Available online at www.sciencedirect.com
SCIENCE DIRECT®
Journal of Banking & Finance 28 (2004) 1745–1773
Journal of BANKING & FINANCE
www.elsevier.com/locate/econbase

Structural changes in volatility and stock market development: Evidence for Spain

Juncal Cuñado Eizaguirre [a], Javier Gómez Biscarri [b], Fernando Pérez de Gracia Hidalgo [c,*]

[a] Department of Quantitative Methods, Facultad de Económicas y Empresariales, Universidad de Navarra, 31080 Pamplona, Spain
[b] IESE Business School and Department of Business, Facultad de Económicas y Empresariales, Universidad de Navarra, 31080 Pamplona, Spain
[c] Department of Economics, Universidad de Navarra, Facultad de Económicas y Empresariales, 31080 Pamplona, Spain

Received 10 June 2002; accepted 17 June 2003
Available online 9 January 2004

Abstract

In this paper we review the factors that lead to changes in stock market volatility and use alternative methodologies of endogenous breakpoint detection in order to analyze whether the volatility of the Spanish stock market has changed significantly over the period 1941–2001. This period corresponds to years of profound development of both the financial and the productive sides of the economy in this country. The analysis of the Spanish stock market suggests that volatility has behaved in a different manner over the period 1941–2001: After three decades of low volatility, a structural break in volatility is detected in 1972, coinciding with the opening of the Spanish economy. From 1972 to 2001, the years of more intense financial development, the stock market presents a higher level of volatility and lower persistence. This effect is partly attributable to the increased growth of trading volume brought about by the economic development process.

JEL classification: C32; C59; G10
Keywords: Volatility; Trading volume; Stock market development; Multiple structural breaks

* Corresponding author.
E-mail addresses: jcunado@unav.es (J. Cuñado), jgbiscarri@iese.edu (J.G. Biscarri), fgracia@unav.es (F.P.G. Hidalgo).

0378-4266/$ - see front matter
doi:10.1016/j.jbankfin.2003.06.004

1. Introduction

Financial markets and institutions play a key role in the economy by channeling funds from savers to investors. Volatility in the prices of financial assets becomes a normal part of the process of allocating investable funds among competing uses. However, excessive or extreme volatility of interest rates, exchange rates or stock prices may be detrimental because such volatility may impair the smooth functioning of the financial system and adversely affect economic performance. [1]

Stock market volatility, in particular, could harm the economy through a number of channels. [2] One way that stock price volatility hinders economic performance is through consumer spending (e.g., Campbell, 1996; Starr-McCluer, 1998; Ludvigson and Steindel, 1999; Poterba, 2000). This relates to the wealth effect of the stock market in consumption that became especially worrisome after the drop in stock prices in the first semester of 2000. In addition, the likely subsequent weakening in consumer confidence could contribute to a further reduction in expenditure. Stock price volatility may also affect business investment spending (Zuliu, 1995) and, consequently, economic growth (Levine and Zervos, 1996; Arestis et al., 2001): Investors interpret a raise in stock market volatility as an increase in the risk of equity investment and they shift their funds to less risky assets. This reaction raises the cost of funds for firms and new firms might bear the brunt of this effect as investors gravitate toward the purchase of stock in larger, better known firms. Finally, extremely high volatility could also disrupt the smooth functioning of the financial system and lead to structural or regulatory changes that may be necessary to increase the resiliency of the market in the face of greater volatility.

In this paper we analyze whether the volatility of the Spanish stock market has changed significantly over the period 1941–2001. The choice of this country makes the analysis especially relevant. Our data start in 1941, when Spain was a closed economy with an incipient and underdeveloped stock market. By the end of the sample, in 2001, Spain could be counted among the most developed economies of the world, its capital markets were fully liberalized and it had qualified to become a founding member of the European Monetary Union. Our sample, therefore, covers the years of development of the stock market and of economic and financial opening and integration of the country. The analysis of the possible impact of these events in the behavior of the stock market becomes relevant for our understanding of the functioning of financial markets and for those countries that are now undergoing similar processes, such as the transition countries in Europe.

Our objective is to ascertain *when* significant changes in the structure of Spanish stock market volatility have occurred and to place those changes in the context of the

[1] Becketti and Sellon (1989) analyze the economic impact of financial market volatility. Walsh (1984) or Ferderer (1993) analyze similar issues for interest rate volatility while Goldberg (1993), Glick (1998), Campa and Goldberg (1999) and, more recently, Baum et al. (2001) focus on exchange rate volatility.

[2] Campbell et al. (2001) and Schwert (2002) are among the most recent papers focused on the behavior and evolution of volatility in the stock market.