

# Rural-Urban Migration

EC 390 - Development Economics

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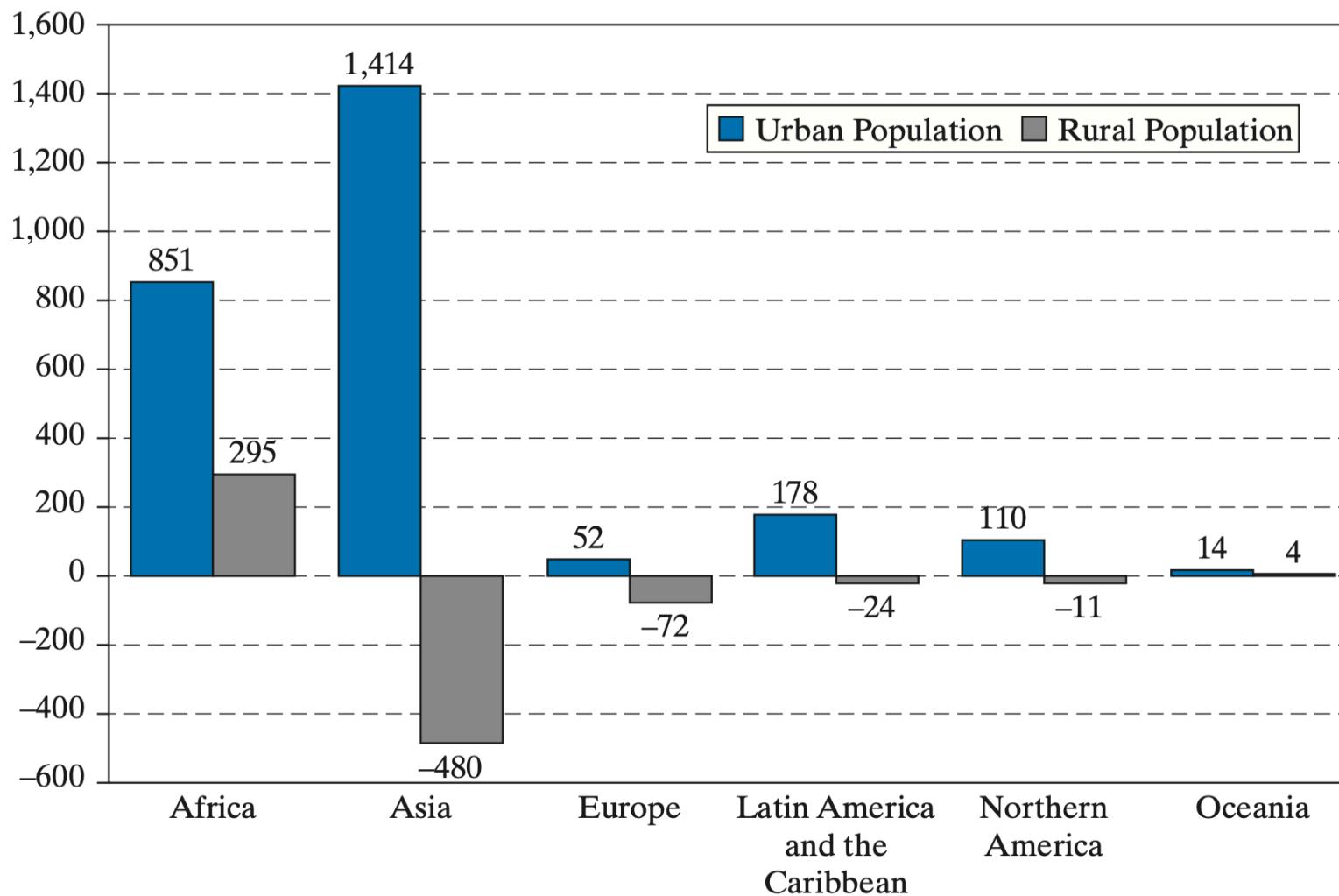
# Migration

# So Far...

We have seen that most societies start as **agrarian**

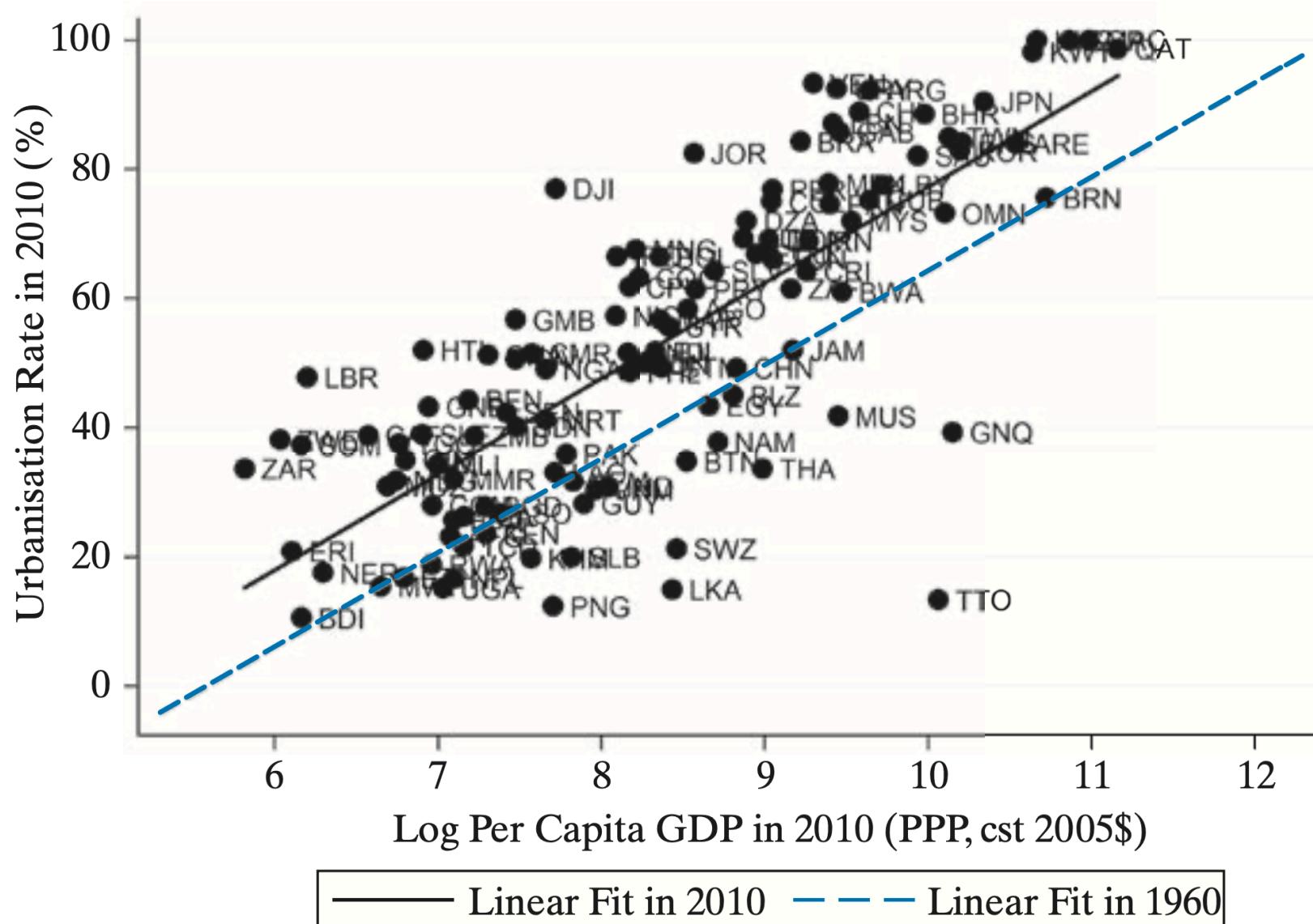
- Then new technology makes **agriculture more efficient**
- Which means that fewer people need to work in agriculture
- The **surplus agricultural labor** transitions toward the industrial sector
- But **where do they work?**
  - **Cities**

