Labor Market Macro and Quantitative Methods

Q1 2011/2012 Preliminary Syllabus

Almut Balleer and Per Krusell

1 Part I (Almut): solving and simulating DSGE models

1.1 Motivation

- Facts about the business cycle

- Facts about the labor market

- A baseline business-cycle labor market model

1.2 Solving models

1.2.1 Introduction to numerical analysis and Matlab

- General considerations for numerical analysis

- A short introduction to Matlab and how to get started

- Miranda and Fackler toolbox

1.2.2 Solving for the steady state

- Numerical differentiation

- Solving linear equations

- Solving one-dimensional and multivariate nonlinear equations

1.2.3 Value function iteration

- Discretization, interpolation and function approximation

- Fixed-point iteration

- Curse of dimensionality

1.2.4 Solving the model with linear approximation

- First-order approximation around the steady state

- Implementation using Sims code

- Second-order approximation

1.3 Model simulation

- Parametrization and calibration of the model

- Calculating business cycle facts

- Assessing the performance of the model

1.4 Application: aggregate labor market dynamics

- Search-and-matching on the labor market

- Taking the search-and-matching model to the data

- The volatility-in-unemployment puzzle and wage rigidities

Literature for the first part of the course

- Applied Computational Economics and Finance by Mario Miranda and Paul Fackler

- Numerical Methods in Economics by Kenneth Judd

- Research articles

2 Part II (Per): heterogeneous agents and labor markets

Very very briefly, this part will involve a variety of topics such as

1. Macro models of inequality (based primarily on unemployment and wage shocks).

2. Frictional wage inequality.

3. Models for understanding labor-market flows across employment, unemployment, and out of the labor force.

4. Comparison of search-matching frictions with other imperfections in the labor markets (other reasons for unemployment).