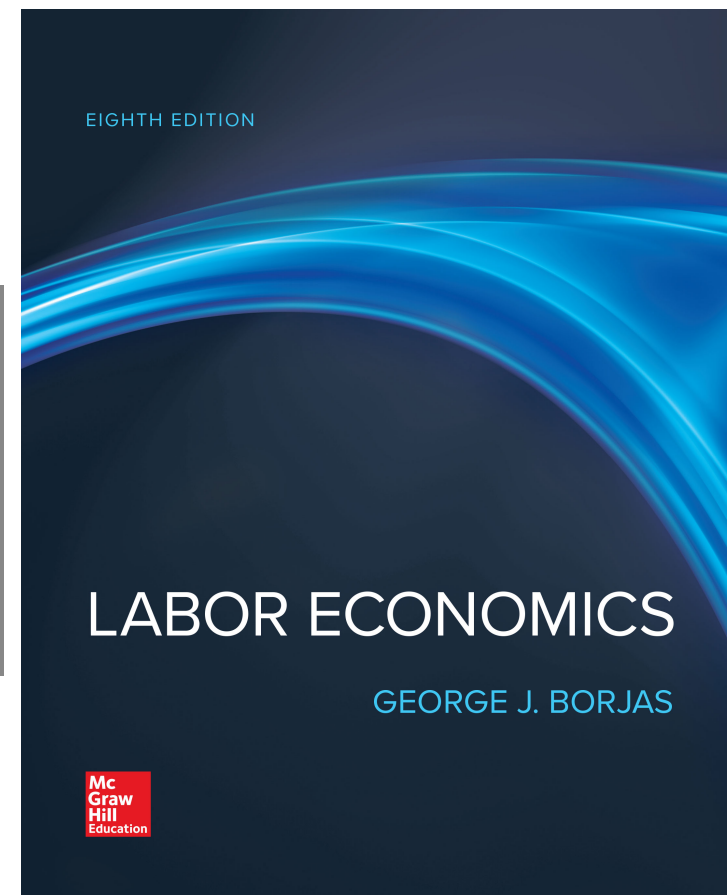

Introduction to Labor Economics

Chapter 1

Introduction to Labor Economics



Introduction of Labor Economics

- What is the impact of immigration on the wage and employment opportunities of native-born workers?
 - Do minimum wages increase the unemployment rate of less-skilled workers?
 - Are government subsidies of investments in human capital an effective way to improve the economic well-being of disadvantaged workers?
 - What is the economic impact of unions, both on their members and on the rest of the economy?
-

Labor Economics

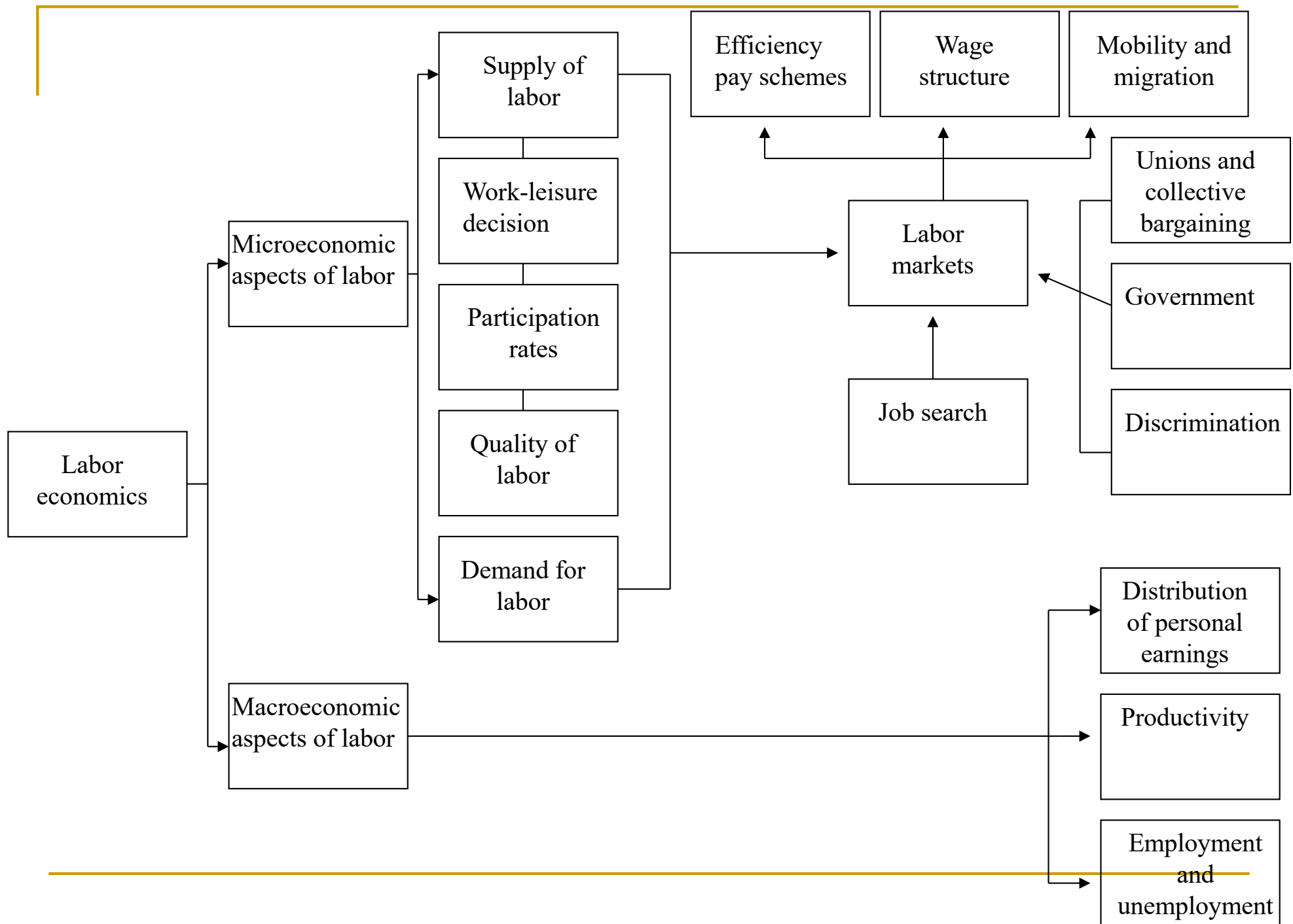
1. Introduction to labor economics
 2. Labor Supply
 3. Labor Demand
 4. Market Equilibrium
 5. Human Capital
 6. The Wage Structure and Compensating Wage Differentials
 7. Labor Mobility
-

8. Labor Market Discrimination

9. Labor Unions

10. Incentive Pay

11. Unemployment



Why Study Labor Economics

Human resources allocate substantial time and energy to labor markets.

Labor economics studies how labor markets work.

Labor economics helps us understand and address many social and economic problems facing modern societies.