# Urban/Rural Population

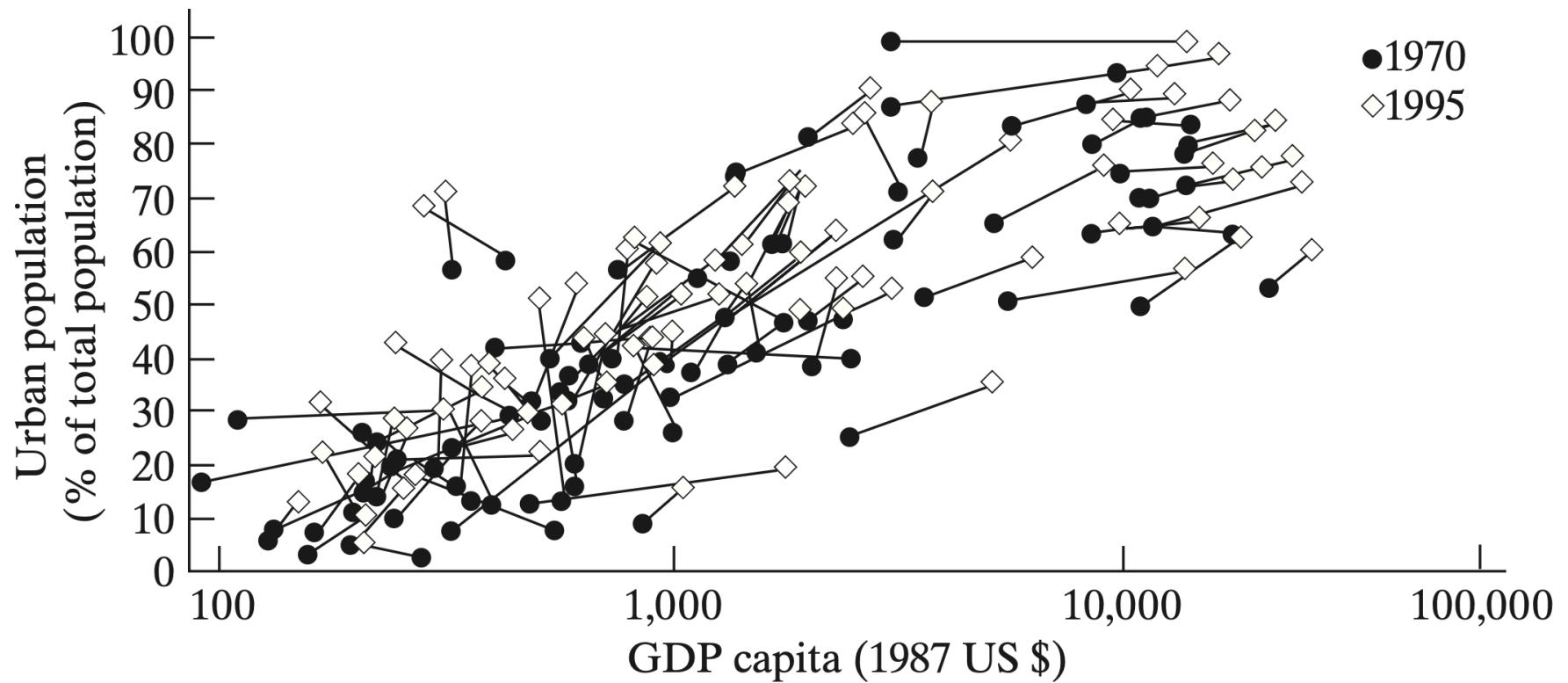


Source: United Nations (2011), 'Africa and Asia to lead urban population growth in the next four decades,' press release, [http://esa.un.org/unup/pdf/WUP2011\\_Press-Release.pdf](http://esa.un.org/unup/pdf/WUP2011_Press-Release.pdf). Reproduced by permission of United Nations Publications.

# Urbanization and Per Capita GDP



# Migration and Growth



Source: The United Nations is the author of the original material. *World Urbanisation Prospects: The 2009 Revision*. © 2009 United Nations. Reproduced with permission.

**There is a clear correlation between urban migration and growth**

**But the direction isn't very clear**

# Migration

**What factors could be contributing to the growth of cities?**

**We can think of two different categories:**

**1. Push Factors**

**2. Pull Factors**

# Migration

**What factors could be contributing to the growth of cities?**

**We can think of two different categories:**

## 1. Push Factors

- **Lack of Economic Opportunities:** Low agricultural productivity, underemployment, unstable farm incomes
- **Poor Living Conditions** Limited access to healthcare, education, poor infrastructure
- **Environmental pressures** Drought, soil degradation, natural disasters

## 2. Pull Factors

# Migration

**What factors could be contributing to the growth of cities?**

**We can think of two different categories:**

**1. Push Factors**

**2. Pull Factors**

- **Employment prospect** Cities offer more jobs, especially in manufacturing, services, and the informal sector
- **Better Services and Amenities** Access to education, healthcare, and infrastructure draws migrants
- **Social and Lifestyle Appeal** Greater connectivity, modern lifestyles, and social mobility

# Key Terms

- **Urban Bias:** Governments favor urban areas over rural areas
- **Rural-to-Urban Migration:** Movement of people from farms to urban center
- **Agglomeration Economy** Cost advantages of grouping consumers and producers in the same area

# Role of Cities

# Role of Cities

## Cities can be thought of as a massive coordination success

- As distance between consumers and producers increases we see:
  - Communication being more difficult
  - Transportation becomes more expensive
  - Market information is less transparent
- **Example:**
  - Shopping for a car in Portland allows you a lot of opportunity for information
  - Shopping for a car in Tillamook can be more difficult with less information

# Agglomeration Economies

**Definition:** Being close to others makes production and consumption cheaper and more efficient than being isolated

There are also **spillover effects** from agglomeration

- 1. Knowledge Spillovers**
- 2. Labor Market Spillovers**
- 3. Shared Infrastructure and Services Spillovers**
- 4. Market Access and Consumer Spillovers**
- 5. Social and Institutional Spillovers**

# Agglomeration Spillovers

## 1. Knowledge Spillovers

- Skills and ideas spread faster than in isolated rural economies
- Things like observing new production techniques or copying better business practices raise productivity

## 2. Labor Market Spillovers

## 3. Shared Infrastructure and Services Spillovers

## 4. Market Access and Consumer Spillovers

## 5. Social and Institutional Spillovers

# Agglomeration Spillovers

## 1. Knowledge Spillovers

## 2. Labor Market Spillovers

- Cities create “**thicker labor markets**”, where workers and employers can find better matches
- Firms get access to more skilled labor, and workers find more job opportunities

## 3. Shared Infrastructure and Services Spillovers

## 4. Market Access and Consumer Spillovers

## 5. Social and Institutional Spillovers

# Agglomeration Spillovers

1. Knowledge Spillovers

2. Labor Market Spillovers

## 3. Shared Infrastructure and Services Spillovers

- Concentration of firms makes it cheaper for governments to provide roads, electricity, sanitation, and internet access
- Reduces costs for all businesses and supports further investment

4. Market Access and Consumer Spillovers

5. Social and Institutional Spillovers

# Agglomeration Spillovers

1. Knowledge Spillovers

2. Labor Market Spillovers

3. Shared Infrastructure and Services Spillovers

## 4. Market Access and Consumer Spillovers

- Urban areas bring together large groups of consumers, **creating bigger and more diverse markets**
- Encourages entrepreneurship and specialization

5. Social and Institutional Spillovers

# Agglomeration Spillovers

1. Knowledge Spillovers

2. Labor Market Spillovers

3. Shared Infrastructure and Services Spillovers

4. Market Access and Consumer Spillovers

5. Social and Institutional Spillovers

- Cities often become centers for **education, finance, and governance**
- Urban exposure can change social norms (gender equality, attitudes toward education, or entrepreneurship, etc.)

# Agglomeration Example (Silicon Valley)



# Role of Cities

That was a lot of **benefits** that cities may give

But what about **cons**?

- 1. Overcrowding and Housing Shortages**
- 2. Infrastructure Strain**
- 3. Inequality and Informal Employment**
- 4. Environmental Degradation**
- 5. Rising Cost of Living**
- 6. Social and Governance Challenges**

# Cons of Cities

## 1. Overcrowding and Housing Shortages

- Rapid inflows of people can overwhelm housing supply, leading to **slums and informal settlements**
- Overcrowded conditions often lack clean water, sanitation, and electricity

2. Infrastructure Strain

3. Inequality and Informal Employment

4. Environmental Degradation

5. Rising Cost of Living

6. Social and Governance Challenges

# Cons of Cities

1. Overcrowding and Housing Shortages

2. Infrastructure Strain

- Cities may grow faster than their roads, public transit, and utilities can expand
- Leading to **congestion, power outages, and inadequate waste management**
- Governments struggle to finance and coordinate urban planning

3. Inequality and Informal Employment

4. Environmental Degradation

5. Rising Cost of Living

6. Social and Governance Challenges

# Cons of Cities

1. Overcrowding and Housing Shortages

2. Infrastructure Strain

## 3. Inequality and Informal Employment

- Economic opportunities are unevenly distributed. Some residents find good jobs, while many end up in **low-paying informal work**
- Inequality can deepen between migrants, long-term residents, and social classes

4. Environmental Degradation

5. Rising Cost of Living

6. Social and Governance Challenges

# Cons of Cities

1. Overcrowding and Housing Shortages

2. Infrastructure Strain

3. Inequality and Informal Employment

## 4. Environmental Degradation

- Urban expansion can cause **air and water pollution**, loss of green spaces, and higher carbon emission
- Poor waste disposal and traffic congestion contribute to environmental stress and poor public health

5. Rising Cost of Living

6. Social and Governance Challenges

# Cons of Cities

1. Overcrowding and Housing Shortages

2. Infrastructure Strain

3. Inequality and Informal Employment

4. Environmental Degradation

5. Rising Cost of Living

- As demand for land and services increases, **housing, food, and transport costs rise**
- The poor may be priced out of central areas, **deepening spatial inequality**

6. Social and Governance Challenges

# Cons of Cities

1. Overcrowding and Housing Shortages

2. Infrastructure Strain

3. Inequality and Informal Employment

4. Environmental Degradation

5. Rising Cost of Living

## 6. Social and Governance Challenges

- Rapid urbanization can outpace local government capacity to regulate land use, collect taxes, and deliver services
- This can lead to **informal governance**, corruption, and weak urban institutions

# The Issue of Congestion

In the economic sense, we **define it as:**

**An action taken by one agent that decreases the incentives for other agents to take similar actions**

- The **opposite of complementarity**

# The Issue of Congestion

The most **obvious form of congestion** is **traffic**



# The Issue of Congestion

A **lesss obvious form is rent**

- The **more people live in a city**, the **higher the cost of rent**
- The **higher the rent**, the **less people want to live there**

# Colonialism and Urban Development

- Many colonies were used **only for resource extraction**
- Settlements were set up near resources or export points (coasts)
- Colonizers have **little need to build roads linking villages**
- All roads **lead to the central city** (usually on the coast or near bodies of water)

## **Transportation routes linking industries play a key role**

- Urban concentrations appear where **transport routes cross**
- This emphasizes the lasting impacts of historical events
- When all roads lead to **one place**, what should we expect to happen to populations of that area?

