in itself that is sick, but rather the money-driven behaviour of the stock market’s participants. Therefore, because of this over-optimism there may be a tendency for creating a market bubble in China’s IT sector. The dotcom crash in Europe and the United States is a recent example that may remind us of a worst-case scenario, but only the future can tell whether this will occur in China.

6.2 Quantitative Analysis

6.2.1 Estimating the Efficient Frontier

This section elaborates an optimal portfolio strategy by analysing the efficient frontier for an equity portfolio in each of the three Chinese stock exchanges combined with a world portfolio. All calculations rest upon the formulas in the frame of references and the statistics on the Chinese economy presented in the empirical section. The scope of the calculations is between the years 1995 and 2000 and we will present three different combinations of portfolios in the following order: (World portfolio + Hong Kong portfolio), (World portfolio + Shanghai portfolio) and (World portfolio + Shenzhen portfolio). Please note that an example of our calculations can be found in the appendix section at the end of this thesis.

As a world stock portfolio is used for every combination of portfolios, our calculations of average return and standard deviation for the World Index will be presented before moving on to the portfolio calculations. The World Index has had an average return of 12.2% and during the same period of time, the standard deviation for the World Index was 31.1%. As a result, the Sharpe index of a World portfolio is 0.22.

First, the Hong Kong Stock Exchange has had an average return of 11.0% while the standard deviation has been 39.5% and the Sharpe index measures 0.14. The correlation coefficient between the World Index and the HKSE was 0.33. This means that the World Index and the HKSE have a positive relationship. Thus, when the World Index moves, the HKSE will move in the same direction but to a lesser extent. The reason for this is probably that the World Index and the HKSE are rather integrated. As already has been pointed out, the HKSE is probable to follow the movements of the World Index. The fact that the two exchanges have a positive correlation is an argument that supports this statement.

According to our calculations, an efficient portfolio would be investing roughly 98% in a world portfolio and thus 2% in a Hong Kong portfolio. As expected, a portfolio with the above mentioned weights of world market securities and Hong Kong securities would yield an expected return and a standard deviation roughly the same as the expected return of the World Index. Thus, the expected return of the portfolio is 12.8% while the standard deviation would be approximately 20.7%. However, one can see that the expected return of the portfolio is
higher than that one can receive on the World stock exchange and the Hong Kong stock exchange alone. Also, the standard deviation of a portfolio constructed with equities from both a world portfolio and from the HKSE is significantly lower than would be the result of investing in any of these two alone.

Furthermore, the expected return and standard deviation will yield a Sharpe index that is approximately 0.36. Thus, the Sharpe index of this portfolio is clearly higher than the Sharpe index of the two different stock exchanges and the portfolio can be said to have a better relationship between the expected returns and the standard deviations of any of these portfolios alone. This quantification of the Sharpe index is of accordance with the fact that the expected return of the portfolio is higher than that of each portfolio alone while the standard deviation of the portfolio is lower than that of each portfolio alone.

Second, the Shanghai stock exchange has had an average return of 49.4% and a standard deviation of 54.4%. Also, the Sharpe index is quite high compared with a world portfolio, quoting 0.81. This makes the SHSE the most favourable one when it comes to average return, but also the riskiest of the Chinese stock exchanges. The correlation coefficient between the World Index and the SHSE has been a negative 0.53 percent. Broadly speaking, this means that when the World Index moves in one direction, the SHSE will move in the opposite direction but to a lesser degree. This comes as no great surprise as the Shanghai stock exchange seems to be less integrated with the global financial markets than for example the Hong Kong Stock Exchange. However, the more integrated with the global financial markets the SHSE becomes, the greater is the probability that this coefficient will change for a more positive correlation. Still, it is difficult and risky to make any assumptions on how much it will change why the only conclusion drawn is that the correlation will become more and more positive.

