

# MIDTERM OVERVIEW

**Petr Zemčik, Ph.D.**

# Format

- ◆ 5 essay questions
- ◆ Supply and demand problem
- ◆ Present value problem – bring a calculator with ability to calculate powers

# Text

- ◆ Martin Lux (editor, 2003). Housing Policy: An End or a New Beginning? Open Society Institute, Budapest, Hungary (<http://lgi.osi.hu>). (L)
- ◆ James D. Shilling (2002). Real Estate. 13<sup>th</sup> edition, South-Western. (S)
- <http://home.cerge-ei.cz/petrz/>

# Outline

## ◆ INTRODUCTION

- Real Estate and the Economy, S Ch.1
- Apartment prices in CEE
- The Economist. SURVEY: Property – House of cards. May 29<sup>th</sup> 2003
- Public Housing Policies: Economic and Social Perspectives, L. Ch. 1.

## ◆ PRESENT VALUE MODEL ANALYSIS

- Basic Valuation Concepts, S. Ch.3

# Outline

## SUPPLY AND DEMAND ON THE HOUSING MARKET

- Investment Environment, S Ch.2, Real Estate Markets, S. Ch.19
- Balazs Egert and Dubravko Mihaljek (2007). Determinants of House Prices in Central and Eastern Europe. Bank of International Settlements Working Paper 236.
- Petr Zemčik (2008). Residential Real Estate Market in the Czech Republic: Still Going Strong. In Czech Republic 2008: Strong Currency, No Rush Toward the Euro, available at [http://www.cerge-ei.cz/publications/books/#CR\\_2008](http://www.cerge-ei.cz/publications/books/#CR_2008)
- Donald Haurin (2008). The US Housing Crisis: Lessons Learned
- Jonathan Skinner. Housing and Saving in the United States. NP, Ch. 8

# Real estate basics – Shilling

## Ch.1

- Why real estate decisions are different?
- Apartment purchase example – costs, profits, leverage
- Real estate and the economy – employment, asset, commodity
- Real property characteristics
- Classes of property traded
- Market characteristics

# Lux: Public housing policies

- Economic perspective – equity vs efficiency
- Social perspective – financial affordability of housing, housing as a merit good, social housing
- Public housing policies – objectives, instruments, CEE vs. Western countries

# Economist 5/31/2003: House of cards

- Stock market bubble vs. property bubble
- Mid 1990s-2002: real property prices up 50% in Australia, UK, Ireland, the Netherlands, Spain, and Sweden. 30% in the US.
- Vicious cycles



# Vicious cycles

- Rising real estate prices=> growth
  - wealth effect, consumer spending
  - borrowing against property
  - effect on banks
- House price bust -8% relative to a GDP trend growth, share price bust only -4%
- 2003: Predicted cooling property markets

# Shilling, Ch.3: Present value model analysis

ITEM	Year			
	1	2	3	4
Potential gross income (5% annual growth rate)	108,000	113,400	119,070	125,024
- vacancy and collection losses (4%)	-4,320	-4,536	-4,763	-5,001
Effective gross income	103,680	108,864	114,307	120,023
Operating expenses				
Fixed				
- Property taxes 20.17%	-20,908	-21,953	-23,051	-24,204
- Hazard insurance	-1,460	-1,533	-1,610	-1,690
- Licenses and permits	-250	-263	-276	-289
Variable				
- Gas, water, electricity	-2,800	-2,940	-3,087	-3,241
- Supplies	-1,350	-1,418	-1,488	-1,563
- Advertising	-730	-767	-805	-845
- Payroll	-3,988	-4,187	-4,397	-4,617
- Management, 5% of gross income	-5,184	-5,443	-5,715	-6,001
- Miscellaneous services	-1,160	-1,218	-1,279	-1,343
- Property maintenance	-1,850	-1,943	-2,040	-2,142
Net Operating Income	64,000	67,200	70,560	74,088

# Present value of real estate

$$\begin{aligned} &= \frac{NOI_1}{(1+r)} + \frac{NOI_2}{(1+r)^2} + \dots + \frac{NOI_n + NSP_n}{(1+r)^n} \\ &= \frac{64,000}{(1.2)} + \frac{67,200}{(1.2)^2} + \frac{70,560}{(1.2)^3} + \frac{74,080 + 723,470}{(1+r)^4} \\ &= 525,457 \end{aligned}$$

*NOI* = Net Operating Income, *NSP* = Net Sales Price

# Supply and demand

- ◆ The housing market
- ◆ The rental market
- ◆ Price ceiling

# Shilling, Ch.19: Real Estate Markets

- Characteristics
- Factors of supply and demand
- Competitive markets?

# Shilling, Ch 2

## Investment environment

- The decision making cycle: purchase, management & administration, sale
- Market participants

# Determinants of house prices in CEE - Egert & Mihajlek (2007)

- ◆ Growing house prices before 2008
- ◆ Conventional fundamentals: GDP per capita, real interest rates, housing credit, demographic factors.
- ◆ Transition-specific factors: institutional development of housing markets and housing finance, quality effects, demand from other European countries

# House prices and macro fundamentals

- ◆ 1995-2005: real GDP increase by 50% in Central European countries (CR, H, PL, SL), 40% in south-eastern Europe (BG, CR) and by 100% in LT, E.
- ◆ Nom. mortgage rates: 30% in 1995, 13% in 2000, 6 %in 2005
- ◆ Real rates 16% in 1995 (expect for E&LT), 3.5%in 2005



# Specific factors for CEE

- ◆ Prior to 2000s, weak housing market institutions, no housing finance
- ◆ Then longer-term housing loans, higher loan-to-value ratios, lower interest rates = lifting credit constraints
- ◆ Limited supply of new homes
- ◆ Housing quality
- ◆ Higher external demand - expectations
- ◆ Initial undershooting of house prices

## Zemcik (2008): Residential real estate market in the CR still going strong

- ◆ The increase of net disposable income and construction costs in 2001–2003 was 6.2% and 4.9%, respectively. Both the leftward shift of the supply curve and the rightward shift of the demand curve increased the prices of housing.
- ◆ Putting together these numbers with the growth in rents implies  $6.2\% + 4.9\% + 18.0\% = 29.1\%$ , which is comparable with the 27.6% apartment price growth from 2001 to 2003. This supports the conclusion that the growth of apartment prices was in line with the fundamentals from 2001 to 2003.
- ◆ The numbers for the 2004–2007 period are  $19.9\% + 9.6\% + 6.8\% = 36.3\%$ , much lower than the increase of 49.5% in the apartment prices.
- ◆ Mortgage volume rose by 56.4% in 2007

# Haurin: The US Housing Crisis

- ◆ What is the nature and extent of the U.S. housing crisis?
- ◆ What were the standard fundamental causes of the housing boom and what were the newer factors?
- ◆ What factors caused the end of the boom?
- ◆ What lessons can be learned from the crisis and what policies are appropriate?

# Skinner: Housing and saving in the US

- ◆ Life-cycle housing decisions
- ◆ House price appreciation and savings of current and potential home owners
- ◆ Housing and uncertainty