Advanced Workshop
For Central Bankers
September 2-9, 2014

Markus Brunnermeier
Lawrence Christiano
Martin Eichenbaum
Charles Evans
Mark Gertler
Anil Kashyap
Sergio Rebelo
Thomas Sargent
Robert Shimer
James Stock
This week-long workshop for central bank economists has two objectives. First, to expose participants to frontier models and techniques in monetary economics. Second, to foster discussion and exchange of ideas about applied monetary policy problems faced by different central banks.

The week is organized around lectures and computer-based assignments.

The workshop has been held annually since 2004. It has been attended, so far, by roughly 400 participants from 41 central bank institutions.

Participating Institutions

Central banks of: Armenia, Australia, Austria, Bangladesh, Brazil, Belgium, Canada, Colombia, Costa Rica, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, India, Italy, Israel, Japan, Korea, Malaysia, Mexico, Netherlands, Norway, Philippines, Poland, Slovakia, Spain, South Africa, Sweden, Switzerland, and Uruguay.

Federal Reserve Banks: Atlanta, Boston, Cleveland, and Dallas, European Central Bank, the Bank of International Settlements, the Inter-American Development Bank, and the International Monetary Fund.
Course lectures
The workshop includes seven three-hour lectures on the following topics.

Empirical methods in monetary economics,
Martin Eichenbaum (Northwestern University)
Alternative techniques to estimate and empirically evaluate models of the monetary transmission mechanism: (i) structural VARs identified with short run restrictions, long run restrictions, and sign restrictions; (ii) fitting dynamic models to impulse response functions; (iii) maximum likelihood methods.

Specification, estimation, and analysis of monetary models,
Lawrence Christiano (Northwestern University)
Structural monetary models: the role of different frictions, such as sticky wages, sticky prices, working capital, and credit market imperfections. The use of Bayesian and other methods to estimate models and a review of recent developments in the use of models in the monetary policy process.

Open economy models,
Sergio Rebelo (Northwestern University)
Parity conditions in dynamic open economy models. Empirical evidence on sources of real exchange rate (RER) fluctuations. Modeling RER fluctuations. An empirical analysis of the failure of uncovered interest parity (UIP). Modeling deviations from UIP.

Macroeconomic forecasting,
James Stock (Harvard University)
A comprehensive review of forecasting methods. Topics include VARs, dynamic factor models, robust Bayes inference, nowcasting, and long-run forecast uncertainty.

Macro-prudential regulation,
Anil Kashyap (University of Chicago)
An introduction to the principles underlying macroprudential regulation and an analysis of how macroprudential considerations alter the use of regulatory tools and the design of financial regulation.
Special-topic lectures
There are six additional lectures on the following topics

Lecture 1: Monetary policy in a world with financial frictions,
Markus Brunnermeier (Princeton)
Lecture 2: Outlook for U.S. monetary policy,
Charles Evans (Federal Reserve Bank of Chicago)
Lecture 3: Forward guidance and monetary policy,
Mark Gertler (New York University)
Lecture 4: Modeling inflation,
Thomas Sargent (New York University)
Lecture 5: Modeling the labor market,
Robert Shimer (University of Chicago)

Practicum
The course lectures are complemented with afternoon sessions designed to provide participants with hands-on experience with the techniques presented.

Logistics
The workshop takes place at the James L. Allen Center, the home of Kellogg’s Executive Education Programs. The Center is located on the shores of Lake Michigan at Northwestern University’s Evanston campus.
Dates
The workshop will take place between Tuesday, September 2 and Tuesday, September 9, 2014. Participants are expected to arrive on Tuesday, September 2 and leave in the afternoon of Tuesday, September 9, 2014. Participants who are interested in attending the Optional Review Session on Tuesday, September 2, 2014 are expected to arrive on Monday, September 1, 2014. This optional session is devoted to a comprehensive tutorial on what you need to know about Matlab to be able to use the software employed in the course.

