Abstract

The focus in this chapter is better understanding of the trends and patterns among today's emerging markets. About 80 countries currently have functioning securities exchanges. Based on the emerging stock market data published by the International Finance Corporation (IFC), this chapter analyzes patterns across emerging markets and patterns in the evolution of emerging stock markets over time. Fundamental and technical indicators are used to create self-organizing maps of the new markets in Latin America, Asia, Africa and Eastern Europe. In addition maps are provided that compare individual companies around the globe; maps of banking, telecommunication, and construction companies are included. The strategic importance of using self-organizing maps for investing in emerging markets is explored and the results are compared with those obtained through classical asset allocation strategies.

6.1 Background

According to IFC 80 countries in the world have functioning securities exchanges. Over the past ten years IFC has published an Emerging Stock Market Factbook which includes economic and stock-market data on the leading stock markets of the developing world. The IFC Emerging Stock Market Factbook is derived from the Emerging Market DataBase. Time-series data over ten years exist for about 30 emerging markets (IFC, 1996a, b).

Ten years ago the term “emerging markets” did not exist in the investment literature [6.01]. Today, with a vast array of information and services available on emerging markets, they often remain poorly understood. For example, a recent newspaper article pointed out that in the United States of America there are still investors that consider Hong Kong to be an “emerging market”. Looking back into history, investors tend to forget that at one point in time the United States of America was an emerging market.

The emerging market economies on which IFC has substantial time-series data contain 4.8 billion people or 84% of the world’s population. Of these 4.8 billion people, 2.7 billion live in the rapid growing economies of Latin America, China, India and Indonesia. In comparison, the developing countries contain 900 million
people or 16% of the world’s population. Various individual markets fall into different stages of development. The first generation of emerging markets – Japan, Hong Kong and Singapore – have already become developed industrial societies. Malaysia, Thailand, Indonesia and South Korea are considered the East Asia “Tigers” or new rapidly growing economies. In recent years Pakistan, India and Sri Lanka have joined in this trend and are called the “Young Tigers”. Since the mid 1980s Latin American countries such as Argentina, Brazil, Chile, Mexico, Venezuela, Peru and Columbia have offered attractive investment opportunities. These emerging markets constitute a nonuniform group of countries. In southern Europe, Portugal, Greece and Turkey have opened negotiations with the European Union. In eastern Europe, Poland and Hungary have become emerging markets. The emerging markets constitute a rather highly differentiated group of countries, more so than the developed countries of the world.

At the end of 1996 the total market capitalization of all emerging markets amounted to 1.9 trillion US dollars. This figure represents approximately 12% of the 15.1 trillion US dollars total market capitalization of all world stock markets. In the period 1985–1994 the total capitalization of emerging markets rose by a factor of 11.2. There were 36,179 issues listed on all the world’s exchanges at the end of 1996; some 17,115 companies of these were listed on emerging market's exchanges. This represents 47.3% of the total. Since 1985 the number of issues listed on emerging market's exchanges increased by 50%, mainly because of the large number of privatizations and initial public offerings. Over the same period the capitalization of the developed markets rose by a factor of 2. Some sources project that by the year 2025 the emerging markets’ share of the total world stock market capitalization will rise from 12% to about 43% if the current growth rates of the emerging markets and those of developing countries are maintained.

In this chapter we apply self-organizing maps (SOM) to create two-dimensional maps on emerging stock market data. We provide first a brief overview of the performance of these emerging markets and compare return and risks in classical fashion. Next, we discuss the SOM approach for creating maps of emerging markets. Finally, we show how these maps can be used for asset allocations and decision-support and conclude with the strategic importance of maps for investing in emerging markets.

### 6.2 Performance and Risks of Investing in Emerging Markets

In the period 1989–1995 the IFC Investable Composite Index on Emerging Markets (with dividends reinvested) rose from $100 to $330 (18.5% per year). In contrast the Morgan Stanley Composite Index (MSCI) of all World Stocks rose from $100 to $169 (7.7% per year). The standard deviation of monthly returns of the IFC (Investable) Composite Index in the same period was 5.95%; the standard deviation of the MSCI index was 4.02%. The investment performance and potential of emerging markets rest in large part on their tremendously high growth rates.

The growth of the underlying economies is one of the most important determinants of the growth of the emerging markets and the earnings of companies