# Senegal

French colony concentrated in Dakar



# Senegal

# Population Concentration

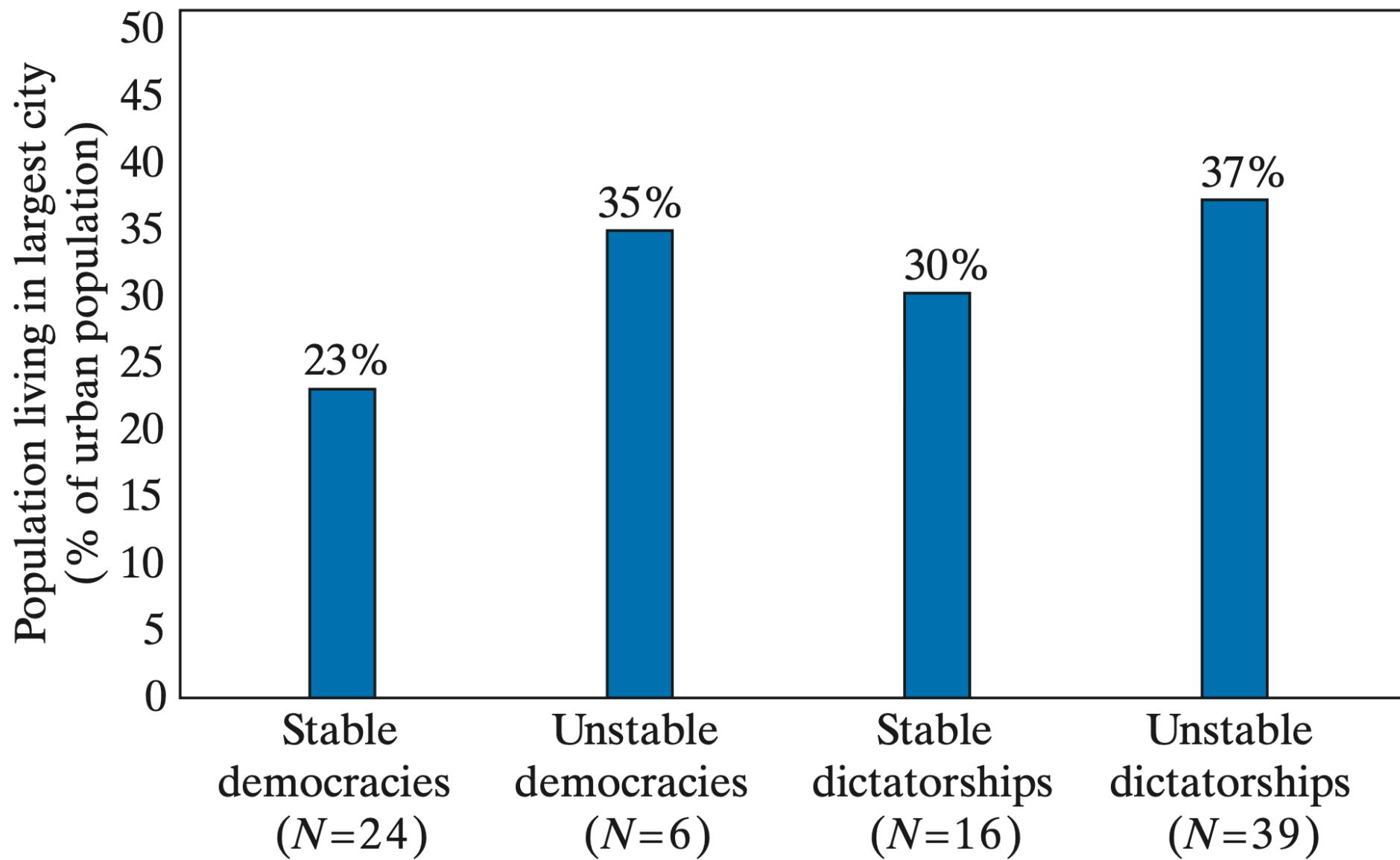


# Urban Giantism Problems

There are many potential problems when the majority of the country lives in a **single city**

- Obviously **congestion** is a problem
- But we can also experience **Urban Bias**
  - **Definition:** More resources go to cities than rural areas
- This may also lead to **political instability**

# Political Instability



# Microeconomics of Migration

# Microeconomics of Migration

The **decision to migrate** is one of **potential trade-offs**

- Do I stay in a **rural area and try to make a living farming?**
- Do I move away **to a new place and look for work there?**
- These decisions have costs and benefits, which is why **the decision to migrate is an economic one**

# Microeconomics of Migration

**Consider an agent living in a rural area**

- The agent has a choice:
  - Work in the **rural area** (farming) and receive **wage \$X per day**
  - Move to **the city and work there** (manufacturing) and receive **wage \$Y per day**
  - Where
- What should the **agent do?** **Move to the city**

**But**

- What if there is **no guarantee of employment** once they move?
- Let's introduce a model that will **allow us to use this uncertainty**

# Todaro Migration Model

**Premise:** Agents consider labor market opportunities available to them in the rural and urban sectors and choose the one that maximizes their expected gains from migration

## Main Assumptions

- Agents have knowledge of labor markets
- Migration has no cost
- Two regions to work in

## Two Regions

- Rural with **rural wage** which is flexible enough that there is **full employment**
- City with **city wage** which is fixed

# Todaro Migration Model: Setup

- There are a total of **N workers** in the economy
- There are **N** workers who live in the **city** and **rural** area, respectively:
- **Not all workers who live in the city are employed**
- Populations in both areas look like:
  - where  $E_c$  and  $U_c$  are the number of city employed workers, city unemployed workers, and rural employed workers

# Todaro Migration Model

- If we combine the previous equations we get:
- We can take one step further and calculate **the unemployment rate** as:

