



# Identifying informed traders in futures markets<sup>☆</sup>

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## Abstract

We use daily positions of futures market participants to identify informed traders. These data contain 8,921 unique traders. We identify between 94 and 230 traders as overnight informed and 91 as intraday informed with little overlap. Floor brokers/traders are over-represented in the overnight informed group. The intraday informed group is dominated by managed money traders/hedge funds and swap dealers, with commercial hedgers under-represented. We find that characteristics such as experience, position size, trading activity, and type of positions held offer significant predictive power for who is informed. An analysis of daily trader profits confirms that we select highly profitable traders.

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## 1. Introduction

Informed traders are an essential feature of market microstructure models, but there is little research that establishes who is an informed trader.<sup>2</sup> Most researchers detect the presence of informed traders from price responses to order flow. Because permanent price responses signal informed trades, consistent profits gained from positions or trading activity provide an indicator of who is informed. However, data limitations make trader identities unavailable to most previous studies so the characteristics and profits of the informed are generally unknown.<sup>3</sup>

In this paper, we identify informed traders, those whose actions show they hold valuable short-term price information. Our methods separate these traders from thousands of other participants whose profits (if any) arose due to luck in the sampling process. From the subset we identify as informed, we use inverse regression techniques to analyze their characteristics and to examine how their net trading and end-of-day positions set them apart from other participants. This approach complements that of Menkhoff and Schmeling (2010), who relate price impacts from trades in the dollar/rouble FX market to trader and market characteristics such as order size, timing, total volume, and origin.<sup>4</sup>

We examine data on trader positions from 2000 to mid-2009 for 12 futures markets. We find that traders who hold information about intraday price changes are not the same as those who hold information about the next day's price—the overnight informed. Depending on the test and reference price, we identify from 94 to 230 traders as overnight informed and 91 traders as intraday informed out of 8,921 unique traders. These two types of informed traders are analogous to the *ex ante* and *ex post* notion of informed trading.<sup>5</sup> The *ex ante* informed are those who *possess* a precise signal about future returns, such as found when insiders trade in advance of a corporate announcement. The *ex post* informed are those who *process* order flow information into accurate predictions of future returns

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<sup>2</sup>Research based on insider trading cases can identify informed traders (e.g., Meulbroek, 1992; Cornell and Sirri, 1992; Fishe and Robe, 2004), but none of these cases address futures markets. Other researchers have examined whether groups are differentially informed, such as institutional traders (Chakravarty, 2001) or floor brokers (Anand and Subrahmanyam, 2008), but have not isolated which participants in these groups cause their results. An exception is Keim and Madhavan (1995) who analyze motives for trading by 21 institutions in which they have all order flow data.

<sup>3</sup>An extensive literature documents the presence of informed traders. This includes trade indicator models (e.g., Glosten and Harris, 1988; Haug and Stoll, 1997), variance decomposition models (e.g., George, Kaul, and Nimalendran, 1991), vector autoregression models (e.g., Hasbrouck, 1988; Menkhoff and Schmeling, 2010), structural likelihood models (e.g., Easley, Kiefer, O'Hara, and Paperman, 1996), as well as general aggregate models and special cases (e.g., Evans and Lyons, 2002; Ito, Lyons, and Melvin, 1998).

<sup>4</sup>Our results also complement studies that focus on investor characteristics, particularly those that analyze retail brokerage records and mutual fund returns. Odean (1999) and Barber and Odean (2000) find that retail investors tend to lose money trading equities, which suggests that they lack information as a group. Grinblatt, Keloharju and Linnainmaa (2011) find that high-IQ investors in Finland outperform low-IQ investors in stock-picking ability. Nicolosi, Peng and Zhu (2009) find that individual investors learn from past trading to become better investors. Several researchers find that mutual fund managers do not offer a positive alpha (e.g., Wermers, 2000; Fama and French, 2010). However, recent work shows that some managers exhibit significant information processing or forecasting ability (e.g., Chen, Jegadeesh, and Wermers, 2000; Kosowski, Timmermann, Wermers, and White, 2006; Barras, Scaillet, and Wermers, 2010).

<sup>5</sup>Examples of research on *ex ante* informed trading include Kim and Verrecchia (1991), Easley, Kiefer, O'Hara, and Paperman (1996), Fishe and Robe (2004) and Pasquariello and Vega (2007). Examples of research based on *ex post* processing of information include Harris and Raviv (1993), Kandel and Pearson (1995), Kim and Verrecchia (1997), Green (2004) and Love and Payne (2008).

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