Basics of the Labor Market

Participants are assigned motives:

- Workers look for the “best” job.
- Firms look for profits.
- Government uses regulation to achieve goals of public policy.
 - Minimum wages
 - Occupational safety

The Actors in the Labor Market

- Three leading actors in the labor market:
 - Workers
 - Firms
 - The Government



Three “Actors”

- Workers

- The most important actor; without workers, there is no “labor”.
 - Desire to maximize (i.e., to optimize by selecting the best option from available choices).
 - Supplies more time and effort for higher payoffs, causing an upward sloping labor supply curve.
-

Three “Actors”

- Firms

- Decide who to hire and fire.
 - Motivated to maximize profits.
 - Relationship between price of labor and the number of workers a firm is willing to hire generates the labor demand curve.
-

Three “Actors”

- Government

- Imposes taxes, regulations.
- Provides ground rules that guide exchanges made in labor markets.



Why Do We Need a Theory?

- Explain and understand how labor markets work.
 - Focus on the essential variables while leaving out other, less crucial, factors.
 - Create a model that helps explain the theory.
-

Positive vs. Normative

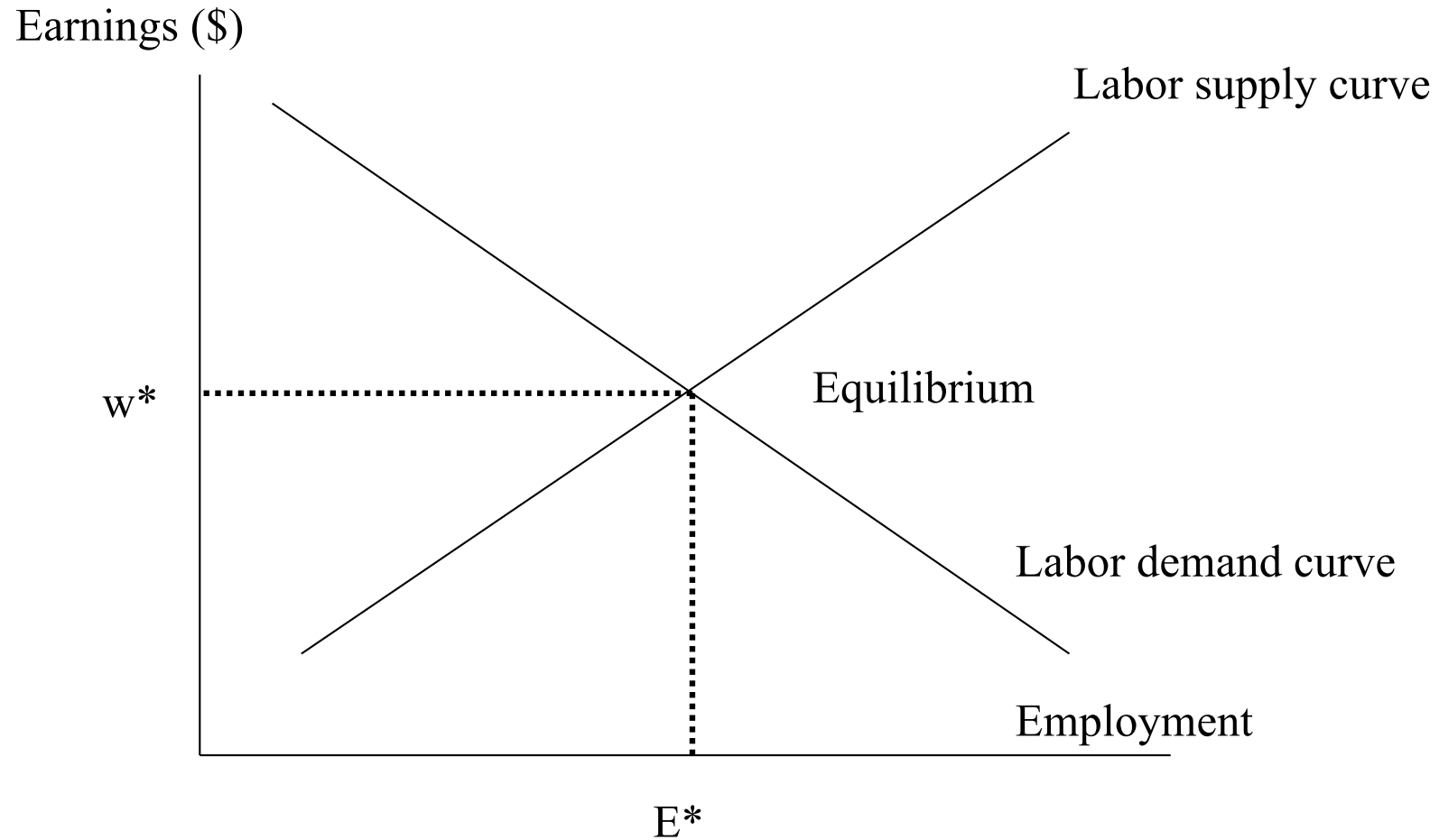
Positive economics

- ❑ Addresses the facts
- ❑ Focus on “what is”
- ❑ Questions answered with the tools of economists

Normative economics

- ❑ Addresses values
 - ❑ Focus on “what should be”
 - ❑ Requires judgments
-

Supply and Demand in the Labor Market



Labor supply curve

Workers will act in ways that maximize their well-being. Adding up the decisions of millions of workers generates **the economy's labor supply** not only in terms of the number of persons who enter the labor market, but also in terms of the quantity and quality of skills available to employers

