Course: The New Micro Approach to Exchange Rates

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This fifteen-hour course summarizes a new, micro-finance approach to exchange rates. Historically, the fields of exchange-rate economics and microstructure finance have progressed independently. We will address the growing interaction between them and the resulting approach that has emerged. The target audience is macro and financial economists who are interested in exchange rate behavior over longer horizons (e.g., one month and longer, not intraday). Because the training of most people who work in this area does not include microstructure finance, the course is designed to ensure accessibility. For example, a central focus of the course is how trading aggregates dispersed information that is relevant to exchange rates; accordingly, the necessary information economics will be presented in detail.

The course treats both theory/methods and empirics/applications, and in the process highlights their interplay. An appealing feature of the approach is its empirically driven nature: the advent of electronic trading has made transaction data available over longer horizons, which permits analysis of traditionally macro questions (such as the disconnect between macro variables and exchange rates, the price impact of sterilized intervention, and whether participants use different exchange-rate models).

The new micro approach is quite successful, as we shall see: it can account for most of the variation in major exchange rates. Its power lies in its framework for looking beyond the obvious fact that every transaction involves a buyer and a seller. Identifying the information content of trades generates new insights and many directions for future research.

Session 1 (Monday): Introduction to the New Micro Approach

- Brief history of traditional approaches
- Order flow defined
- Spanning the Micro-Macro Divide

Session 2 (Tuesday): The Field of Microstructure Finance

- Microstructure theory: information and inventory models
- Microstructure empirical frameworks
- Modeling FX market features

Session 3 (Wednesday): Order Flow Information and Causality

- Empirical modeling and causality
- Dispersed information in FX markets
- Empirical evidence that FX order flow is informative
- Order flow and macro news

Session 4 (Thursday): Underlying Demand from FX Customers

- Where order flow comes from: FX customers
- Disaggregating flow to reveal underlying information structure
- Case: Order Flow From Currency Futures

Session 5 (Friday): Policy Implications and Next Frontiers

- Central bank intervention
- Transaction taxes
- The lines of future research

List of Readings

Readings for the course come from two sources: a text and a packet of supplemental readings. All students should purchase the text:

The Microstructure Approach to Exchange Rates, by Richard K. Lyons, MIT Press: Cambridge, MA, 2001 (available at amazon.com).

The packet of supplemental readings contains 11 articles in the following order:

(1) Evans, M., and R. Lyons, 2002, Order flow and exchange rate dynamics, *Journal of Political Economy*, 110: 170-180.
(2) Glosten, L. and P. Milgrom, 1985. Bid, ask, and transaction prices in a specialist market with heterogeneously informed agents. *Journal of Financial Economics* 14, 71-100.
(3) Madhavan, A., 2000, Market microstructure: A survey, *Journal of Financial Markets*, 3: 205-258.
(4) Cheung, Y., and M. Chinn, 2001, Currency traders and exchange rate dynamics: A survey of the U.S. market, *Journal of International Money and Finance*, 20: 439-471.
(5) Payne, R. 1999, Informed trade in spot foreign exchange markets: An empirical investigation, typescript, London School of Economics, January.
(6) Froot, K., and T. Ramadorai, 2001, Currency returns, institutional investor flows, and exchange-rate fundamentals, typescript, Harvard Business School, November.
(7) Hau, H., and H. Rey, 2002, Order flows, exchange rates, and asset prices, typescript, Princeton University, July.
(8) Cai, J., Y. Cheung, R. Lee, and M. Melvin, 2001, Once in a generation yen volatility in 1998: Fundamentals, intervention, or order flow? *Journal of Int. Money and Finance*, 20: 327-347.
(9) Dominguez, K., 1999, The market microstructure of central bank intervention, NBER Working Paper 7337, September.
(10) Evans, M., and R. Lyons, 2002b, Time-varying liquidity in foreign exchange, *Journal of Monetary Economics*, forthcoming.
(11) Osler, C., 2001, Currency orders and exchange-rate dynamics: An explanation for the predictive success of technical analysis, *Journal of Finance*, forthcoming.

Course Outline and Reading

<u>Session 1 (Monday): Introduction to the New Micro Approach</u>

Lyons, R., 2001, *The Microstructure Approach to Exchange Rates*, chapters 1 and 6, MIT Press: Cambridge, MA, published December 2001 (henceforth, **<u>MAER</u>**).

Evans, M., and R. Lyons, 2002, Order flow and exchange rate dynamics, *Journal of Political Economy*, 110: 170-180.

<u>Session 2 (Tuesday): The Field of Microstructure Finance</u>

MAER chapters 4 and 5.

Glosten, L. and P. Milgrom, 1985. Bid, ask, and transaction prices in a specialist market with heterogeneously informed agents. *Journal of Financial Economics* 14, 71-100.

Madhavan, A., 2000, Market microstructure: A survey, *Journal of Financial Markets*, 3: 205-258.

<u>Session 3 (Wednesday): Order Flow Information and Causality</u>

MAER chapters 2 and 7.

Cheung, Y., and M. Chinn, 2001, Currency traders and exchange rate dynamics: A survey of the U.S. market, *Journal of International Money and Finance*, 20: 439-471.

Payne, R. 2002, Informed trade in spot foreign exchange markets: An empirical investigation, typescript, London School of Economics, August.

<u>Session 4 (Thursday): Underlying Demand from FX Customers</u>

Case: Order Flow from Currency Futures

MAER chapter 9.

Froot, K., and T. Ramadorai, 2001, Currency returns, institutional investor flows, and exchange-rate fundamentals, typescript, Harvard Business School, November.

Hau, H., and H. Rey, 2002, Order flows, exchange rates, and asset prices, typescript, Princeton University, July.

Cai, J., Y. Cheung, R. Lee, and M. Melvin, 2001, Once in a generation yen volatility in 1998: Fundamentals, intervention, or order flow? *Journal of International Money and Finance*, 20: 327-347.

<u>Session 5 (Friday): Policy Implications and Next Frontiers</u>

MAER chapter 3 (pages 55-62), 8 and 10.

Dominguez, K., 1999, The market microstructure of central bank intervention, NBER Working Paper 7337, September.

Evans, M., and R. Lyons, 2002, Time-varying liquidity in foreign exchange, *Journal of Monetary Economics*, forthcoming.

Osler, C., 2001, Currency orders and exchange-rate dynamics: An explanation for the predictive success of technical analysis, *Journal of Finance*, forthcoming.