According to our calculations, the efficient portfolio should contain roughly 70% equities in a world portfolio while 30% should be invested on the SHSE. A portfolio with the above mentioned weights of world market securities and Shanghai securities would yield an expected return of 23.7% and have a standard deviation of about 43.6%. Compared with the world portfolio's expected return, the expected return of the constructed optimal portfolio is without a doubt more profitable. However, when comparing the standard deviation of the World/SHSE portfolio one notices that the composed portfolio has a standard deviation that is higher than that of the World portfolio alone. Therefore, the decision how to invest is in this case highly dependent on the risk propensity of the investor. That is, a less risk-averse investor might want to compose the above-mentioned portfolio, while a more risk-averse investor would probably choose the World portfolio alone.

To further explain the situation one can compare the Sharpe indexes of this portfolio and the SHSE alone. The Sharpe index of the portfolio, as calculated by using the figures presented above for expected return and standard deviation, measures 0.42. Comparing the portfolio with the World portfolio Sharpe index one sees that the Sharpe index of the World/SHSE portfolio is significantly higher than that of the World portfolio and thus more profitable in terms of expected return relative risk.

Third, the Shenzhen Securities Exchange has had an average return of 29%, which makes it the stock market with the second highest average return. During the same period of time the standard deviation was 22.5%, signifying that it has the lowest risk of the presented stock markets. As a result, the Sharpe index of the SZSE is relatively high, quoting 1.05, which is
the highest value of these stock markets. The correlation coefficient of the Shanghai Stock Exchange and the World Index is a negative 0.35%, and this implies that the Shenzhen exchange moves in a slightly different position than the rest of the world’s financial markets. However, the negative movement of the SZSE is smaller than that of the Shanghai Stock Exchange why one can say that the SZSE is more integrated with the world than its Shanghai counterpart but less integrated than the HKSE.

Our calculations show that the efficient portfolio should invest roughly 93% in world market securities and 7% in Shenzhen securities. This may be a somewhat surprising result as the Shenzhen stock market has had a significantly higher return than that of the World Index. However, the reason for this result might well be that the standard deviation of the SZSE is also significantly higher than that of rest of the world and hence riskier. Our calculations have shown that a portfolio with the above mentioned weights of world market securities and Shenzhen securities would yield an expected return of 13.9% and have a standard deviation of roughly 21.6%. These results are somewhat better than the expected return and standard deviation of the World portfolio alone.

The combined portfolio of Shenzhen and world market securities has a Sharpe index that measures 0.39. This is a result nearly twice the Sharpe index of the World market securities. Therefore, if one’s interest lies in a world portfolio, investing some on the SZSE should be interesting as this would make the expected return somewhat higher while the standard deviation would be lower. Thus, it is not difficult to understand why also the Sharpe index of the World/SZSE portfolio is higher than the Sharpe index of the World portfolio alone.
7. Conclusion

Our conclusion provides an overview of the pros and cons regarding investments in China, as well as an optimal portfolio strategy for Chinese equities. The reader should be aware of that the conclusion is not exhaustive, hence we refer to the analysis section for a more detailed line of argumentation.

Pros for investing in China

- The economic liberalisation and reforms of the institutional framework, particularly of the stock market and the financial sector, create opportunities for growth and a better investment climate. China’s entry in the WTO is an important event for business conditions, though the demands on productivity and efficiency will become higher and this may affect companies differently.

- The Chinese market has a huge potential and investments are pouring into China. The economy is becoming increasingly integrated with the rest of the world and a few high-growth sectors are leading the expansion. However, the economic dispersion between the country’s regions is evident, and growth is concentrated to the booming IT and telecommunications industry in the rich coastal regions.

- The macroeconomic climate and its past development are impressive and currently favourable. GDP-growth is high and stable, inflation is low and the People’s Bank of China seems committed to maintain a sound business climate, interest rates are low and investor confidence is high. However, one should also consider if the growth figures and skyrocketing stock quotations are realistic and based on economic fundamentals rather than possibly over-optimistic expectations.

Cons for not investing in China

- The mismanagement of the state-run companies constitutes a large risk. The problem with non-performing loans and politically appointed managers may lead to severe problems when these are gradually exposed to fierce global competition.

- Due to our own risk-aversive approach, we interpret the mainland exchanges’ volatility as a con. Although these exchanges have had a superior stock index performance, this does not say anything about the monthly variations of the return, where heavy falls in share prices have been followed by even sharper rises. Therefore, investing horizon will become a crucial factor.