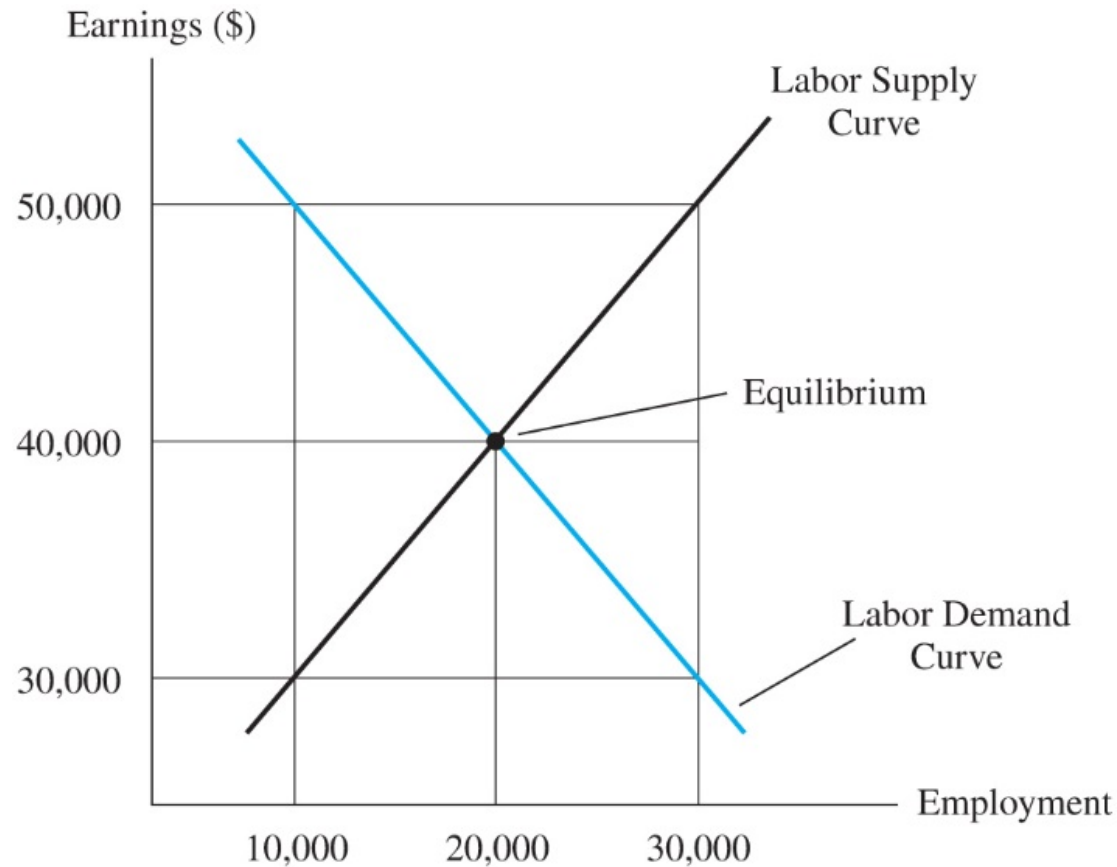
Labor demand curve

- The assumption that firms want to maximize profits implies that firms will want to hire many workers when labor is cheap but will refrain from hiring when labor is expensive
 - The relation between the price of labor and how many workers firms are willing to hire is summarized by the **downward-sloping labor demand curve**
-

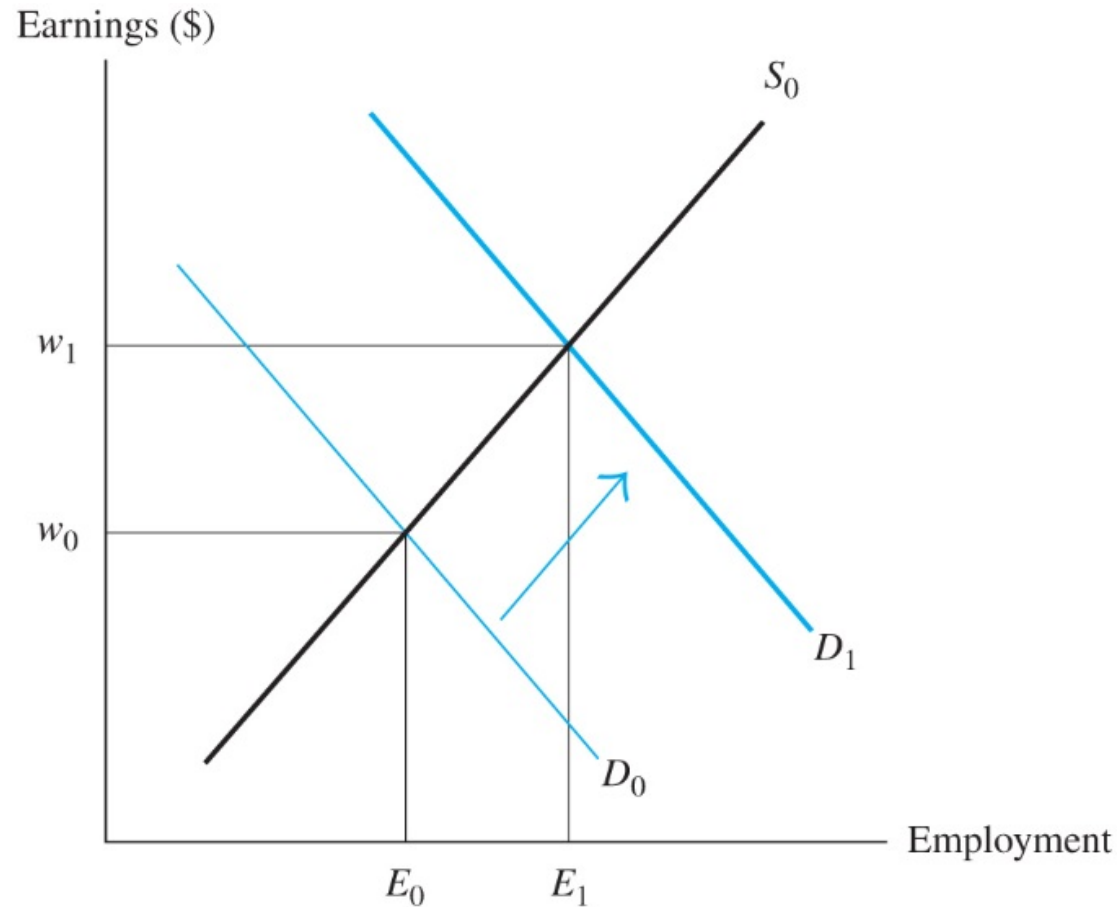
Equilibrium

- As workers search for jobs and firms search for workers, these conflicting desires are “balanced out” and labor market reaches an **equilibrium**
 - In free-market economy, equilibrium is attained when supply equals demand
-

