

Volatility clustering and the bid–ask spread: Exchange rate behavior in early Renaissance Florence

G. Geoffrey Booth ^{a,*}, Umit G. Gurun ^b

^a *Eli Broad Graduate School of Management, 315 Eppley Center, Michigan State University, East Lansing, MI 48823, United States*

^b *School of Management, University of Texas at Dallas, United States*

Received 13 February 2003; accepted 15 September 2006

Available online 23 May 2007

Abstract

This paper investigates the nature and behavior of the domestic (local) currency market that existed in Florence (Italy) during the late 14th and early 15th centuries (a.k.a. the Early Renaissance). We find that the extant volatility and microstructure models developed for modern asset markets are able to describe the statistical volatility properties observed for the denaro-florin exchange rate. Volatility is clustered and is related to the bid–ask spread. This supports the notion that, although there are huge social, industrial and technological differences between capitalism then and now, individuals trading financial assets in an organized venue behave in a similar manner.

© 2007 Elsevier B.V. All rights reserved.

JEL classification: G10; N23; P12

Keywords: Volatility clustering; Bid–ask spread; Exchange rate; Renaissance

1. Introduction

Over 40 years ago Mandelbrot (1963) commented that price of assets commonly traded on financial markets are often characterized by large changes following each other without regard to whether these changes are positive or negative. Since his observation, this phenomenon, now dubbed volatility clustering, has been empirically documented numerous times for a variety of assets including commodities, equities and currencies.

Although the presence of volatility clustering has been well established, its linkage to trading costs via the bid–ask spread has not been as extensively explored. Several market microstructure models (e.g., Admati and Pfleiderer, 1988; Easley et al., 1997; Kelly and Steigerwald, 2004), however, offer plausible interpretations. These models assume asymmetric information and are concerned with how prices incorporate information using some type of trading scheme. All of the models are predicated on today's financial infrastructure and are devised by economists trained in today's generally accepted paradigm, which is based on the 18th century notion of human rationality.

* Corresponding author. Tel.: +1 517 353 1745; fax: +1 517 432 1080.

E-mail address: boothg@msu.edu (G.G. Booth).

Do these explanations only pertain to modern times or do they hold true for capitalistic financial markets in general? The purpose of this paper is to answer this question. Our approach is to look to northern Italy in the 14th and 15th centuries, where and when modern capitalism and financial markets were in their infancy.¹ These Italians were sophisticated merchants and bankers who created large companies for their time, each having an extensive network of foreign branches that facilitated commerce throughout Europe as well as the Levant and the Maghreb.² Communication within the company networks was typically accomplished by written correspondence, and most large companies had their own couriers.³ In this environment, foreign and domestic currency exchange markets flourished. How were these currency markets organized? Are they institutionally similar to today's financial markets? If so, do today's extant models describe the economic workings of these markets? In particular, what was the nature of the exchange rate volatility and, more precisely, did these markets exhibit volatility clustering and was this volatility associated with the cost of trading?

We investigate these questions by examining the domestic currency market that existed in Florence during the Early Renaissance, which, along with Genoa and Venice, was considered a major northern Italian trading center. The purpose of this market was to facilitate the exchange of two monies (one gold and the other containing silver and base metals) minted by the Florentine government. This bimetallic system was unique to Florence and Venice, and the relative value of the gold and silver-content coins fluctuated on a daily basis. We find evidence that volatility clustering in exchange rate changes exists and, as [Bollerslev and Melvin \(1994\)](#) predict, is positively related to the bid–ask spread. This finding is consistent, for example, with [Admati and Pfleiderer \(1988\)](#) who suggest that the clustering of noise trading leads to the clustering of informed trading. The latter, in turn, leads to the widening of the bid–ask spread by the dealers to compensate for the increase in informed trading.

We divide the remainder of this paper into four sections. The immediately following section provides a description of the Florentine domestic currency market. This includes an overview of the city-state's monetary system as well as the way its exchange market was organized and where it was located. We present and discuss the data in Section 3. The Section 4 reports the relevant empirical analyses and results, and Section 5 offers the concluding remarks.

2. An early Renaissance economy

2.1. The Florentine Environment

Around the turn of the 15th century, the City of Florence boasted a population in the neighborhood of 50,000 and its territory, which included towns under its rule, was home to slightly more than 600,000 individuals. [de Roover \(1963\)](#), among others, speculates that Florence was Europe's leading banking center, with the Medici Bank (1397–1494) being one of the most prominent banking institutions. In addition, being the birthplace and home of Donatello (1386–1466), Leonardo da Vinci (1452–1519), Michelangelo (1475–1564), among others of valued artistic stature, the city arguably was the cultural center of the western world, an achievement largely due to the economic success of the Florentine business families and their willingness to be patrons of the arts as well as protectors and guiders of the interests of the Roman Catholic Church. [Veseth \(1990, p. 20\)](#) argues that even among northern Italians the Florentine people were considered to be worldly and creative. He asserts that they were motivated by individual self-interest and "... provide[d]

¹ Earlier examples of capitalistic behavior exist. For instance, [Hallo and Simpson \(1971, p. 89\)](#) report that some residents of Ur in the early Old Babylonian period (2000–1900 BC) not only profited from trading but also from domestic lending, and [Van De Mierop \(1992\)](#) indicates that there was a market for promissory notes denominated in silver during the same period. Nevertheless, it was under the Italian hegemony that the foundations for modern business were laid. In this environment important innovations such as double-entry bookkeeping, codified mercantile law, and the partnership organization emerged. Formal education in commercial mathematics was provided in "reckoning" schools. The focus was on arithmetic and its applications to practical business problems. Probability was not covered because it was not formally "discovered" until the middle of the 17th century. According to [Swetz \(1987\)](#), in the middle of the 14th century Florence boasted 13 schools, an institution that [Poitras \(2000\)](#) suggests is the precursor to the modern university business school. Taking even a broader view, [Brucker \(1958\)](#) provides evidence that Renaissance Italy may well have been the birthplace of the modern world.

² The Levant is a region now containing Syria, Lebanon, Jordan, Palestine, Israel and parts of Turkey and Iraq. Modern day Morocco, Algeria and Tunisia define the Maghreb.

³ [Origo \(1957, p. 99\)](#), in a chronicle of the life of Datini (1335 – 1410), a Medieval merchant banker, reports that it was not uncommon for messages to be sent twice a day from Florence to the fairs in Champagne region. These fairs brought together merchants from northern Italy and those from European cities located north of the Alps.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات