

## **ECONOMICS THESIS PROPOSAL**

Name: Shi Yuan Chen  
General Field: Finance  
Proposal Title: The Adaptive Markets Hypothesis: Profiting from Equity Markets in Asia  
Date: 10/18/07  
Version No. 3  
Advisor: Geoffrey Woglom

### **Question**

How can we use the Adaptive Markets Hypothesis as a framework to analyze the Hong Kong Stock Exchange and a few other Asian stock markets? Are there examples of past persistent (not long-term) profit opportunities specific to the growing Asian markets? What new insights will this approach provide over the Efficient Markets Hypothesis?

### **Area**

Behavioral Finance, Efficient Market Hypothesis

### **Relevance**

The stock market is closely tied to the economy because each stock price determines the viability of a proposed project for that company. If we find that noise trading is actually able to disrupt the efficiency of a business, then it will be able to affect the economy as a whole. The extent of how efficient stock markets are is still a big issue and a very important one.

Despite the popularity of EMH among academic theorists as a way to think about markets, this view has not been adopted by many of those actually participating in the financial markets. In fact, all investors who follow a strategy that requires even a minimal amount of research are likely doing so because they presume that markets are not efficient. There must be a solution to this discrepancy between empirical evidence and theory.

### **Theory**

The field of Behavioral Finance has examined emotional and cognitive biases in an attempt to understand the irrationality of economic agents. Behavioralists have supported their claim that stock markets are not efficient by using technical analysis to find several examples of irrationality and the resulting mispricing. This would naturally lead one to believe that there exist investment opportunities that produce above average returns and that can be found in advance. On the other hand, in a well-publicized paper Malkiel found that after taking survivorship bias and load fees into account, low expense index funds would have been a better investment for most investors than mutual funds, which targets finding new investment opportunities.

Rather than taking a neoclassical approach of attempting to maximize expected utility and assuming rational expectations, AMH has an evolutionary perspective and views agents (investors) simply as dynamic organisms that have adapted through generations of natural

selection and have a goal of maximizing returns. If you consider all markets to fall somewhere on a spectrum of various degrees of efficiency, AMH might be represented as the weakest form of efficiency (non-efficiency), wherein stock prices do not have to reflect the fundamental value of the stock or even some combination of all public and private information. Individuals act in their own self interest, make mistakes, learn, and adapt. In addition, competition drives adaptation and innovation, natural selection shapes market ecology, and evolution determines market dynamics. Under this fundamental framework, the AMH offers an alternative to EMH while taking accounting for the biases found in Behavioral Finance.

### **Methods**

Initially, I will adopt the AMH agent model of the Hong Kong Stock Exchange and run some autocorrelation regressions on the monthly returns of the Hang Seng Index to measure how efficient the market has been in the past twenty years. I will explain (if possible) the reason for any significant sudden changes in the efficiency. I will then apply this approach to a few other stock markets that I have found sufficient data for.

### **Issues**

Procuring 20 years of stock quotes for the Hang Seng Index was not too difficult to do online, but some of the other Asian markets may require more digging or it might force me to generalize my focus to just non-U.S. stock markets. AMH (introduced in 2004) is a relatively new field of economics and has only a couple of working empirical studies and theoretical research articles. Behavioral Finance is more established and has more existing research. I am particularly interested in studying the irrationality of investors, so Behavioral Finance will definitely apply to my research. I plan to make my impression on this infantile field by presenting one of the first few case studies and depending on my findings, possibly expanding on the theory as well.

### **References**

Barberis, N. and R.H. Thaler, "A Survey of Behavioral Finance" (September 2002). Available at SSRN: <http://ssrn.com/abstract=327880> or DOI: 10.2139/ssrn.327880.

Lo, A., "The Adaptive Markets Hypothesis: Market Efficiency from an Evolutionary Perspective." *Journal of Portfolio Management*, Forthcoming Available at SSRN: <http://ssrn.com/abstract=602222>

Lo, A., "Reconciling Efficient Markets with Behavioral Finance: The Adaptive Markets Hypothesis." *Journal of Investment Consulting* 7(2005), 21-44.

Malkiel B., "The Efficient Market Hypothesis and It's Critics." *Journal of Economic Perspectives*, 17 (2003): 59 – 82.

Neely, C.J., P.A. Weller, and J.M. Ulrich, "The Adaptive Markets Hypothesis: Evidence from the Foreign Exchange Market" (March 2007). FRB of St. Louis Working Paper No. 2006-046B Available at SSRN: <http://ssrn.com/abstract=922345>.

### **Faculty Input**

Prof. Woglom introduced me to Behavioral Finance and suggested I read some responses from the EMH side as well. He also suggested I find the historical stock data first, since it would be pretty hard to analyze stock market efficiency without it.