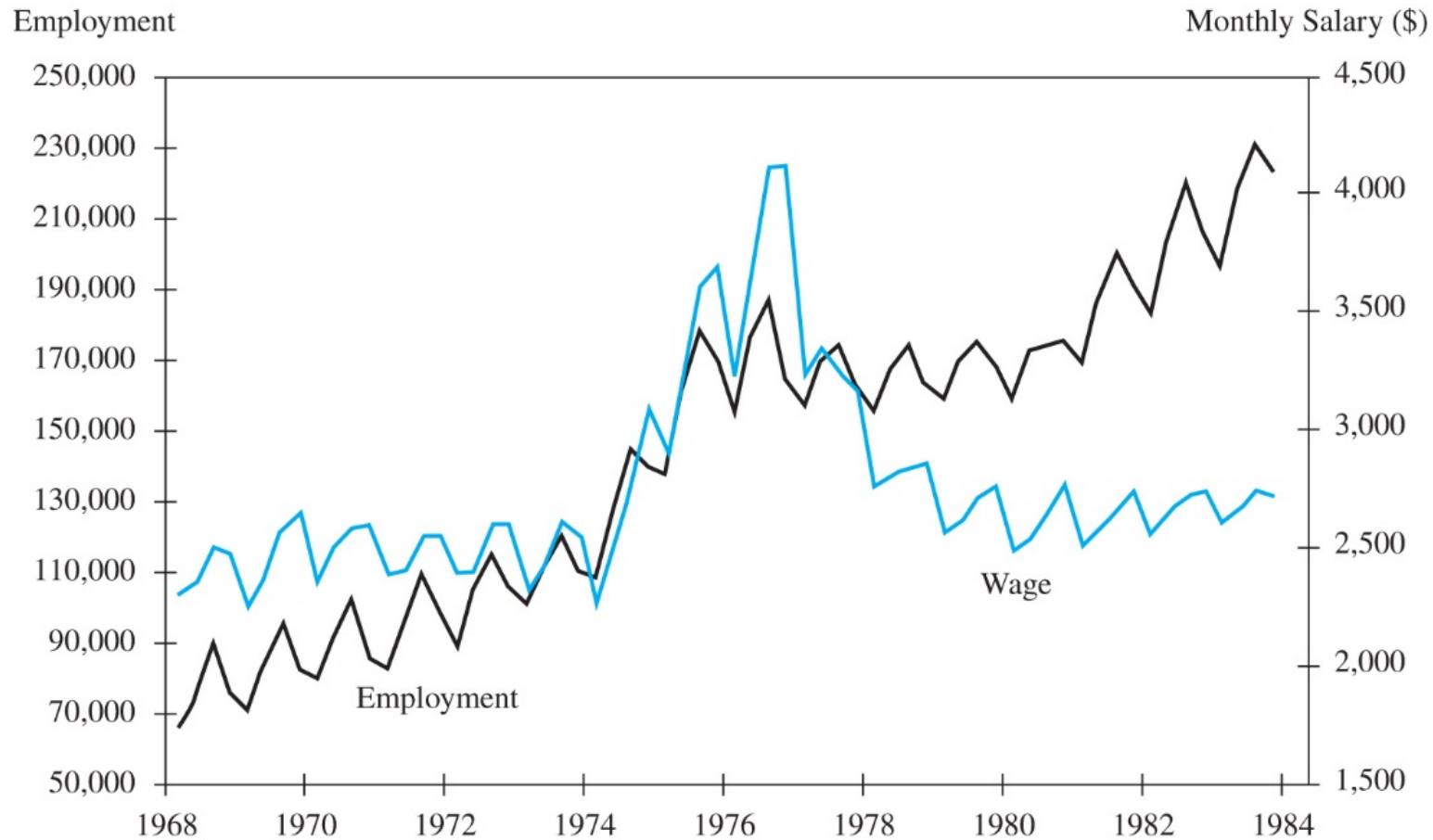
Supply and Demand in the Engineering Labor Market



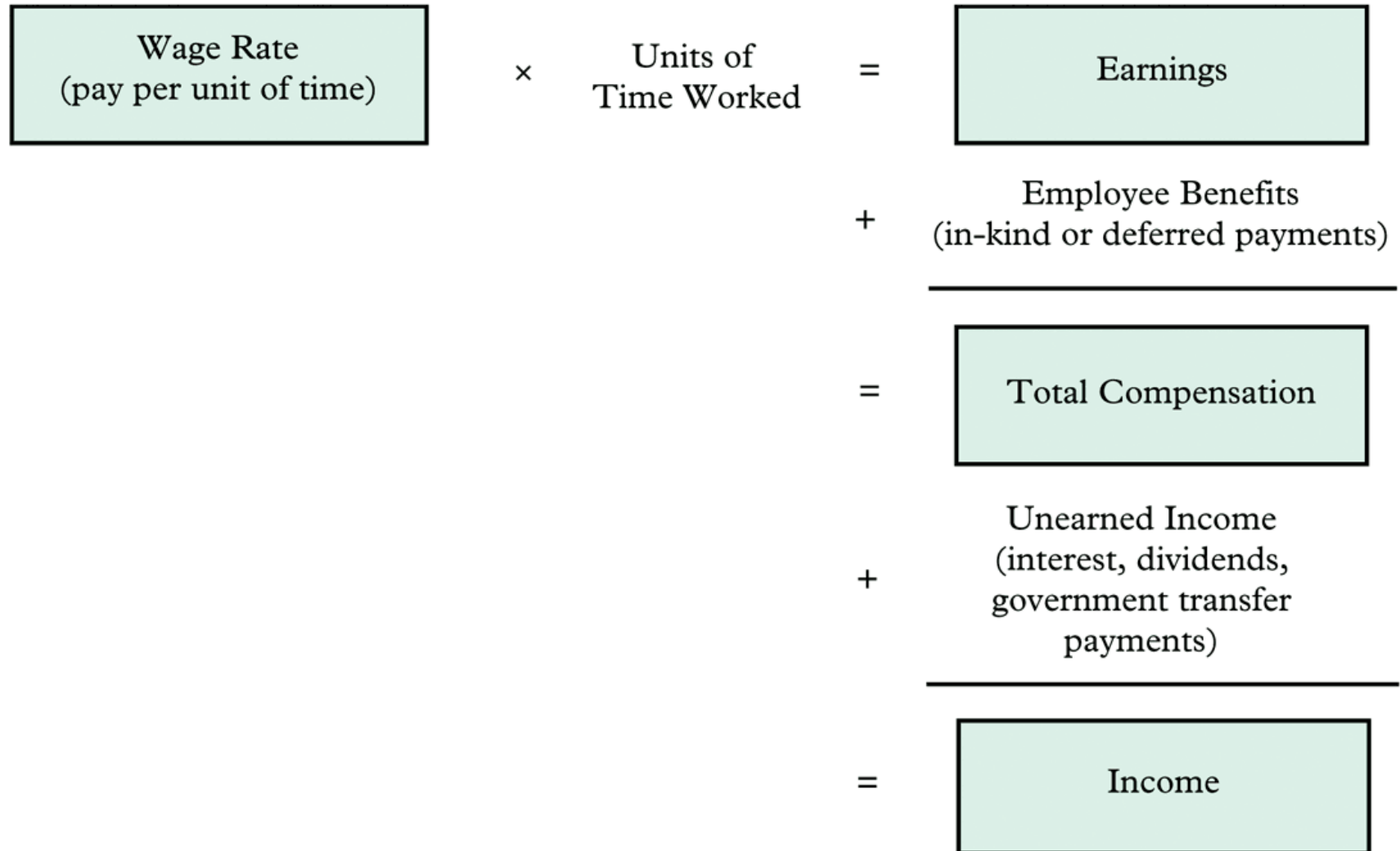
The Alaskan Labor Market and Construction of the Oil Pipeline