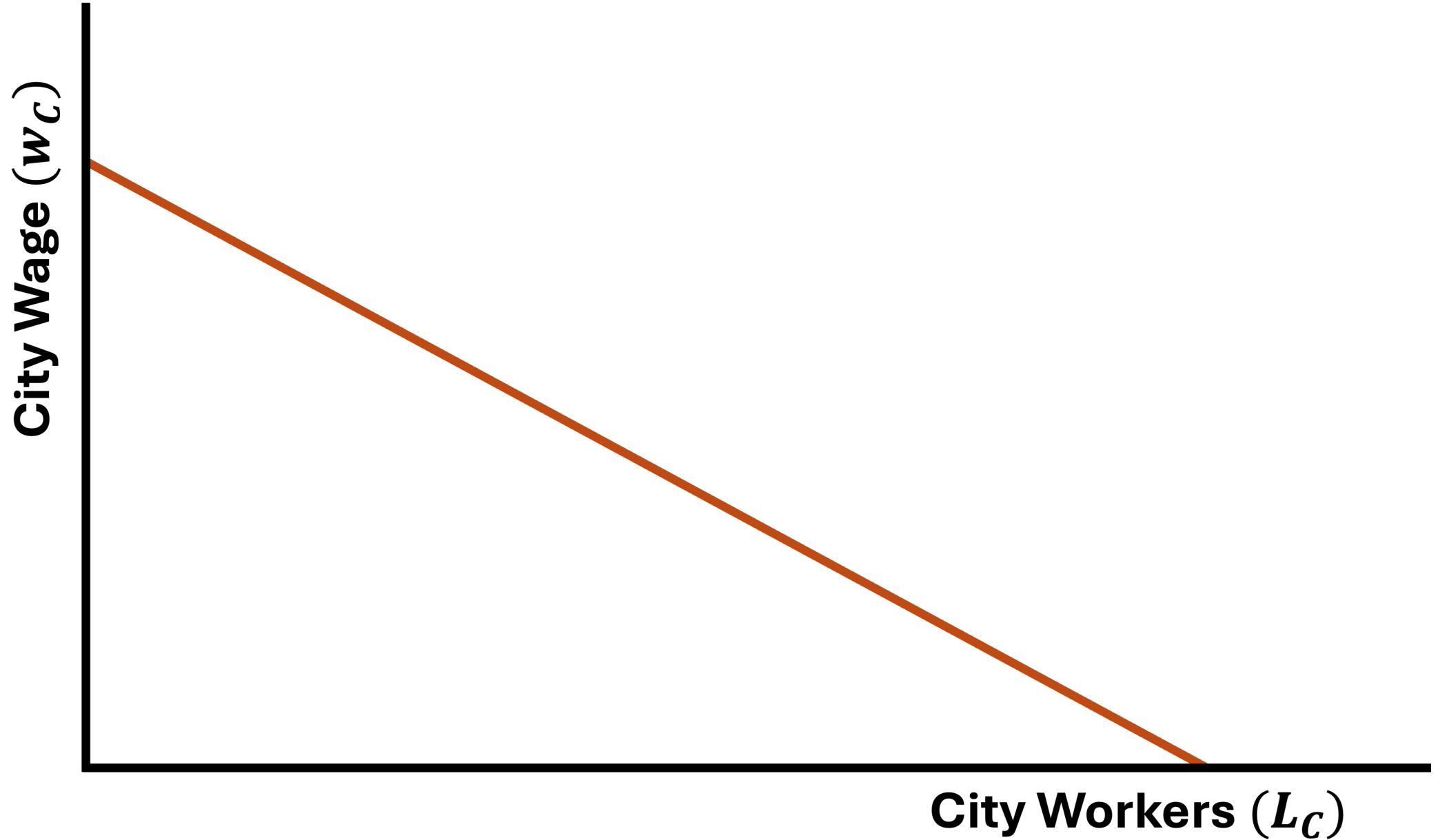
# Todaro Migration Model: Equilibrium

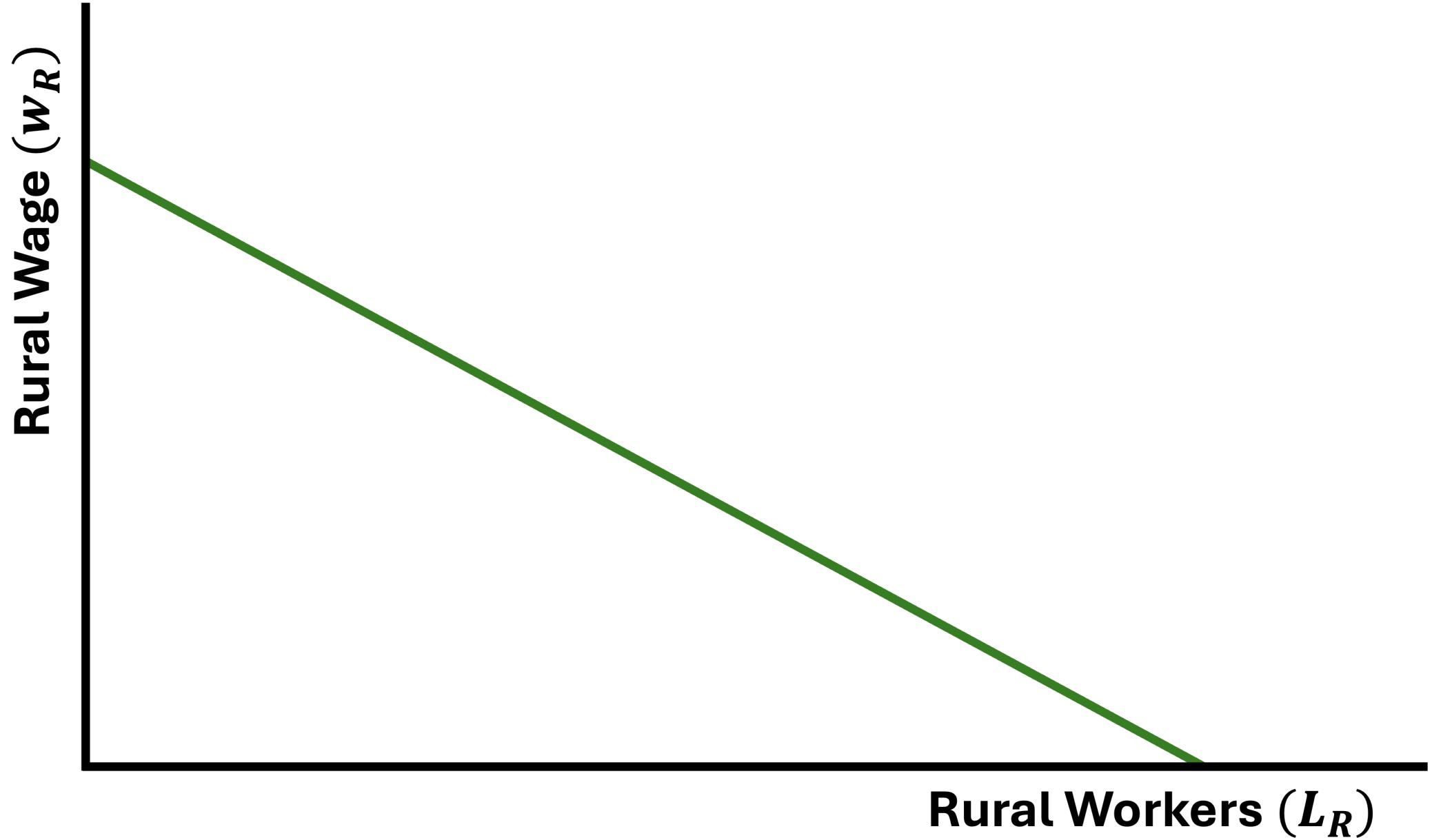
- Agents in the model base their migration decision on their expected income in the city
- Even though the wage in the city is fixed, there is some probability that if the agent migrates they will be unemployed
- The **expected city wage** is given by:
  - Where is the probability that the agent will not find a job

