

# Fernando Duarte

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CONTACT INFORMATION Federal Reserve Bank of New York  
Research and Statistics Group  
33 Liberty Street  
New York, NY 10045  
Tel: (+1) 212-720-5968  
Fax: (+1) 212-720-1582  
fernando.duarte@ny.frb.org  
<http://nyfedeconomists.org/duarte>

EDUCATION **Massachusetts Institute of Technology**, Cambridge MA  
*Ph.D. in Economics* **2011**

**Massachusetts Institute of Technology**, Cambridge MA  
*Bachelor of Science in Mathematics* **2005**

PROFESSIONAL EXPERIENCE **Federal Reserve Bank of New York**, NY  
*Economist (Capital Markets Function)* **August 2011 – present**

## RESEARCH “Inflation Risk and the Cross-Section of Stock Returns”

*Abstract:* I establish that inflation risk is priced in the cross-section of stock returns: stocks that have low returns during inflationary times command a risk premium. I estimate a market price of inflation risk that is comparable in magnitude to the price of risk for the aggregate market. Inflation is therefore a key determinant of risk in the cross-section of stocks. The inflation premium cannot be explained either by the Fama-French factors or by industry effects. Instead, I argue the premium arises because high inflation lowers expectations of future real consumption growth. To formalize and test this hypothesis, I develop a consumption-based general equilibrium model. The model generates a price of inflation risk consistent with my empirical estimates, while simultaneously matching the joint dynamics of consumption and inflation, the aggregate equity premium, and the level and slope of the yield curve. My model suggests that the costs of inflation are significant: a representative agent would be willing to give up 1.5% of lifetime consumption to eliminate all inflation risk.

## “Investment and Stock Market Volatility” (with Leonid Kogan and Dimitry Livdan)

*Abstract:* We study the relation between returns on the aggregate stock market and aggregate real investment. While it is well known that, controlling for productivity, the aggregate investment rate is negatively related to subsequent excess stock market returns, we find that it is positively related to future stock market volatility. Thus, conditionally on past aggregate investment, the mean-variance tradeoff in aggregate stock returns is negative. We interpret this puzzling pattern within a general equilibrium production economy. In our model, investment is determined endogenously in response to two types of shocks: shocks to productivity, and shocks to aggregate risk aversion that affect the cost of capital. Investment is positively related to productivity and negatively related to the cost of capital. Controlling for productivity, high-investment periods tend to correspond to low cost of capital, giving rise to a negative relation between aggregate investment and expected excess stock market returns. When cost of capital is low, and thus close to the growth rates of cash flows, stock prices are relatively sensitive to changes in discount rates and stock returns become relatively volatile, giving rise to a positive relation between investment and future stock market volatility. Consequently, our results indicate that the time-varying price of aggregate risk is an important determinant of aggregate investment dynamics.

## “A Shifting Forward-Premium Puzzle” (with Ricardo Caballero)

*Abstract:* One of the most stubborn findings in international finance is the so called forward-premium puzzle: contrary to the implication of the uncovered interest parity condition, high yielding currencies tend to appreciate rather than depreciate. Consequently, investing in high yielding currencies while borrowing in low yielding currencies has been a source of significant excess returns in the past. However, it is also well known that this trading strategy has a large exposure to tail-risk, much of which is the endogenous outcome of speculators’ coordinated unwinding of large levered carry trade positions. Thus, the frontline has now shifted, as professional carry traders spend their research time designing strategies that anticipate turning points. While specifics differ, most of the strategies are indexed to VIX-like variables: Carries are aggressive when aggregate implied volatility is low, and covered when high, making the carry trade the ultimate risk-on risk-off strategy. In this paper, we provide an equilibrium model to study the endogenously determined joint dynamics of the exchange rate, the carry trade and aggregate volatility. The exchange rate is a non-linear function of volatility, reacting violently in the critical region where traders unwind their positions en-masse. We show

that as a result of the evolution of the carry-trade strategy, the excess return has shifted from the naive-carry trade to a more sophisticated form involving conditioning to volatility.

TEACHING

**Massachusetts Institute of Technology**

*Lecturer, International Economics*

(undergraduate, course 14.54)

**2008**

*Teaching assistant, Advanced Financial Economics*

(Prof. Leonid Kogan, graduate course 15.440J)

**2009 – 2010**

*Head teaching assistant, Principles of Macroeconomics*

(Profs. P. Willen, F. Giavazzi and V. Guerrieri, undergraduate course 14.02)

**2008 – 2009**

*Teaching assistant, Differential Equations with Theory*

(Prof. Mihalis Dafermos, undergraduate course 18.034)

**2003**

FELLOWSHIPS,  
GRANTS,  
AWARDS

MIT Hennessy Scholar

**2004-2007**

MIT Graduate Fellowship

**2006-2007**

Second Place, MIT Undergraduate Journal of Economics

**2005**

3rd place, MERCOSUR Mathematical Olympiad

**1998**

Top 1% in Argentinean Mathematical Olympiad

**1995-1997**

*Last update: November 1, 2011*