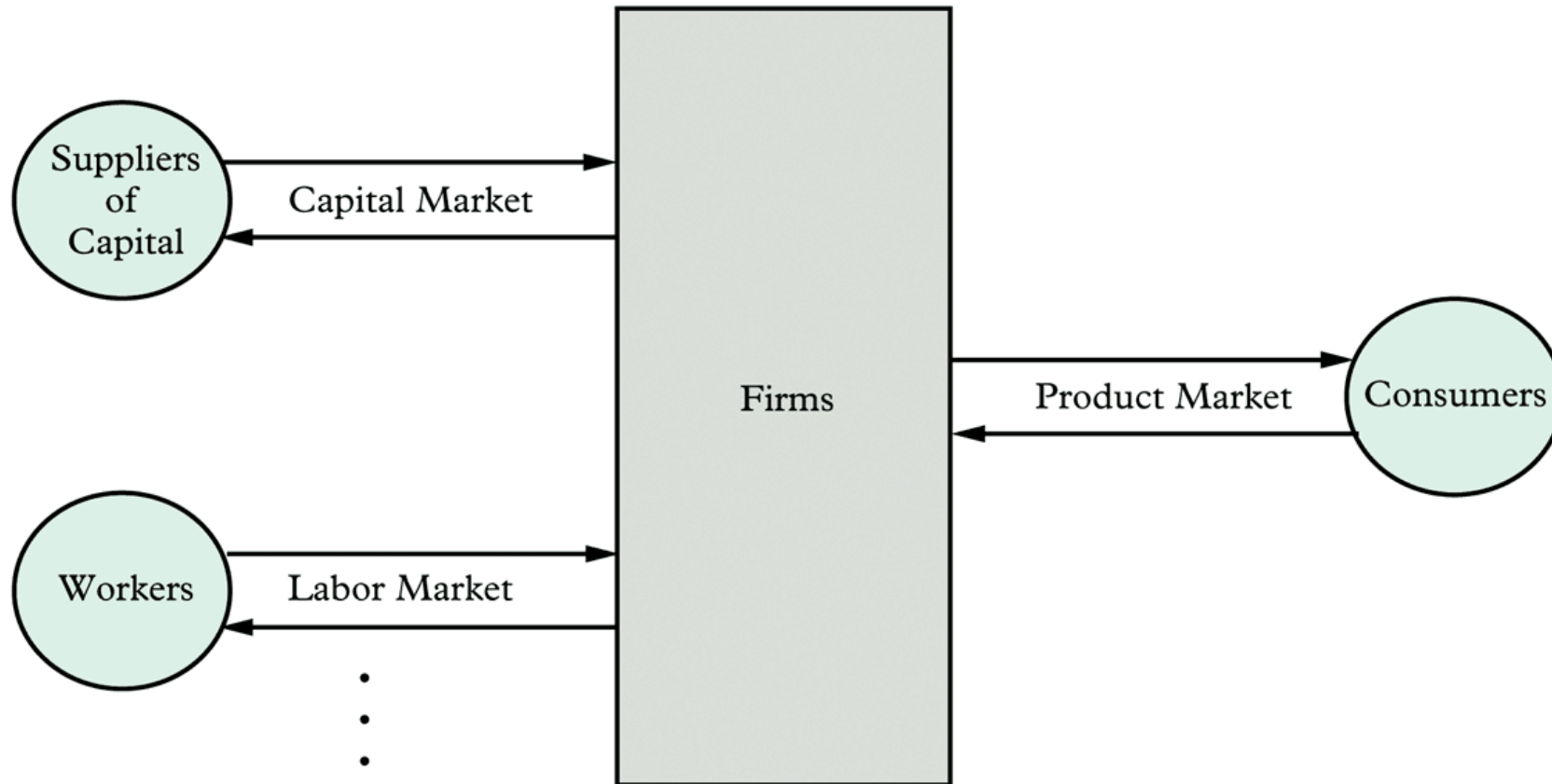
Wages and Employment in the Alaskan Labor Market, 1968-1984



Relationship between Wages, Earnings, Compensation and Income



The Markets in which Firms Must Operate



OUTCOMES

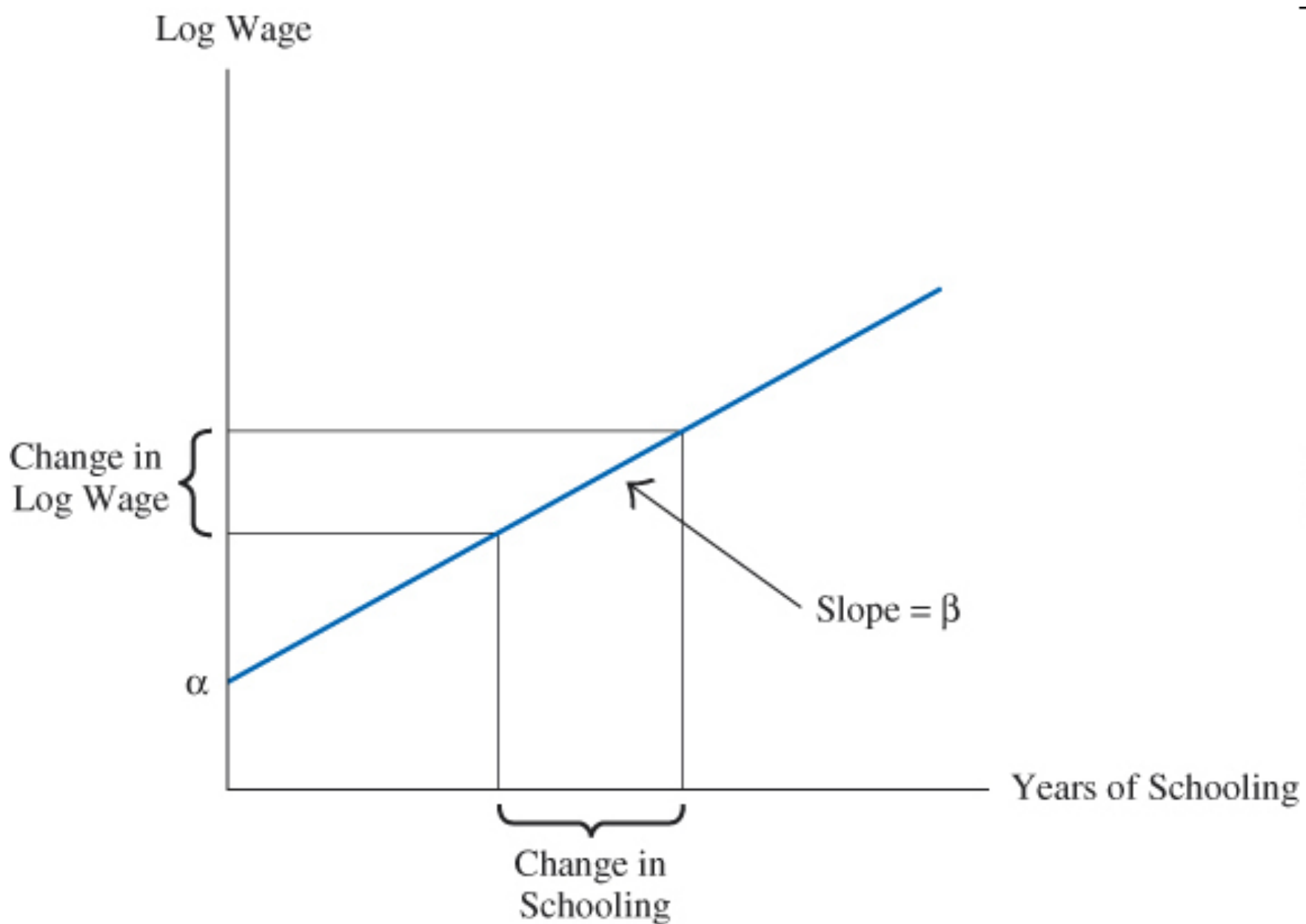
Terms of Employment }
Levels of Employment } for various occupational,
skill, and demographic groups