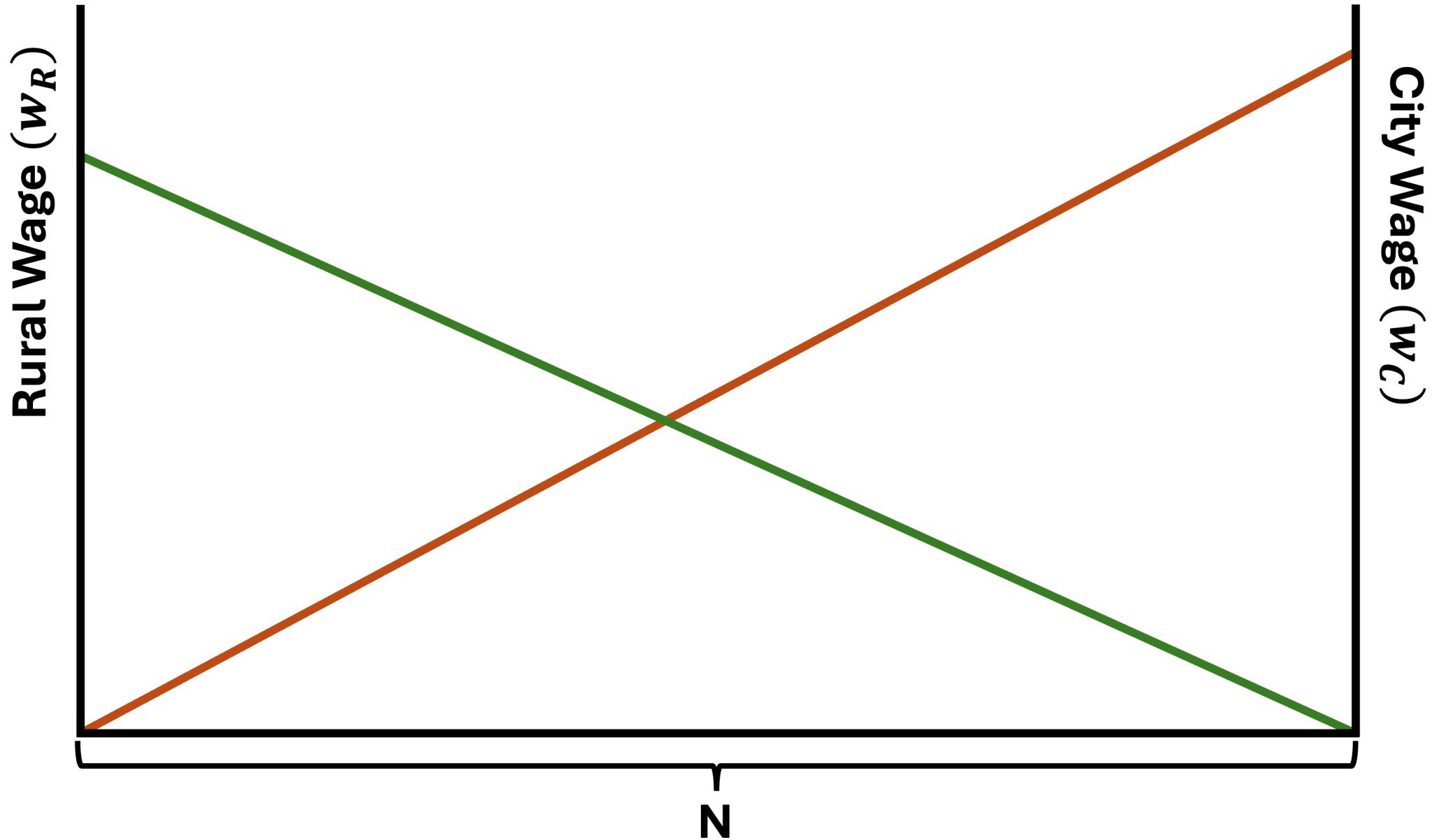
# Todaro Migration Model: Equilibrium

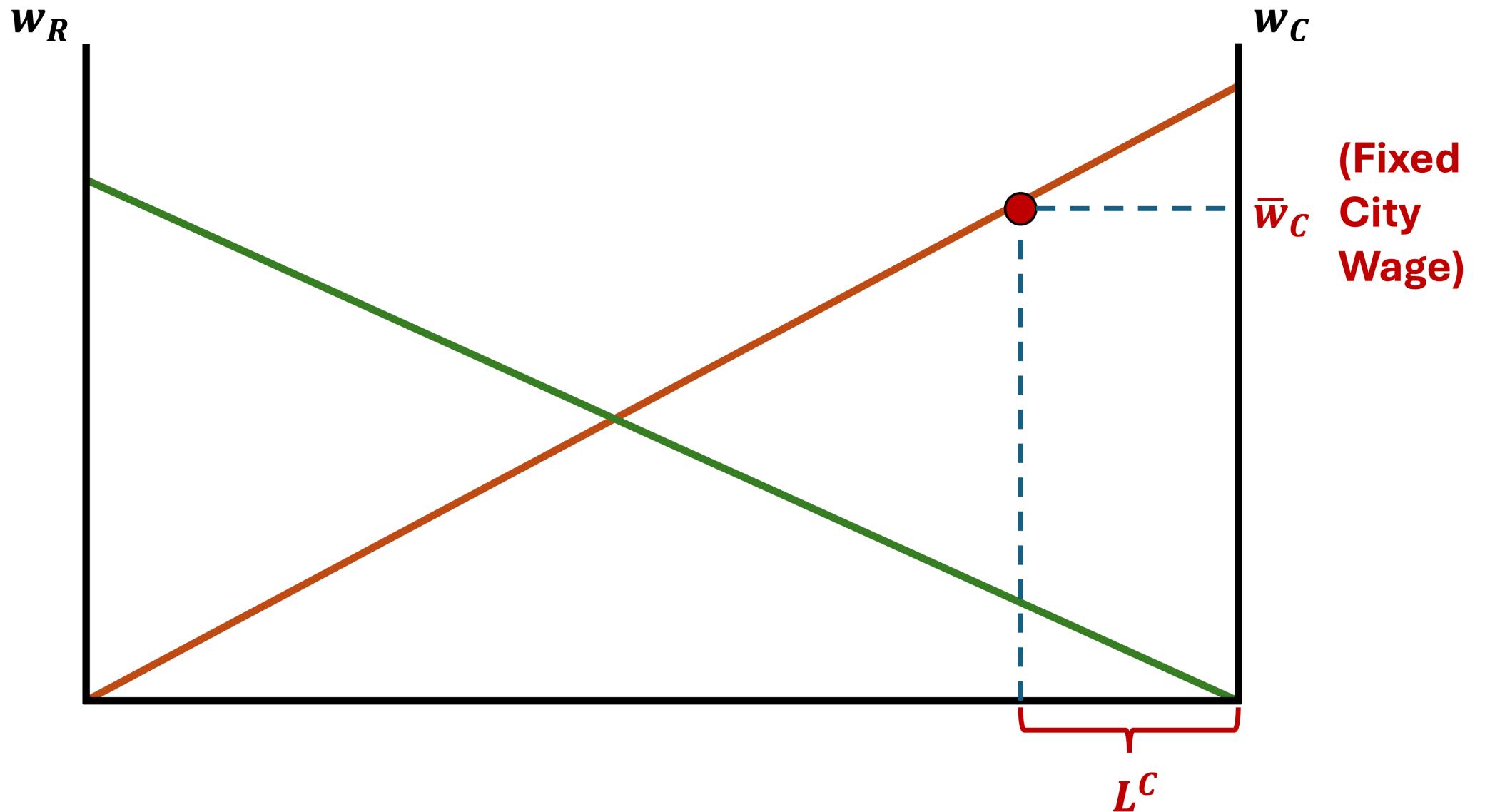
**In this model, an equilibrium is a set of numbers**

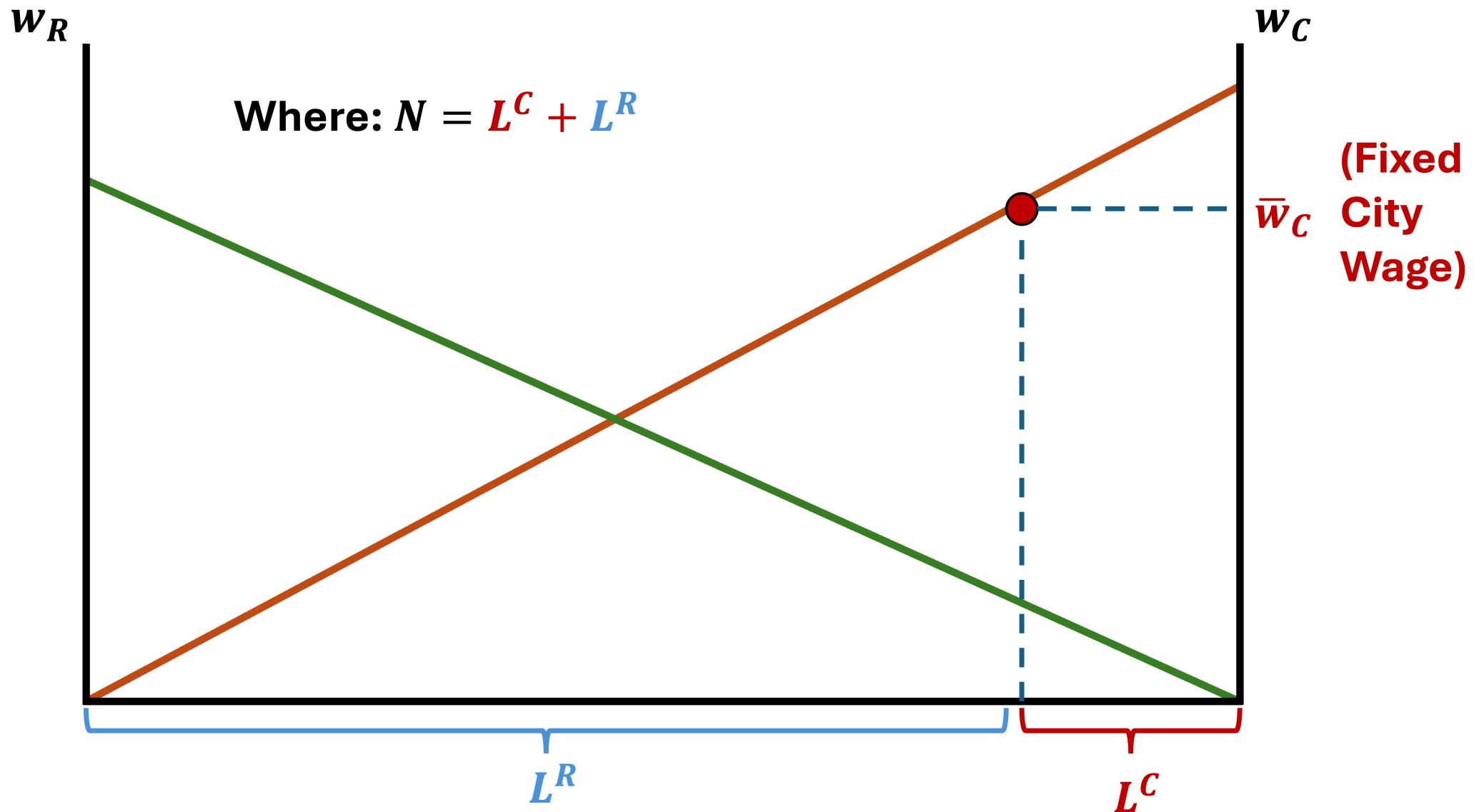
- Equilibrium =
- We can solve for it using graphs
- Let's try an example