- China has become increasingly more dependent on trade with the United States and Japan, and as the IMF has sharply marked down the 2002 economic outlook for these both countries, the performance of China’s export sector may be affected. However, there may still be some potential for accommodating China’s export growth if it can properly readjust its export strategy and find alternative markets.

- The institutional framework is largely responsible for many factors that make investments in China risky. The lack of insight and public control is poor, the market information is
scarce and hard to come by and the Chinese society also has trouble with corruption scandals and political intrigues.

- The Chinese banking and financial sector may experience a much tougher competition climate as foreign banks enter their market. The development in this sector may also give the reader a general idea about how the developments in other industry sectors might become as a consequence of a tougher competition climate. In this particular sector, it might possibly involve bankruptcies, a wave of mergers and restructurings as well as a speeding-up of institutional framework reforms.

**Optimal Portfolio Strategy**

According to our calculations of the correlation coefficients, the World Index and the Hong Kong portfolio follow a similar pattern as they are positively correlated. In comparison, the Shanghai and the Shenzhen portfolios are less correlated and also have a negative correlation with the World Index. This may be due to that the Hong Kong stock market has historically been more integrated globally than the Shanghai and the Shenzhen stock markets.

After constructing the three different portfolios, it is the World/Shanghai portfolio that has the highest expected return. Reaching 23.7%, the return of the portfolio is well above the others. A probable cause might be that less is invested in the World portfolio than in the other two portfolios. However, it also has the highest standard deviation of the three, signifying that it is the riskiest of the portfolios. The World/Hong Kong and World/Shenzhen portfolios have both expected returns and standard deviations that are roughly the same. This is not very surprising, as the composition of the two portfolios is similar with large investments in the World portfolio.

Further, when studying the Sharpe indexes one sees that the World/Shanghai portfolio also has the highest Sharpe index. However, notice the fact that all three compositions have higher Sharpe indexes than does the World portfolio alone. Thus, all of the three presented combinations are more profitable than investing everything in the World portfolio.

Conclusively, our argumentation on optimal portfolio strategy suggests that a less risk-averse investor may want to consider the World/Shanghai portfolio as this has an expected return that is drastically higher than that of the World portfolio but also an expected return that is the highest of the three constructed portfolios. However, if one’s concern is lowering the standard deviation of the World portfolio, the World/Shanghai portfolio should not be of any interest as the standard deviation here is higher than that of the World portfolio alone. Instead, the World/Shenzhen portfolio might better suit the preferences of a more risk-averse investor as this portfolio has a standard deviation that is drastically lower than that of the World portfolio alone. However, one should also be aware of the fact that the expected return is only slightly higher than that of the World portfolio yet higher than that of the World/Hong Kong portfolio.
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Appendix A – Theory of the Efficient Frontier

This section explains how to compose an efficient portfolio and how to calculate the ‘efficient frontier’ with the least complicated example in portfolio and investment theory, which supposes that risk-free lending and borrowing are allowed. By definition, the efficient frontier is the subset of portfolios that will be preferred by all investors who exhibit risk aversion and who prefer more return to less.

First, we want to maximise the objective function:

\[ \theta = \frac{\overline{R_p} - R_F}{SD_p} \].

Where \( \overline{R_p} \) = The average return of the portfolio.

Which is subject to the constraint:

\[ \sum_{i=1}^{N} w_i = 1 \].

Where \( w_i = \) Weight of stock \( i \) in portfolio.

In words, this means that we maximise the efficient set of stocks by finding the portfolio with the greatest excess return (expected return – risk free rate) to standard deviation that satisfies the constraint that the sum of the proportions invested in the assets equals one.