Tools for Labor Economics

- Graphic
 - Slope and Elasticity
 - Regression analysis
 - Basic Econometrics
 - Cross-sectional
 - Time Series
 - Panel
-

An introduction to Regression Analysis

- Labor economics makes extensive use of **econometrics**, the application of statistical techniques to study relationships in economic data
 - Example
 - Does going to school for one more year increase a worker's earnings?
-



$$\log w = \alpha + \beta school$$

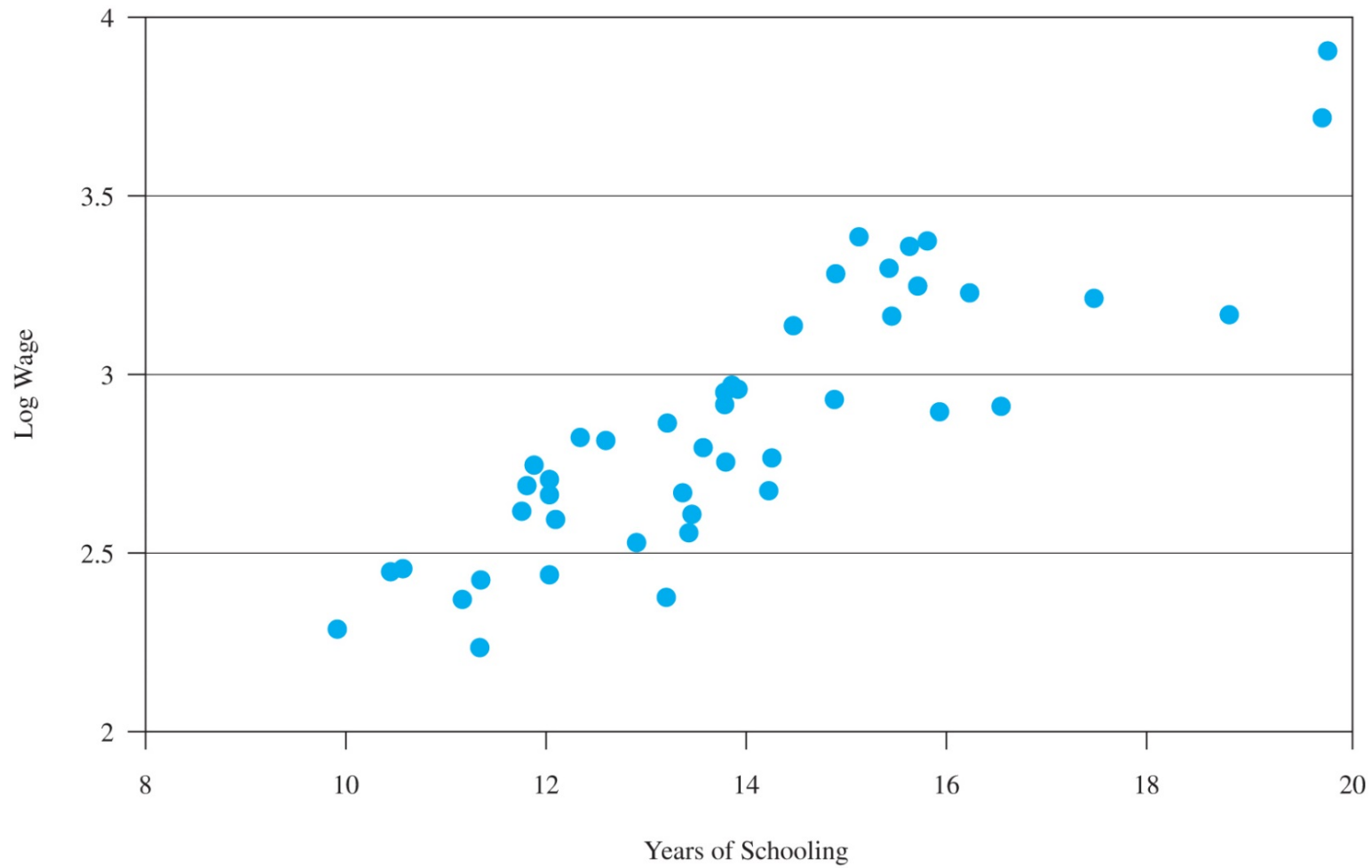
The regression line gives the relationship between the average log wage rate and the average years of schooling of workers across occupations

The slope of regression line gives the change in the log wage resulting from a one-year change in years in schooling

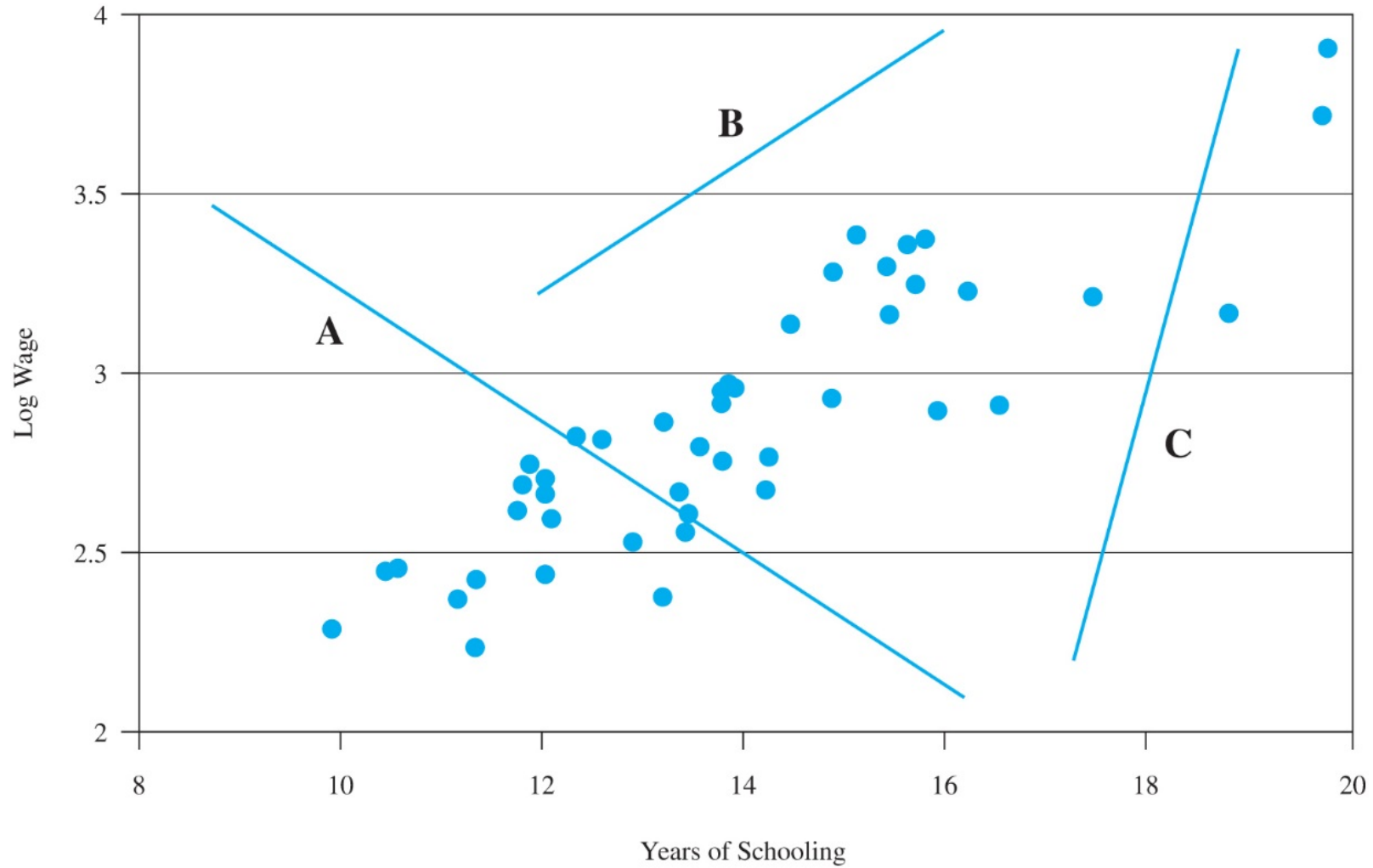
The intercept gives the log wage for an occupation where workers have zero years of schooling