Schedule
A preliminary workshop schedule is attached.

Software and lecture materials
At the end of the workshop, participants receive all the lecture materials and programs used during the practicum sessions.

Price
The cost of the program is $6,800 per participant. The fee (payable in U.S. dollars) includes tuition, course materials, accommodations, social program, meals, coffee breaks, and receptions. Enrollment is confirmed only upon receipt of full payment.

Cancellations made before June 1st, 2014 are subject to a 25% fee.
Cancellations made after June 1st, 2014 are subject to the total charge.
<table>
<thead>
<tr>
<th>Time</th>
<th>02/Sep Tuesday</th>
<th>03/Sep Wednesday</th>
<th>04/Sep Thursday</th>
<th>05/Sep Friday</th>
<th>06/Sep Saturday</th>
<th>07/Sep Sunday</th>
<th>08/Sep Monday</th>
<th>09/Sep Tuesday</th>
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<tbody>
<tr>
<td>7:30 AM to 9:00 AM</td>
<td>Breakfast, Allen Center</td>
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<td>9:00 AM to 10:30 AM</td>
<td><strong>Using VARs</strong>&lt;br&gt;Martin Eichenbaum</td>
<td><strong>DSGE models</strong>&lt;br&gt;Lawrence Christiano</td>
<td><strong>Model estimation</strong>&lt;br&gt;Lawrence Christiano</td>
<td><strong>Financial frictions</strong>&lt;br&gt;Lawrence Christiano</td>
<td><strong>Open-economy models</strong>&lt;br&gt;Sergio Rebelo</td>
<td><strong>Forecasting</strong>&lt;br&gt;James Stock</td>
<td><strong>Macro-prudential regulation</strong>&lt;br&gt;Anil Kashyap</td>
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<td>10:30 AM to 10:45 AM</td>
<td>Coffee Break</td>
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<td>10:45 AM to 12:15 PM</td>
<td><strong>Using VARs</strong>&lt;br&gt;Martin Eichenbaum</td>
<td><strong>DSGE models</strong>&lt;br&gt;Lawrence Christiano</td>
<td><strong>Model estimation</strong>&lt;br&gt;Lawrence Christiano</td>
<td><strong>Financial frictions</strong>&lt;br&gt;Lawrence Christiano</td>
<td><strong>Open-economy models</strong>&lt;br&gt;Sergio Rebelo</td>
<td><strong>Forecasting</strong>&lt;br&gt;James Stock</td>
<td><strong>Macro-prudential regulation</strong>&lt;br&gt;Anil Kashyap</td>
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<td>12:15 PM to 1:30 PM</td>
<td>Lunch</td>
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<td>1:30 PM to 4:00 PM</td>
<td>Optional Matlab Review Session</td>
<td>Practicum Session</td>
<td>Practicum Session</td>
<td>Chicago Architectural River Cruise (starts at 3:30 pm)</td>
<td>Practicum Session</td>
<td>Modeling inflation&lt;br&gt;Thomas Sargent</td>
<td>Practicum Session</td>
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<td>4:00 PM to 4:15 PM</td>
<td>Coffee Break</td>
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<td>4:15 PM to 5:30 PM</td>
<td>Cocktails</td>
<td>Outlook for U.S. monetary policy&lt;br&gt;Charles Evans</td>
<td>Finance frictions and monetary policy&lt;br&gt;Marius Brunnermeier</td>
<td>Modeling the labor market&lt;br&gt;Robert Shimer</td>
<td>Forward guidance and monetary policy&lt;br&gt;Marc Bordo</td>
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<td>5:30 PM to 6:30 PM</td>
<td>Dinner</td>
<td>Cocktails</td>
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<td>6:30 PM to 8:00 PM</td>
<td>Dinner</td>
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<td>Optional Dinner</td>
<td>Celebration dinner at Stained Glass (7:15 pm)</td>
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