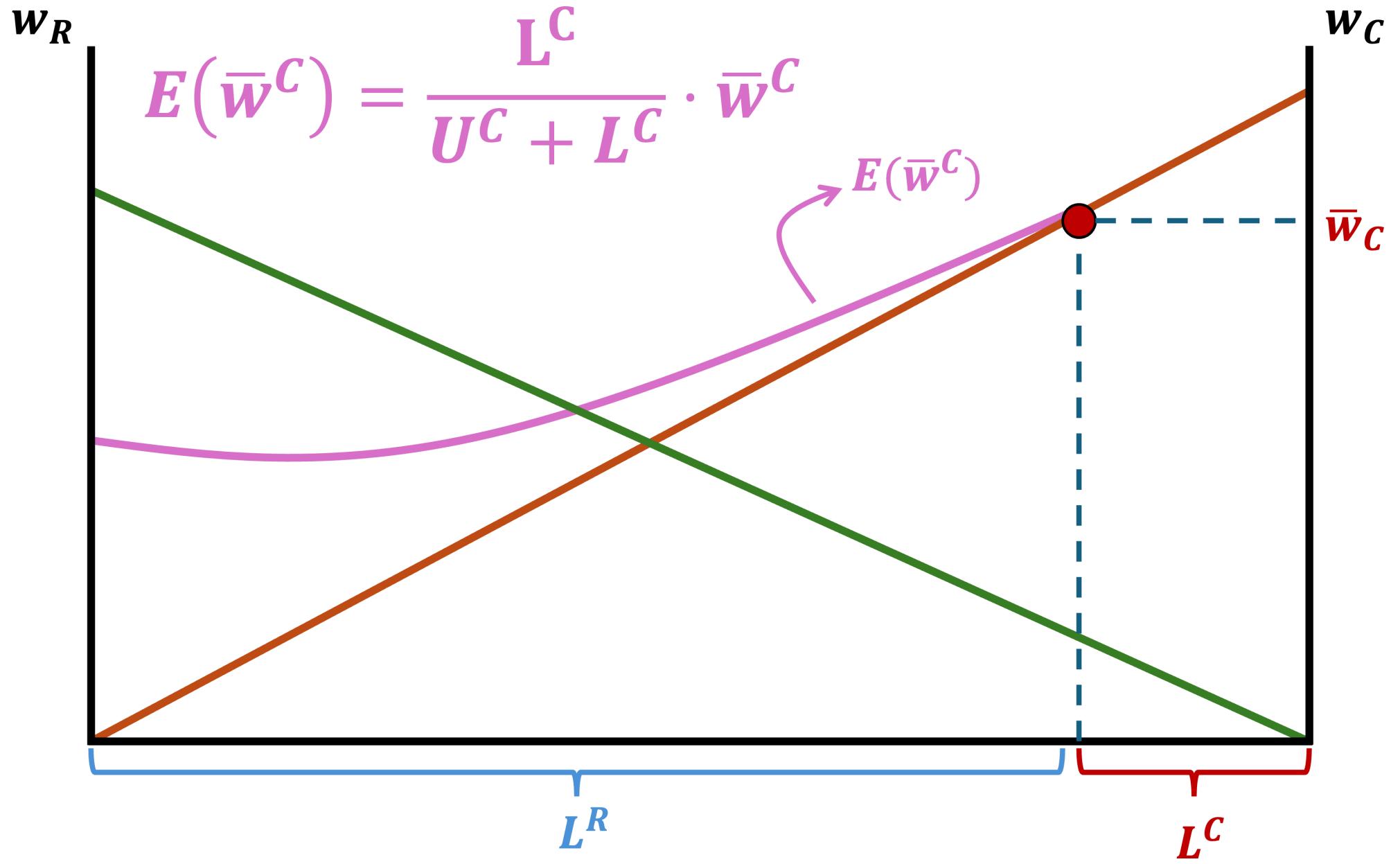


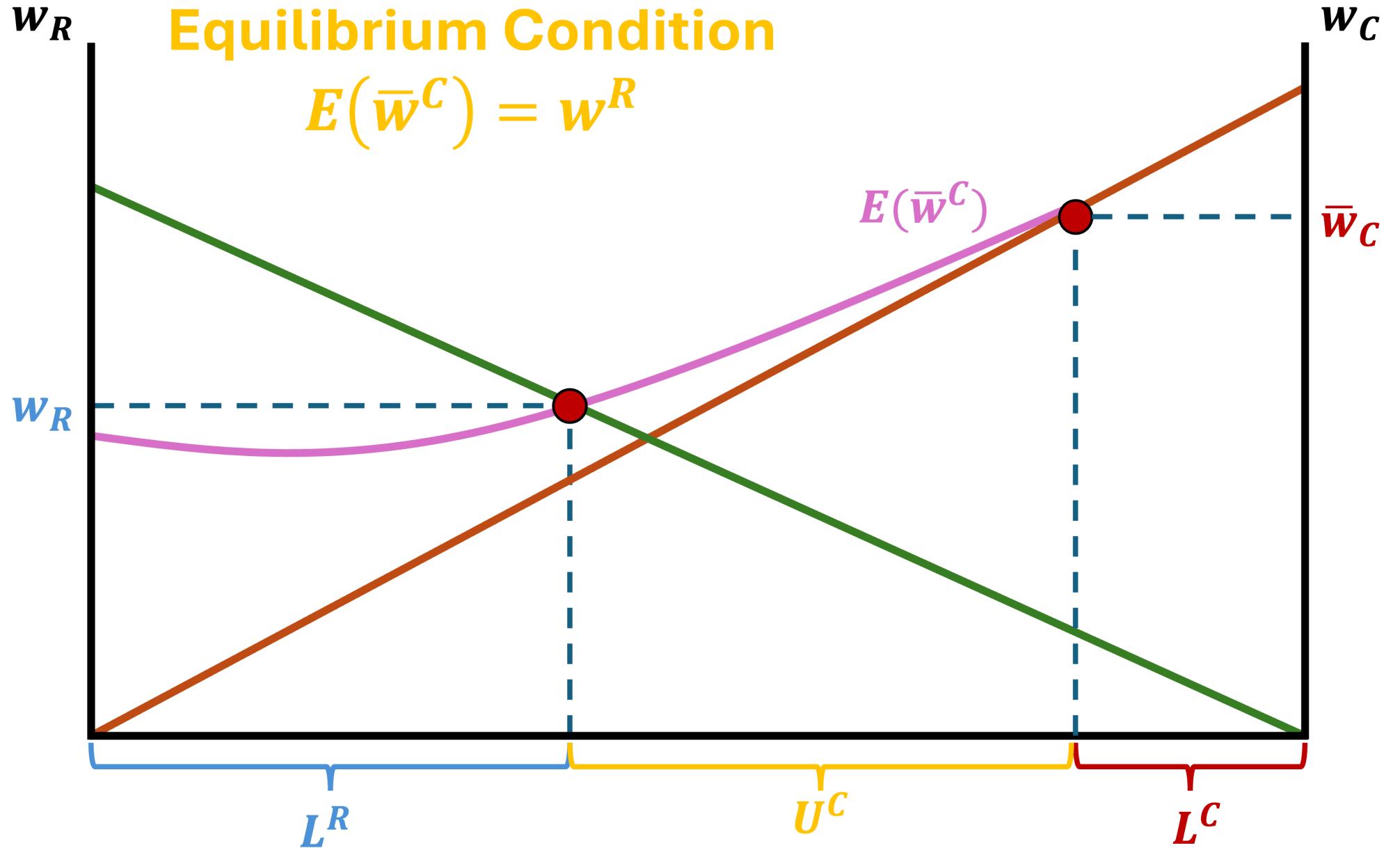






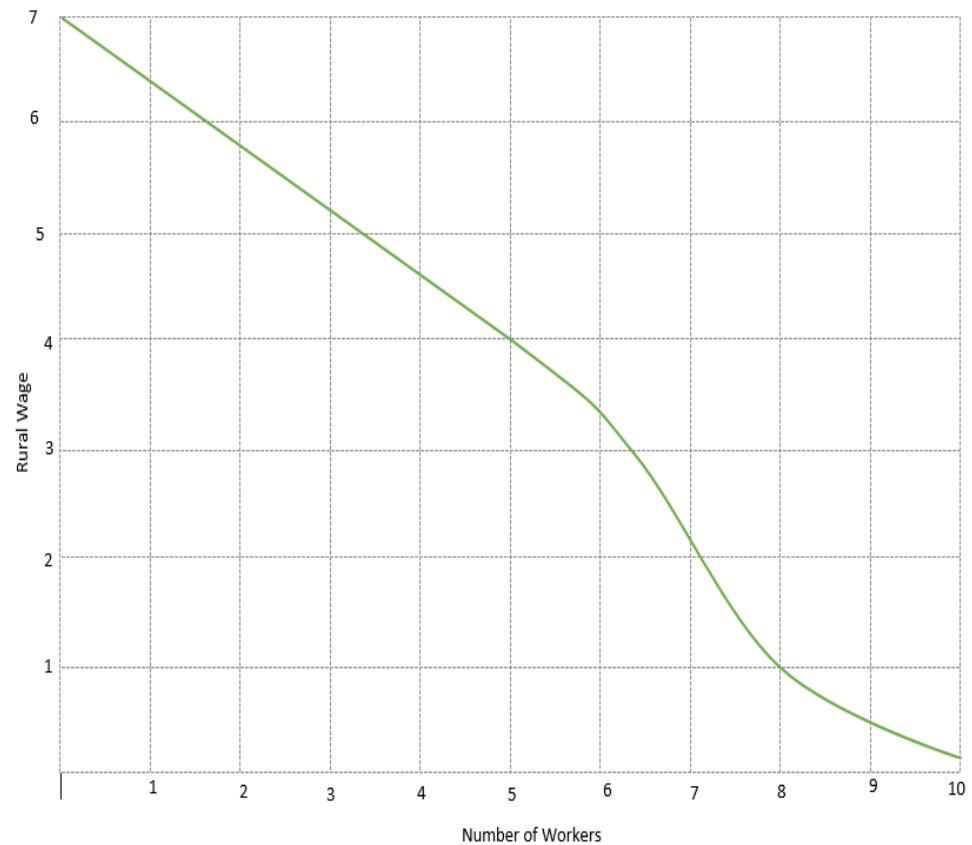
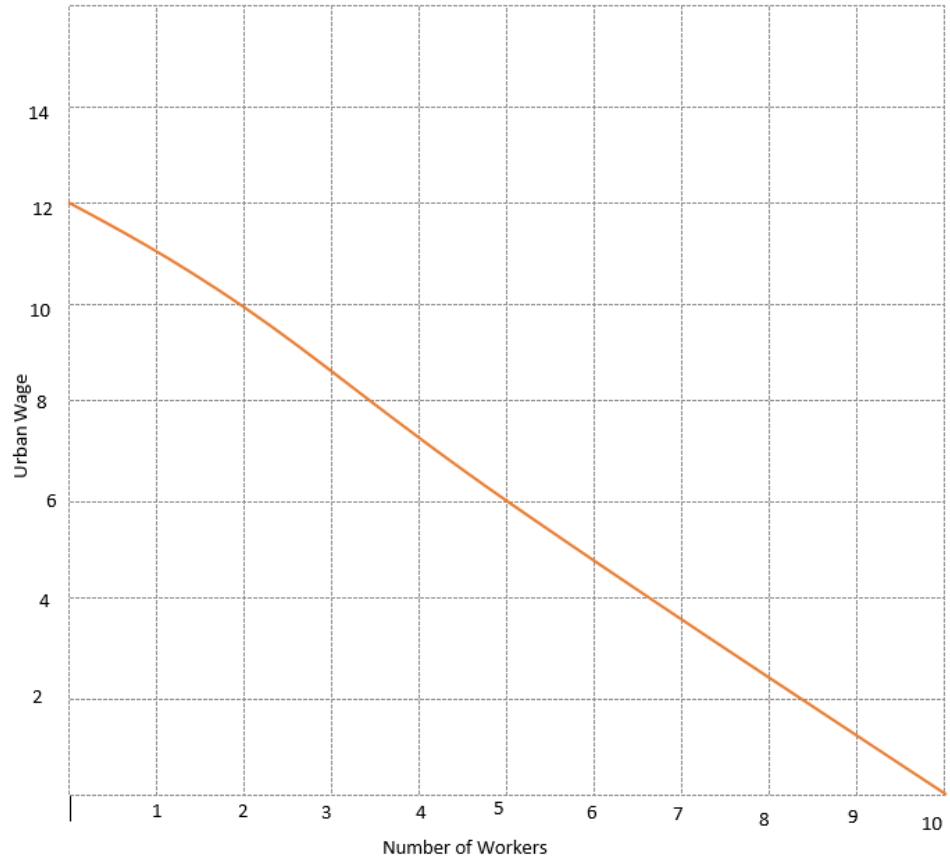