Occupation	Mean Log Hourly Wage of Male Workers	Mean Years of Schooling for Male Workers	Female Share (%)
Administrators and officials, public administration	3.24	15.7	52.4
Other executives, administrators, and managers	3.29	14.9	42.0
Management-related occupations	3.16	15.4	59.4
Engineers	3.37	15.8	10.7
Mathematical and computer scientists	3.36	15.6	32.2
Natural scientists	3.22	17.4	34.2
Health diagnosing occupations	3.91	19.8	31.2
Health assessment and treating occupations	3.23	16.2	86.2
Teachers, college and university	3.17	18.8	44.7
Teachers, except college and university	2.92	16.5	75.8
Lawyers and judges	3.72	19.7	29.3
Other professional specialty occupations	2.90	15.9	54.0
Health technologists and technicians	2.76	14.2	83.1
Engineering and science technicians	2.97	13.8	26.0
Technicians, except health, engineering, and science	3.30	15.4	48.5
Supervisors and proprietors, sales occupations	2.96	13.9	37.6
Sales representatives, finance and business services	3.39	15.1	44.7
Sales representatives, commodities, except retail	3.14	14.4	25.4
Sales workers, retail and personal services	2.61	13.4	64.0
Sales-related occupations	2.93	14.8	72.4
Supervisors, administrative support	2.94	13.8	61.2
Computer equipment operators	2.91	13.8	57.1
Secretaries, stenographers, and typists	2.75	13.8	98.0
Financial records, processing occupations	2.67	14.2	92.9
Mail and message distributing	2.87	13.2	41.9
Other administrative support occupations, including clerical	2.66	13.4	79.2
Private household service occupations	2.46	10.6	96.0
Protective service occupations	2.80	13.6	18.7
Food service occupations	2.23	11.4	60.0
Health service occupations	2.38	13.2	89.1
Cleaning and building service occupations	2.37	11.2	48.2
Personal service occupations	2.55	13.4	80.4
Mechanics and repairers	2.81	12.6	5.2
Construction trades	2.74	11.9	2.4
Other precision production occupations	2.82	12.3	22.5
Machine operators and tenders, except precision	2.62	11.8	35.2
Fabricators, assemblers, inspectors, and samplers	2.65	12.0	36.2
Motor vehicle operators	2.59	12.1	12.7
Other transportation occupations and material moving	2.68	11.8	6.3
Construction laborer	2.44	10.5	3.9
Freight, stock, and material handlers	2.44	12.0	30.4
Other handlers, equipment cleaners, and laborers	2.42	11.3	28.0
Farm operators and managers	2.52	12.9	20.5
Farm workers and related occupations	2.29	9.9	18.5
Forestry and fishing occupations	2.70	12.0	3.7

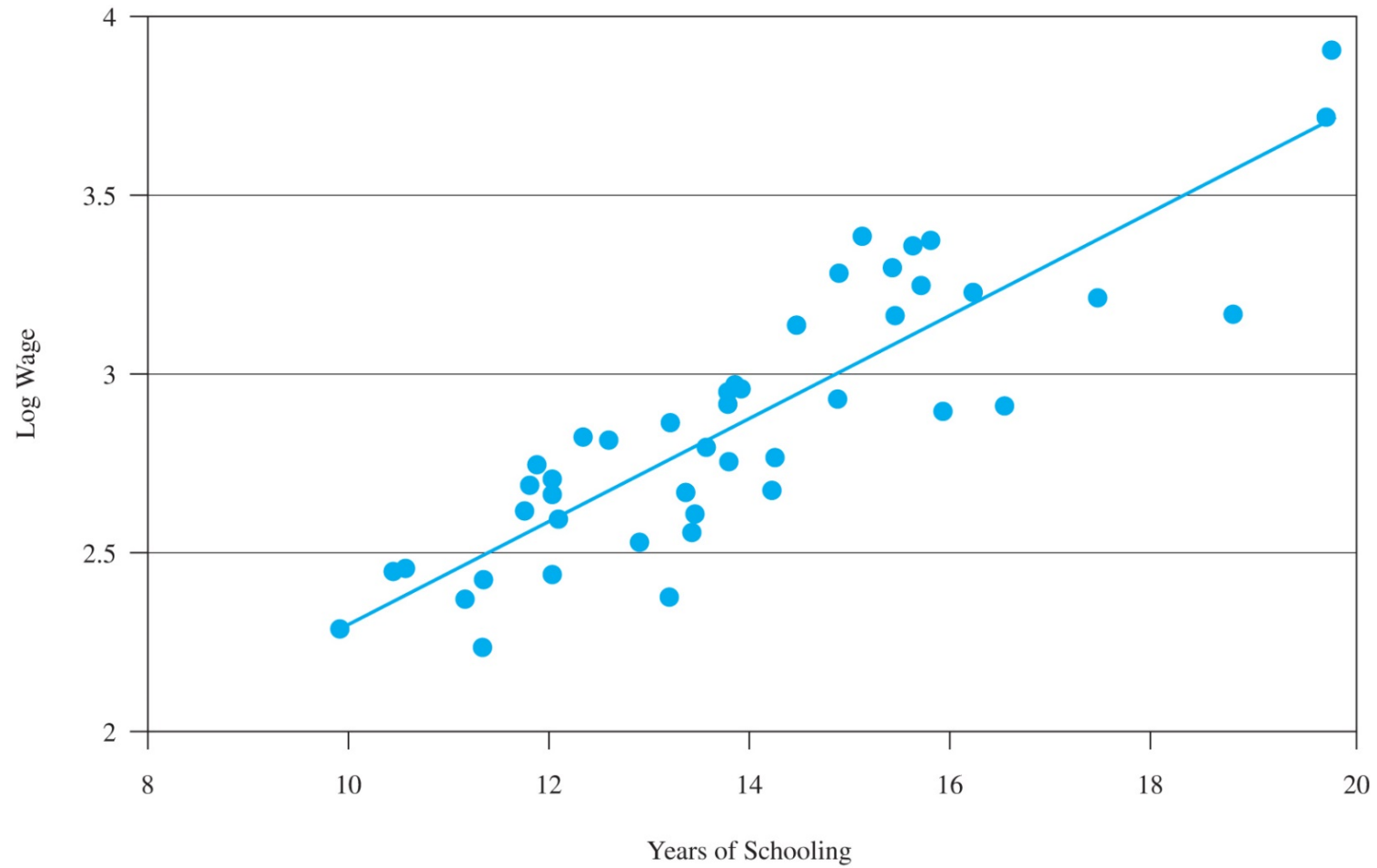
Scatter Diagram: Wages and Schooling by Occupation, 2001