The maximisation appears if we multiply \( R_F \) with 1, which is what we obtained in the previous equation. This will give us:

\[ R_F = 1R_F = ( \sum_{i=1}^{N} w_i )R_F = \sum_{i=1}^{N} w_i R_F . \]

Making the substitution in the objective function, we then calculate the following equation:

\[ \theta = \left[ \frac{\sum_{i=1}^{N} w_i \left( \overline{R_i} - R_F \right)}{\sqrt{\sum_{i=1}^{N} w_i^2 \sigma_i^2 + \sum_{i=1}^{N} \sum_{j=1}^{N} w_i w_j \sigma_{ij}}} \right]^{1/2} . \]

To find the solution to the previous maximisation problem, we need to find the solution to the following system of simultaneous equations:
When maximised, the equation will look like this:

\[ \frac{d\theta}{dw_i} = -(\lambda w_i \sigma_{i} + \lambda w_2 \sigma_{2i} + \lambda w_3 \sigma_{3i} + \cdots + \lambda w_N \sigma_{Ni}) + \bar{R}_i - R_F = 0. \]

Where \( \sigma_{Ni} = \text{Covariance of stocks N and i.} \)

Note that \( \lambda \) is a constant in the equation above, and by further simplifying the equation we obtain the following:

\[ \bar{R}_i - R_F = Z_i \sigma_{i} + Z_2 \sigma_{2i} + Z_3 \sigma_{3i} + \cdots + Z_N \sigma_{Ni}. \]

Here, a new variable has been defined, namely \( Z_k = \lambda w_k \). As \( w_k \) is the fraction to invest in each security and \( Z_k \) is proportional to \( w_k \), \( Z_k \) is the proportional fraction to invest in each security. Furthermore, there is one equation like this for each value of \( i \). The solution to the problem involves solving the following system of simultaneous equations:

\[ \begin{align*}
\bar{R}_1 - R_F &= Z_1 \sigma_{1} + Z_2 \sigma_{21} + Z_3 \sigma_{31} + \cdots + Z_N \sigma_{N1} \\
\bar{R}_2 - R_F &= Z_1 \sigma_{2} + Z_2 \sigma_{22} + Z_3 \sigma_{32} + \cdots + Z_N \sigma_{N2} \\
\bar{R}_3 - R_F &= Z_1 \sigma_{3} + Z_2 \sigma_{23} + Z_3 \sigma_{33} + \cdots + Z_N \sigma_{N3} \\
&\vdots \\
\bar{R}_N - R_F &= Z_1 \sigma_{N} + Z_2 \sigma_{2N} + Z_3 \sigma_{3N} + \cdots + Z_N \sigma_{NN}. 
\end{align*} \]

Lastly, we must compute the exact fraction \( X_k \) that will be invested in the different securities. We can do this by using the following equation:

\[ X_k = \frac{Z_k}{\sum_{i=1}^{N} Z_i}. \]

However, we can also use the calculated \( X_k \) to estimate the return on the portfolio and the variance of the portfolio respectively and we would then obtain the efficient values of both the return and variance.\(^{89}\)

\(^{89}\) Elton & Gruber (1981), Chapter 4.
Appendix B – Example on Calculating the Efficient Frontier

This appendix provides the reader with one of the three calculations of the efficient frontier that have been used for the quantitative section of the analysis. The example below is the first calculation of the portfolio combinations, namely the Hong Kong/World portfolio.

Firstly, we constructed a matrix that showed the return’s changes based on the data from the Hong Kong Stock Exchange and the World Index.

<table>
<thead>
<tr>
<th></th>
<th>Hong Kong</th>
<th>(Hong Kong)$^2$</th>
<th>World</th>
<th>(World)$^2$</th>
<th>(Hong Kong)(World)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>43</td>
<td>1849</td>
<td>17</td>
<td>289</td>
<td>731</td>
</tr>
<tr>
<td>1997</td>
<td>-19</td>
<td>361</td>
<td>15</td>
<td>225</td>
<td>-285</td>
</tr>
<tr>
<td>1998</td>
<td>-18</td>
<td>324</td>
<td>22</td>
<td>484</td>
<td>-396</td>
</tr>
<tr>
<td>1999</td>
<td>64</td>
<td>4096</td>
<td>24</td>
<td>576</td>
<td>1536</td>
</tr>
<tr>
<td>2000</td>
<td>-15</td>
<td>225</td>
<td>-14</td>
<td>196</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>6855</td>
<td>64</td>
<td>1770</td>
<td>1796</td>
</tr>
</tbody>
</table>

Variance and Standard Deviation

Then, we computed the standard deviation of the stock markets using the figures presented in the matrix above and substituted them into the following equation.