# Numerical Example

Let's look at an example with numbers



**Urban Wages**

EC390, Lecture 08 | Migration

**Rural Wages**

# Numerical Example

We want to put **both demand curves** on the same graph

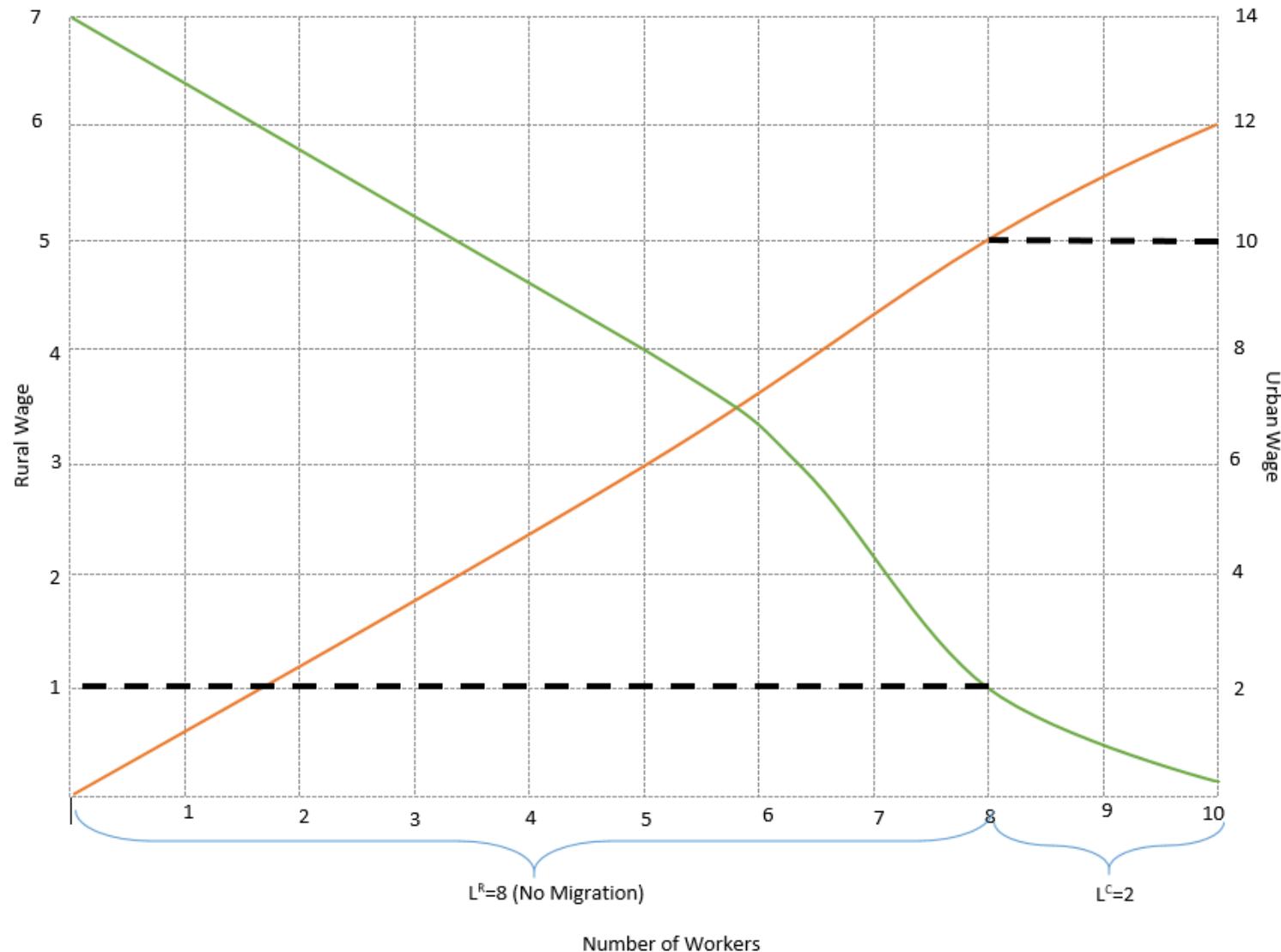
- We put **urban wages** on the right-hand side and **rural wages** on the left-hand side
- Be careful to notice the difference in axis values
  - **Urban wages** are higher than **rural wages**

# Numerical Example - Combined Demand Curves

# Numerical Example - Stage 01

- Let the wage in the urban area be fixed at **10** →
- **Urban employers** demand **2 units of labor** →
- For now, suppose **no one migrates to the city**
  - Everyone works in the **rural sector** and receives a wage of 1:
  - **and**

# Numerical Example - Stage 01



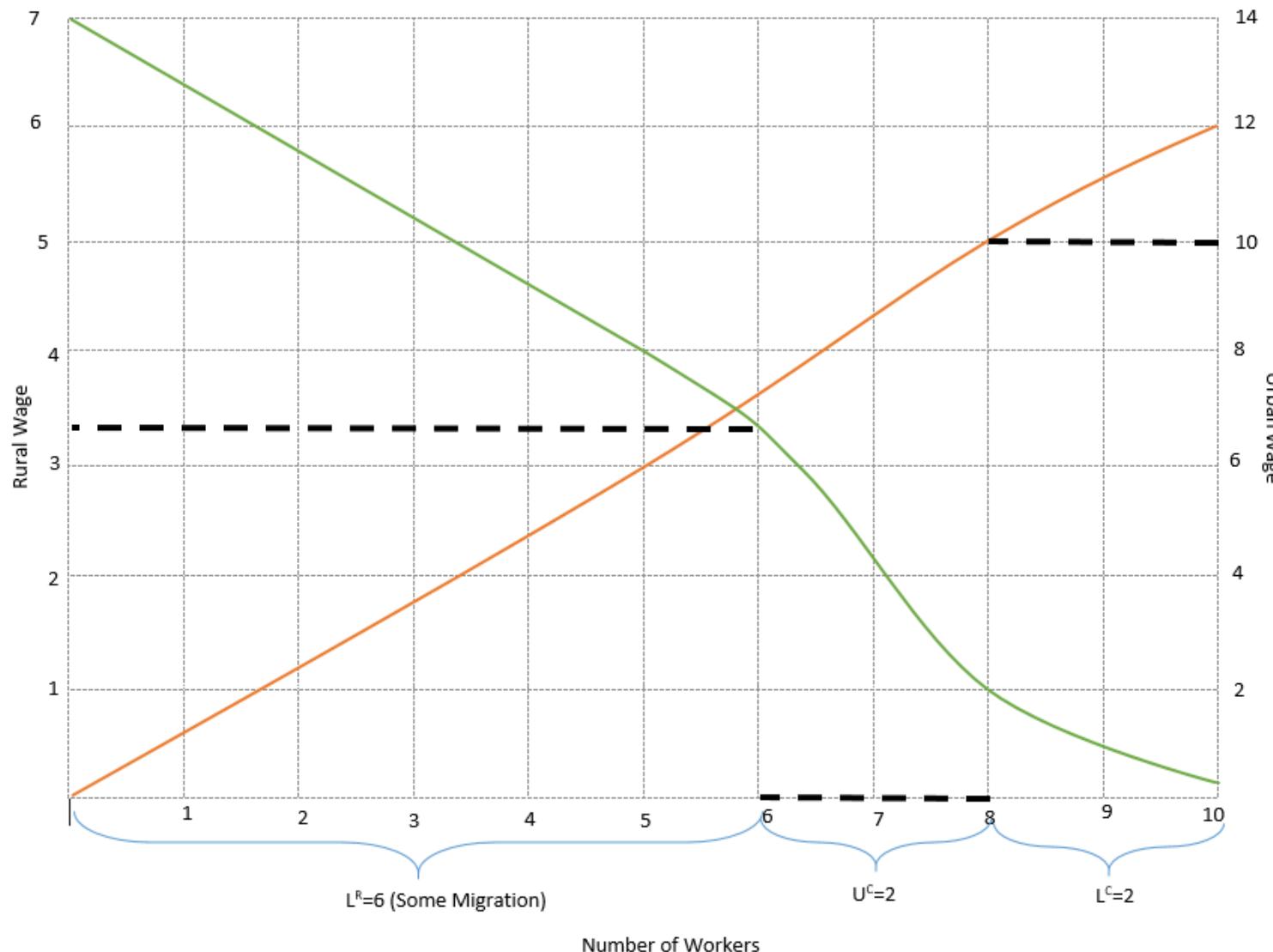
# Numerical Example - Equilibrium?

