

Economics: An Umbrella Field for Undergraduate Research in STEM fields & the Social Sciences

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Theoretical Traditions in Economics

- There are at least seven different theoretical traditions in economics: Classical, Marxist, Neoclassical, Keynesian, Developmentalist, Austrian, Institutional, Evolutionary, and Ecological
- These doctrines are different according to their methodological approach, not their assumed ideological positions or policy prescriptions
- The Neoclassical tradition is predominant in education and research, and it is considered the “Mainstream”

Emergence and Logic of the Neoclassical Approach

- Neoclassical economics builds upon the utilitarian logic of political philosophers of the 19th century.
- It gained importance between academic economists during the 1900s by seemingly offering an ideological alternative to Marxist political movements in Europe and the USA.
- It entered the mainstream of policy making after the economic depression of 1929-1932, and it further engaged with private sector (manufacturing and finance) after WWII.
- Contrary to popular opinion, economics, neoclassical economics in particular, does not directly engage with money or money issues

Primacy of the Method

- In Neoclassical economics all the social agents (producers, consumers, government, etc.) are rational, they want to optimize their objective(s) (profit, utility, re-election, etc.) subject to restrictions (money, time, skills, etc.).
- This logic builds upon calculus to develop abstract quantitative models of the functioning of entire social systems (general equilibrium). The models can “experiment” with different structures and shocks, incorporate dynamic elements, and offer “quantitative restrictions to the facts”
- The neoclassical economic models are deductive, logically built upon simplifying assumptions, and offer a “hard” testing framework for a high diversity of empirical models

Neoclassical Empirical Models

- In neoclassical economics there are a series of purely abstract core models of social interaction (general equilibrium), not oriented to testing or analyzing any “real world” question or hypothesis, but to logically prove the existence of self-organized social systems comprising decentralized agents guided by their own interests.
- The applied models are derived from the core models and include ad-hoc hypothesis that resemble real world observations and/or problems.

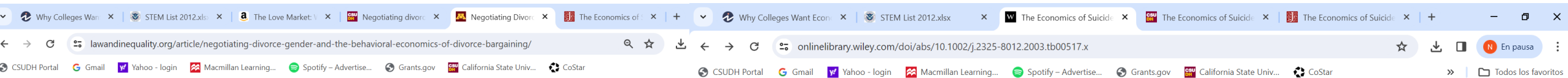
Neoclassical Empirical Models

- The models (core or applied) cannot be rejected by the degree of realism of their assumptions but by their logical development (mathematics), and by their predicting ability (adjustment to data).
- Econometrics is the use of statistics to test the validity of the applied models, and to make predictions or simulations

Diversity of Topics: generalizability of the method

- The applied models can be about any hypothesis, problem or idea that a scholar wants to explore. They do not have to necessarily “solve problems”, but merely describe situations where there is interaction between individual agents (markets, politics, warfare, sports, computer games, etc.), and eventually test their corresponding output hypotheses.
- The models are therefore about social issues in the widest possible sense of the term

Diversity of Topics: generalizability of the method



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Article

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Dave E. Marcotte

First published: 01 January 2003 | <https://doi.org/10.1002/j.2325-8012.2003.tb00517.x> | Citations: 11

For Margot: September 12, 1969-February 3, 2002.

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Abstract



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CHAPTER 9

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The Love Market: What You Need To Know About How We Date, Mate and Marry Paperback – International Edition, February 4, 2014
by Marina Adshade (Author)
4.1 ★★★★★ 120 ratings

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Nestor Garza, Colin Lizieri

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Nestor Garza and Colin Lizieri View all authors and affiliations

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Abstract 摘要

In this paper, we focus on the role and economic effect of land ownership and land monopoly in emerging

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Economics in Graduate Programs

B.A. and B.Sc. in Economics are a STEM subject in USA Higher Education Classification:

45 45.0603 Econometrics and Quantitative Economics

The program that focuses on the systematic study of mathematical and statistical analysis of economic phenomena and problems. Includes instruction in economic statistics, optimization theory, cost/benefit analysis, price theory, economic modeling, and economic forecasting and evaluation.

<https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?cipid=88580&y=55>

GRE mean in Quantitative Reasoning (selected fields 2019-2022)

Field	GRE mean
Mathematical Sciences	164
Computer & Information Science	162
Physics & Astronomy	161
Materials Engineering	162
Mechanical Engineering	160
Electrical Engineering	161
Economics	161
Political Sciences	154
Sociology	151

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bls.gov/ooh/life-physical-and-social-science/economists.htm#tab-5

Pay

About this section ?

The median annual wage for economists was \$113,940 in May 2022. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$62,480, and the highest 10 percent earned more than \$207,230.

In May 2022, the median annual wages for economists in the top industries in which they worked were as follows:

Management, scientific, and technical consulting services	\$130,160
Federal government, excluding postal service	130,100
Scientific research and development services	106,720
Local government, excluding education and hospitals	86,910
State government, excluding education and hospitals	80,520

Most economists work full time, and some work more than 40 hours per week.

[How to Become One](#) [Job Outlook](#)

Economists
Median annual wages, May 2022

Economists	\$113,940
Social scientists and related workers	\$84,000
Total, all occupations	\$46,310

Note: All Occupations includes all occupations in the U.S. Economy.
Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics

SUGGESTED CITATION:
Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Economists.

Economists : Occupational Outl

bls.gov/ooh/life-physical-and-social-science/economists.htm

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Economists

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Summary What They Do Work Environment How to Become One Pay Job Outlook State & Area Data Similar Occupations More Info

Summary

Quick Facts: Economists	
2022 Median Pay ?	\$113,940 per year \$54.78 per hour
Typical Entry-Level Education ?	Master's degree
Work Experience in a Related Occupation ?	None
On-the-job Training ?	None
Number of Jobs, 2022 ?	17,600
Job Outlook, 2022-32 ?	6% (Faster than average)
Employment Change, 2022-32 ?	1,100

[What Economists Do](#)

Economists collect, research, summarize, and evaluate issues related to monetary and financial policy. They also collect and analyze statistical data.



Final Remarks: Economics, an umbrella field for undergraduate research in STEM & Social Sciences

- The mainstream of economics research and education comprises neoclassical models with a high degree of generalizability in terms of topics, and clear protocols to interpret what is considered a valid approach to scientific knowledge, data analysis, and prediction
- This approach and the skills and instincts it instills in students, are useful as a pathway to graduate programs in both, STEM fields and the social sciences
- Economics also performs well (above average) in the labor markets