

## Research Paper Number 54

### The Determinants of Stock Returns in a Small Open Economy

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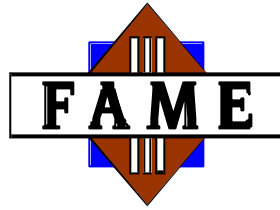
**Cauchie, S., Hoesli, M., Isakov, D. (2004): "The Determinants of Stock Returns in a Small Open Economy". *International Review of Finance and Economics* , Vol. 13/2, pp.167-185.**

#### Abstract:

This paper examines the determinants of stock returns in a small open economy using an APT framework. The analysis is conducted for the Swiss stock market which has the particularity of including a large proportion of firms that are exposed to foreign economic conditions. Both a statistical and a macroeconomic implementation of the model are performed for the period 1986-2002 with monthly returns on industrial sector indices. The results show that the statistically determined factors yield a better representation of the determinants of stock returns than the macroeconomic variables and that stock returns are influenced by both global and local economic conditions. This suggests that the Swiss stock market is an internationally imperfectly integrated market.

#### Executive Summary:

This paper provides an analysis of the determinants of stock returns in a small open economy in an APT framework. The empirical investigation is conducted for the Swiss stock market which has the particularity of including a large proportion of firms that are exposed to economic conditions prevailing outside the country as they sell and purchase their products and services overseas. As it is a developed market with no barriers to international investments, it could be considered as a market that is integrated with the rest of the world.

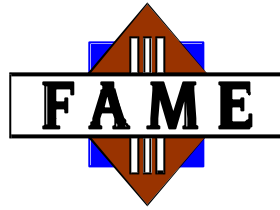


However, this market has been found not to be integrated in previous literature. For this reason, we include both local and global variables in the set of potential macroeconomic explanatory variables. The global variables are aggregates constructed from countries of the G7, the main trade partners of Switzerland.

Two types of implementations of the model are investigated and compared: a statistical one and a macroeconomic one. We use monthly returns on 19 industrial sector portfolios over the period 1986-2002. The statistical implementation of the model yields five factors. The best macroeconomic version includes four variables, two of which are clearly linked to global economic conditions (innovations to G7 industrial production and changes in expected inflation) while two are linked to local factors (Swiss market return and innovations to the term structure). Interestingly, all belong to one of our four broad categories of variables: the general level of economic activity, price levels, credit conditions, and the stock market environment. These results confirm the identity of the relevant factors chosen by Chen et al. (1986) for the U.S. market, but emphasize the importance of international influences on the Swiss market.

The two-pass standard FM tests show that neither the statistical nor the macroeconomic versions displays significant relations between risk and return. However, when positive and negative realizations of the factors are taken into account, the risk-return relationship becomes highly significant for the statistical model, but only weakly for the macroeconomic model. This result clearly shows that the statistically determined factors yield a better representation of the determinants of stock returns than the macroeconomic variables. This is confirmed by formal comparisons of the explanatory power of both types of models. Finally, an analysis of the links existing between risk premia generated by the statistical model and those of the macroeconomic model shows that both types of premia are significantly related. However, the macroeconomic risk premia explain at best 65% of the variance of statistical risk premia, which suggests that other forces are at work. Their precise identification is left for further research.

This paper has important implications for both researchers and practitioners. From a research point of view, this paper stresses the urgent need to develop a theoretical model of asset pricing of partial integration that explicitly defines the level of integration of a market and determines the relevant set of variables to represent the sources of risk. From a practical point of view too, it has several implications. First, it shows that when managing a portfolio that includes Swiss equities, fund managers should not only take into account the sensitivity of stocks to the Swiss market, but also the sensitivities to innovations in the Swiss term structure, G7 industrial production and to changes in expected inflation in the G7. These factors should be borne in mind when devising hedging strategies. Second, when assessing the performance of a portfolio of Swiss stocks, the investors should take into account these additional risk factors. Finally, when selecting upon alternative investment projects, the calculation of the cost of capital for Swiss companies should



consider these factors. Omitting these variables could yield seriously biased results and lead to erroneous investment decisions.