# Numerical Example - Stage 02 (Migration)

So with 2 brave souls **migrating** to the city, we now have **4 people in the urban area** which implies:

- There is an **increase** in the number of people living in the **urban area**
- There is a **decrease** in the number of people living in the **rural area**
- The increase in the **urban population reduces** the probability that an urban worker is able to find employment
- At the same time, the **reduction in the rural population increases rural wages**

# Numerical Example - Stage 02 (Migration)



# Numerical Example - Finding New Wages

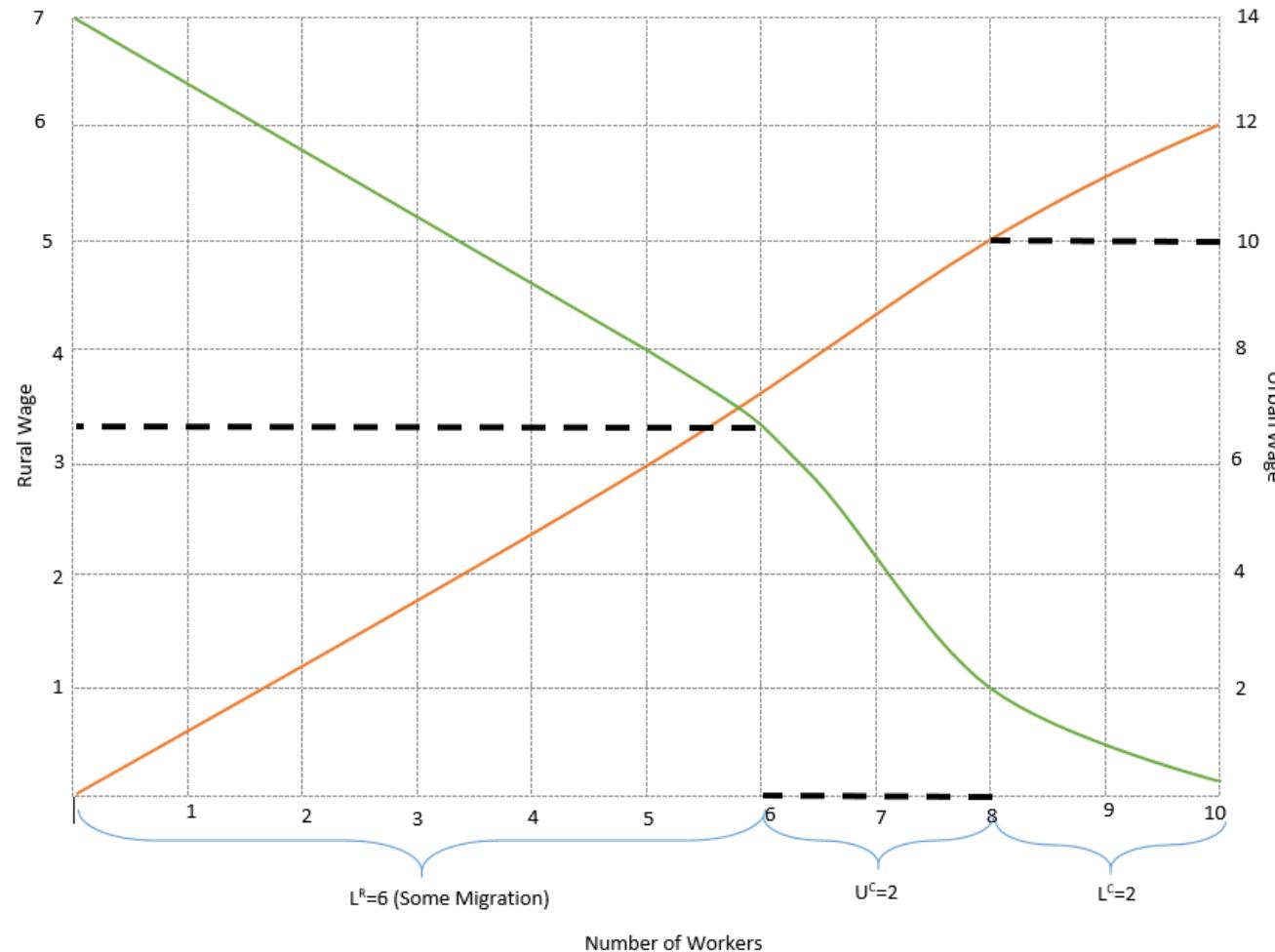
Recall we can find the **rural wage** by:

- We know that and

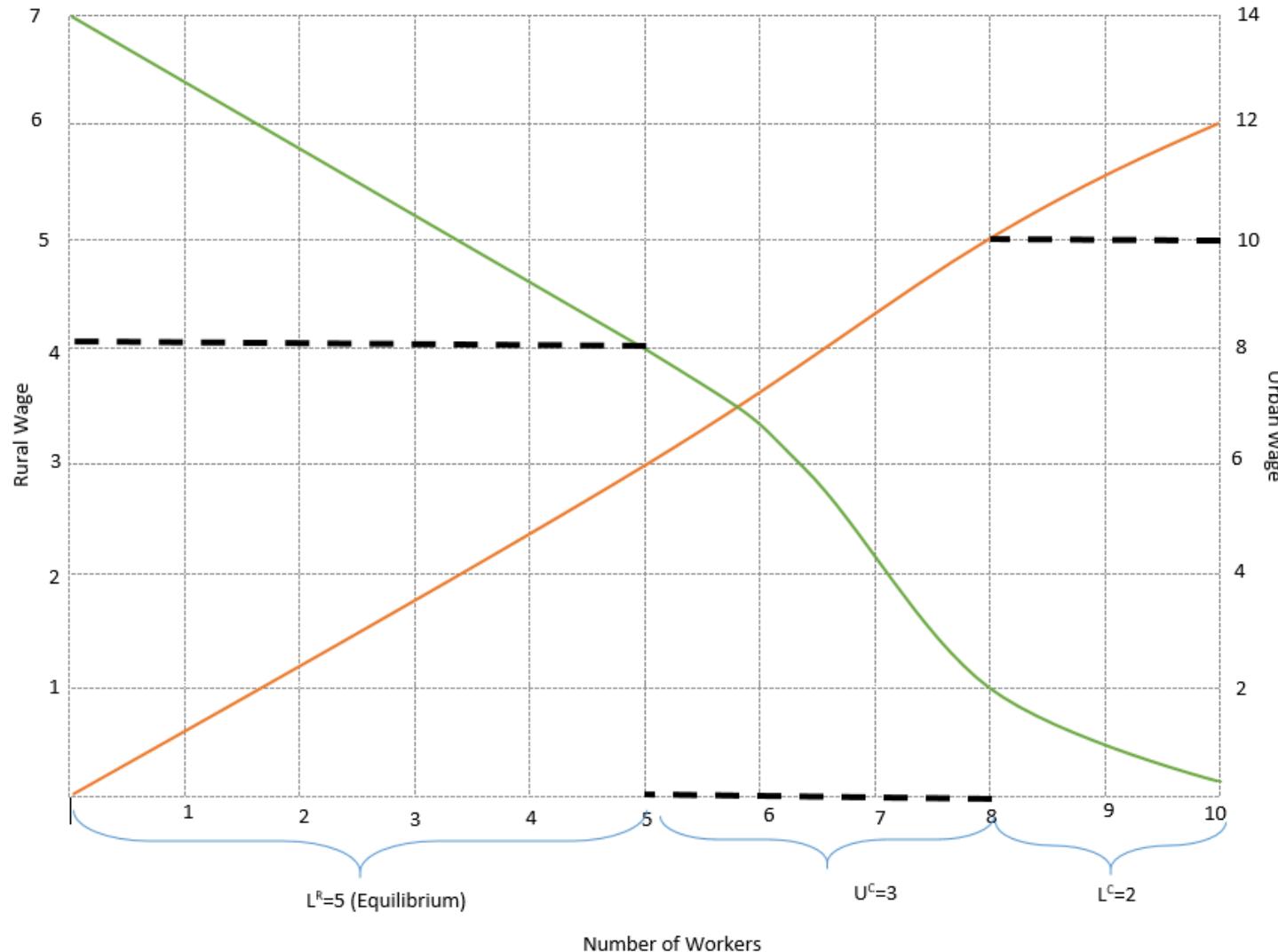
**Is this an equilibrium?**

Let's check our graph again

# Numerical Example - Finding New Wages



# Numerical Example - Stage 03 (3 Migrants)



# Numerical Example - Stage 03 (Wages)

If 3 people migrate, then and

- Our equilibrium condition is such that :
- **This is an equilibrium!**
- We write this as
- Writing it like this is important: it shows that the equilibrium is a set of values

# Summary

- Biggest **benefit** of urbanization and migration to cities are **agglomeration economies**
- Biggest **cost** of urbanization and migration is **congestion**
- Outcomes of urbanization and migration are less clear:
  - Does urbanization lead to higher social capital?
  - Does urbanization lead to more inequality and less social capital?
  - Who is able to migrate? The wealthiest? The best educated?
- Equally important is the ability of receiving cities to properly accommodate migrants
- Possibly the biggest issue surrounding urbanization in developing countries involves the lack of opportunity in rural areas

# Policies

What can be done about some of the problems urbanization causes?

- Because this is a relatively new phenomenon, we do not have perfect solutions yet

**1. Better Rural-Urban Balance**

**2. Anticipation**

# Policies

What can be done about some of the problems urbanization causes?

- Because this is a relatively new phenomenon, we do not have perfect solutions yet

## 1. Better Rural-Urban Balance

- Most policies are focused on urban sectors due to their economic and political importance
- This highlights the need for policies aimed at assisting rural workers
  - Ex: Better access to credit and insurance markets for farmers should reduce the risk of working in rural areas

## 2. Anticipation

# Policies

What can be done about some of the problems urbanization causes?

- Because this is a relatively new phenomenon, we do not have perfect solutions yet

## 1. Better Rural-Urban Balance

## 2. Anticipation

- Urbanization is not stopping and adjustments toward this is important
- Adjusting zoning laws might help ease congestion in major cities
- Serious investment in infrastructure is needed

# Policies

What can be done about some of the problems urbanization causes?

- Because this is a relatively new phenomenon, we do not have perfect solutions yet

**1. Better Rural-Urban Balance**

**2. Anticipation**

**3. It's on us to be conscious of how growth needs to be more guided**