

Chapter 2

Early Warning System for Financial Crises

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ABSTRACT

To maintain financial stability, prevention of financial crisis is very important. This prevention is especially is especially important for developing countries where we need robust instruments for prediction of financial crises. One such instrument is Early Warning System (EWS). An EWS provided signals that could reflect the likelihood of a financial crisis over a given time horizon. Changing nature of financial risks due to liberalization of economies has increased the importance of an effective EWS. This chapter explores the state of the art of EWS. It is suggested that policy makers should take into account their objectives and related thresholds of various while developing an EWS since there exists a sharp trade-off between correctly calling crises and false alarms.

1. INTRODUCTION

The last decade saw a large number of financial crises in emerging market economies (EMEs) with often devastating economic, social and political consequences. These financial crises were in many cases not confined to individual economies but spread contagiously to other markets as well. In particular, the Latin American crisis of 1994-1995 and the Asian crisis of 1997-1998 affected a wide group of countries and had systemic repercussions for the international financial system as a whole. The Asian financial crisis of 90's came as a surprise for many confident about the stability of the global financial system. For many emerging-markets, the

attempts of financial liberalization in absence of an effective and robust regulatory framework put their economies in a risky position. The unexpected shocks from the financial crises exposed the inherent vulnerabilities of the financial systems of these economies. The determination of financial systems resulted in falling value of currencies, devaluation of assets, and quick increase in levels of private debts. It is interesting to note that the financial crises were not limited to economies of developing world. More than a dozen of countries experienced financial crises of varying level of severity. The 2008 financial crisis in USA was the most devastating since the great depression. This crisis resulted in the meltdown of global finan-

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cial system brought a global recession. Despite claims by many that crises are un-forecastable, many major organizations such as International Monetary Fund (IMF) continue to research and suggest measures to avoid if possible or at least alert the formation of financial crisis. Some of these suggested measures for economies include strengthening monetary and financial stability, increased cooperation, and information exchange among economies, and enhancing the transparency and timeliness of data. The experience of previous crises shows us that the incurred costs are very high for emerging economies, as well as for the developed ones. Even if these economies have their own particular characteristics, almost all of them present similarities when exposed to fundamental economic vulnerabilities, as well as to specific mechanisms, which trigger the crises. The most frequent fundamental vulnerabilities are: the credit, the overrating of the price of assets, budget deficits; on the other hand, any significant event may trigger a crisis – political crises, the evolutions on the capital markets or, in the case of the current crisis, the collapse of the American market of “subprime” credits.

Many current projects attempt to build Early Warning System (EWS) models. These models are based on statistical techniques and predict likelihood of a financial crisis over a given time period. Selected economic and financial indicators form the heart of the framework of these models. These indicators likely indicate the vulnerability of an economy at an aggregate level. While the EWS have been primarily developed for emerging markets, efforts are now being undertaken to extend the scope of these models to developed and stronger economies. In putting up significant efforts to build EWS models, IMF has taken a lead. Many influential EWS models, such as Kaminsky et al. (1998) and Berg and Pattillo (1999b) have been developed by IMF. Central banks around the globe are also developing EWS models such as the US Federal Reserve (Kamin et al., 2001; Kamin and Babson, 1999) and the Bundesbank (Schnatz,

1998, 1999). There also exist many EWS models developed by academics and various private sector institutions such as (JP Morgan, 1998; Goldman Sachs, 1998; Deutsche Bank, 2000; Credit Suisse First Boston, 2001; Morgan Stanley Dean Witter, 2001). For policy makers, EWS models are an opportunity to detect underlying economic weaknesses and vulnerabilities in order come up with a pro-active approach to avoid the risks of a financial crisis. However, the modest performance of the EWS models in predicting financial crises remains a huge concern (Berg and Pattillo, 1999). The literature distinguishes three types of financial crises: currency crisis, banking crisis and external debt crisis. However, pure forms of crises do not exist in reality. The objective of this chapter is to explore the EWS for financial crises.

2. FACTORS AND SYMPTOMS OF FINANCIAL CRISIS

The crisis is defined as a significant decrease of economic activity over a time period, reflected in the decrease of the GDP, the decrease of individual income, the reduction of the level of employment, the diminution of industrial production and consumption. The economists analyze the crisis according to specific criteria and perceive it as a phenomenon with unfavorable consequences for institutions, organizations and social groups affected by inflation, unemployment, stagnation, recession, etc. Sociologists argue that crises have their origin in social inequalities, in the decrease of motivation and initiative, in the rebellion against authorities, in the deficiencies manifested at the level of the social control mechanism, in the decline of the family, community, civic and religious heritage. Historians evaluate crises at a global level and explain them through the imbalances which appear between the constitutive elements of societies as a result of the occurrence of social dynamics phenomena: the increase of the military power of some states, the intensification of automation, etc.

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