Choosing Among Lines Summarizing Trends in Data



The Best-Fit Regression Line



$$\log w = 0.869 + 0.143school$$

- The estimated slope is positive, indicating that the average log wage is indeed higher in occupations where workers are more educated
 - The 0.143 slope implies that each one-year increase in the mean schooling of workers in an occupation raises the wage by approximately 14.3 percent
-

Multiple Regression

Extending regression analysis to include multiple independent variables

Each estimated coefficient shows the impact of a particular variable on the dependent variable, other things constant

Standard errors of the regression coefficients are used to evaluate significance of the relations between each particular variable and the dependent variable

Multiple regression

$$\log w = \alpha + \beta school + \gamma female$$

$$\log w = 0.924 + 0.150school + 0.03 female$$

female = the percent of workers in an occupation that are women

- A one year increase in the occupation's mean schooling raises weekly earnings by approximately 15 percent
 - We find that the percentage female in the occupation has a statistically significant negative impact on the low wage
 - Men who work in predominantly female occupations earn less than men who work in predominantly male occupations even if both occupations have the same mean schooling
 - 10 percentage point increase in the female share lowers the average earnings of an occupation by 3 percent
-

Web-Links

- **INTERNATIONAL LABOUR ORGANIZATION (ILO)**
(<http://www.ilo.org>)
- **THAILAND MINISTRY OF LABOUR** (<http://www.mol.go.th/en>)
- **BUREAU OF LABOR STATISTICS (BLS)**

The Bureau of Labor Statistics (BLS) is the government agency responsible for calculating the monthly unemployment rate as well as the Consumer Price Index. Their website contains a lot of information on many aspects of the U.S. labor market, as well as comparable international statistics. The BLS also publishes a detailed description of how it defines and measures the concepts of labor force and unemployment. The BLS is officially a part of the U.S. Department of Labor, which also collects detailed information on various aspects of the state-run unemployment insurance program.

- **BUREAU OF THE CENSUS**

The Bureau of the Census reports detailed demographic and labor market information, including historical data by race and gender, mobility/migration patterns, and health insurance coverage. The Bureau of the Census also publishes annually the Statistical Abstract of the United States , which contains data on a wide variety of topics including many aspects of the U.S. economy.

IMMIGRATION

- [Bureau of Citizenship and Immigration Services \(BCIS\)](http://www.uscis.gov/graphics/index.htm) (<http://www.uscis.gov/graphics/index.htm>). The website of the Bureau of Citizenship and Immigration Services (BCIS) contains information on U.S. immigration policy.
 - [Department of Homeland Security](http://www.dhs.gov/ximngtn/statistics/) (<http://www.dhs.gov/ximngtn/statistics/>). The Department of Homeland Security reports detailed statistics on immigration to the United States.
 - [International Trade Administration](http://www.ita.doc.gov) (<http://www.ita.doc.gov>). The International Trade Administration publishes detailed information on trade patterns and regulations.
 - [Citizen and Immigration Canada](http://www.cic.gc.ca/english/index.asp) (<http://www.cic.gc.ca/english/index.asp>) The website of Citizen and Immigration Canada has the "test" that allows a potential applicant to determine if he or she qualifies for a visa.
 - [Australia's Department of Immigration and Multicultural and Indigenous Affairs](http://www.immi.gov.au/) (<http://www.immi.gov.au/>) The website of Australia 's Department of Immigration and Multicultural and Indigenous Affairs has the similar test required by Australian authorities.
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EDUCATION

- [The U.S. Department of Education](http://www.ed.gov/index.jsp) (<http://www.ed.gov/index.jsp>). The U.S. Department of Education's website provides an essential introduction to many of the education programs in the United States.
 - [General Education Development \(GED\)](http://www.acenet.edu//AM/Template.cfm?Section=Home) (<http://www.acenet.edu//AM/Template.cfm?Section=Home>). The American Council on Education gives useful information to prospective takers of the General Education Development (GED) exam.
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POVERTY / MINIMUM WAGES / DEVELOPMENT

- [The Green Book](http://waysandmeans.house.gov/Documents.asp?section-5813) (<http://waysandmeans.house.gov/Documents.asp?section-5813>). The *Green Book*, also known as the *Overview of Entitlement Programs*, is published by the Committee on Ways and Means, U.S. House of Representatives. Each chapter describes a particular type of public assistance program.
 - [The Employment Policies Institute](http://www.epionline.org) (<http://www.epionline.org>)
 - [The United Nations Development Programme](http://www.undp.org/) (<http://www.undp.org/>). The United Nations Development Programme maintains an extensive database describing income inequality in many countries.
 - [OECD](http://www.oecd.org/) (<http://www.oecd.org/>)
The OECD reports unemployment statistics for many advanced economies and frequently publishes reports comparing the unemployment situation in different countries.
 - [Population Resource Center](http://www.prcdc.org/) (<http://www.prcdc.org/>)
Many organizations are concerned with the politically charged issues of population growth and control. The Population Resource Center is an organization that limits itself to promoting the use of accurate data for objective analysis.
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NON-PROFIT ORGANIZATIONS

- The National Bureau of Economic Research (NBER)
(<http://www.nber.org>). The National Bureau of Economic Research (NBER) publishes a working paper series that represents the frontier of empirical research in economics. Their website also contains a number of widely used data sets. The working papers and data can be accessed and downloaded by students and faculty at many universities.
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INTERNATIONAL ORGANIZATIONS

- [The Organization for Economic Cooperation and Development \(OECD\)](http://www.oecd.org) (<http://www.oecd.org>).

The Organization for Economic Cooperation and Development (OECD) reports statistics on labor market conditions in many advanced economies.

- [IZA](http://www.iza.org) (<http://www.iza.org>).

IZA is a Bonn-based research institute that conducts labor research. Their discussion paper series provides up-to-date research on labor issues in many countries.