\[
S^2 = \frac{1}{n-1} \left( \sum X^2 - \left( \frac{\sum X}{n} \right)^2 \right)
\]

Hong Kong:

\[
S_{HK}^2 = \frac{1}{5-1} \left( 6855 - \left( \frac{55}{5} \right)^2 \right) = 1683.5
\]

\[S_{HK} = 41.0\]

World:

\[
S_{W}^2 = \frac{1}{5-1} \left( 1770 - \left( \frac{64}{5} \right)^2 \right) = 401.5
\]

\[S_{W} = 20.0\]
Correlation Coefficient

Before being able to calculate the efficient frontier, we first needed the correlation coefficient and we calculated it as follows.

\[
r = \frac{\sum X Y - \frac{1}{n} (\sum X)(\sum Y)}{(n-1)S_X S_Y}
\]

\[
r_{HK,w} = \frac{1796 - \frac{1}{5} (55)(64)}{4(11796)(20.0)} = \frac{1092}{3280} = 0.33
\]

Average Return

Lastly, we calculated the average return for both the HKSE and a world portfolio.

\[
\bar{R}_X = \frac{X}{n}
\]

\[
\bar{R}_{HK} = \frac{55}{5} = 11.0
\]

\[
\bar{R}_W = \frac{64}{5} = 12.8
\]

Calculating the Efficient Frontier

With the values we have obtained so far, we could calculate the efficient frontier.

\[
\bar{R}_X - R_F = Z_X \sigma^2_X + Z_Y \sigma_{X,Y}
\]

\[
\bar{R}_Y - R_F = Z_X \sigma_{X,Y} + Z_Y \sigma^2_Y
\]

\[
11.0 - 5.4 = Z_{HK} 1683.5 + Z_{W} (0.33\times41.0\times20.0)
\]

\[
12.8 - 5.4 = Z_{HK} (0.33\times41.0\times20.0) + Z_{W} 401.5
\]

\[
5.6 = 1683.5Z_{HK} + 270.6Z_{W}
\]

\[
-5.0 = -182.4Z_{HK} - 270.6Z_{W}
\]

\[
0.6 = 1501.1Z_{HK}
\]

\[
Z_{HK} = 0.000400
\]

\[
Z_{W} = 0.018108
\]
Constructing an Efficient Portfolio

\[ X = 0.000400 + 0.018108 = 0.018508 \]

Percentage invested on the Hong Kong stock market:

\[ \frac{0.000400}{0.018508} = 0.02 = 2\% \]

Percentage invested on World Stock market:

\[ \frac{0.018108}{0.018508} = 0.98 = 98\% \]

Expected Return on the Portfolio

\[ R_p = \left[ \left( \frac{0.000400}{0.018508} \times 11.0 \right) + \left( \frac{0.018108}{0.018508} \times 12.8 \right) \right] = 12.8 \]

Variance of the Return on the Portfolio

\[ \sigma_p^2 = \left[ \left( \frac{0.000400}{0.018508} \times 1683.5 \right) + \left( \frac{0.018108}{0.018508} \times 401.5 \right) \right] = 429.2 \]
The Chinese Equity Market - An Economic Inquiry into Investment Opportunities and Risks

Jens Stark & Fredrik Wiklund

The final aim of this thesis is to evaluate opportunities and risk factors of investing in China, in terms of pros and cons, and also to elaborate an optimal portfolio strategy. The pros regarding investments in China are (1) the economic liberalisation and reforms of the institutional framework; (2) the Chinese market’s huge potential and the high-growth IT and telecommunications sectors; (3) a favourable macroeconomic climate and an impressive development. The cons are (1) the mismanagement of the state-run companies; (2) the mainland exchanges’ intra-year volatility; (3) the export sector’s performance might decline; (4) the institutional framework is largely responsible for many risk factors; (5) a tougher competition climate after the entry in the WTO. Also, our calculations on an optimal portfolio strategy suggest that less risk-averse investors may want to consider the World/Shanghai portfolio, whereas the World/Shenzhen portfolio might instead suit the preferences of more risk-averse investors.

Investments, equity market, China, emerging markets, portfolio theory.