

FRE 501 Lab Module 2013 – Lab Review (Nov 26th 2013)

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Instead of a last lecture I felt we should have a small party instead to celebrate the end of the term, and hence I'm providing you with a written review of what we've learned together over the past 3 months in 501 Lab. Let's start with a review of the original course lecture and lab objectives:

501 Course Description:

This course begins with an intensive two week module on analyzing large data sets using spreadsheet, database and mapping programs. The remainder of the course focuses on the economics of agricultural commodity prices, including the economic determinants of commodity pricing relationships over space, time and form, within linked horizontal and vertical markets, and when prices are established using competitive bidding. Using Microsoft Excel, students will learn to build and analyze structural models of commodity markets. In the lab component of this course, students will trade in a simulated futures market and maintain an active blog to gain additional insight about commodity price determination.

Learning Objectives for Futures Trading Game

- Understand commodity futures – their role and how they function
 - Commercial users vs. Speculators
 - Price discovery and systemic risk management (Novation, Margining)
- Gain an appreciation of the factors that drive commodity prices, and learning how to filter and weight information ('old and priced in' vs. 'new and relevant')
- Be able to formulate trading and hedging strategies, and communicate those ideas effectively
- Be able to identify, evaluate, and articulate the risks associated with trading commodity futures, and understanding how to manage these risks

And the condensed military style mission statement

Understand how commodity futures markets work,
Formulate and refine trading and hedging strategies,
Learn and practice risk management,
In preparation for future professional roles

In the first two weeks of 501, you were exposed to the computational capabilities of Excel with VBA, and the mapping capabilities of ArcGIS. It is impossible to become an expert in two weeks, but you were shown enough to self-teach and self-learn.

In the 1st month of the lab, we discussed the origins and basics of futures contracts, how they differ from other types of securities and why they are important to commodity markets. We learned about different participants and their roles (this was more explicitly covered in the lectures). We explored how this understanding was important to your career, whether in government, corporate or non-profit NGOs. We learned about basic commodity relationships, and about the primary N. American crops. We discussed information flows and the expectations embedded in prices. We discussed the USD 'carry trade', commodity bubbles, the end of the current commodity super-cycle and about the difference between investing and speculating. We also experienced the U.S. government tantrums.

In the 2nd month, the trading game was well underway and most of the learning was through hands-on trading in the simulated futures game, which lasted for 6 weeks. Most of you had the chance to go both long and short, put on small and large trades, trade different calendar months and trade more than one commodity (including corn, wheat, soybeans, soybean oil, sugar, cattle, coffee). You heard some perspectives from Anand, a futures trader in Chicago, about his firm's role as a non-physical trading market-maker / liquidity-provider in the market, and their non-directional strategy. You also had the chance to hear from Desmond, a former execution trader at Lehman and UBS, about the banks' roles as financial intermediaries for their clients to access the markets, and morally 'grey' practices. Andrew Pangilinan gave you some good exposure to technical analysis, which some of you used very successfully in the trading game. After being bombarded with a ton of information, you had the chance to apply different strategies to figure out what works for you. Through your blogging about your experiences, you archived your learning and more importantly, you taught each other about different strategies, commodities, and for some – the rich rewards of futures trading. For others – you learned about the futility of trying – itself a valuable experience!

In the 3rd month, in conclusion to the trading game, we revisited the concept of risk and reward and the importance of risk-adjusted returns. This important concept was again revisited in Jim's 515 lecture covering CAPM theory. We also selected two teams to compete in the 2014 CME trading challenge, with the goal of securing top 4 in the competition, and if not, at least certainly top in Western Canada. Unfortunately, the teams will have to throw away what they learned about maximizing risk-adjusted returns, and instead take on as much risk as possible. This is a classic case of moral hazard – when there is no downside we want to swing big. We also discussed real-life applications of the 3 broad model types covered in class: prices over space, time and form, with an appreciation of the differences between simple and complex models. We heard from Bee about the complicated blending of Lipton Tea, and from Brendan about the incredible supply chains involved in bringing grain out from the prairies to the coasts for export. We discussed palm oil and plantation economics - specifically the economic and hedging differences (compared to annuals) with such long-lived multi-year crops. Unfortunately we missed out on hearing from Alejandro about coffee and from Tekuni about Palm oil in Ghana. We discussed the global acreage situation for veg oils and brought in the FRE 540 concept of understanding root causes – to reflect on why policies (such as biofuel) need to be better thought-out.

In summary, you have been given a broad range of exposure to both theoretical and practical aspects of commodity pricing and futures markets. You now have some qualitative and quantitative frameworks in your head to be able to figure out and answer challenging questions that you might face in your career, whether trying to structure the best and most sensible trading/hedging solutions for a corporate, or figuring out for a policy-maker what the likely policy impacts on prices are.

As a parting remark, I highly recommend this book which I just read: "Forecast: What Physics, Meteorology and the Natural Sciences can teach us about Economics" by Mark Buchanan. The book talks about the failure of the field of Economics, how it has been very slow to catch up with the scientific fields, and still obsesses and relies heavily on false 'equilibriums', when the world around us is instead filled with 'disequilibrium' and rich dynamics – fluid and wind dynamics, ecosystems, earthquakes.