

Electric Power Industry

Economic Analysis of



March 05 2005

How Does This Industry Affect You?

New York's Power blackout in 2003 estimated
cost: \$500M

[CBSBlackout.m3u](#)

Objectives

- Introduction - Alabama Power
- Electric Power Industry Analysis
- Alabama Power Analysis
- Forecasts, Projections and Recommendations
- Economic Environment
- Macro Impact - Alabama Power and Electric Power Industry

What is Alabama Power?



David Monroe



- Alabama Power



- Georgia Power



- Gulf Power



- Mississippi Power



- Savannah Electric



- Southern Company GAS



- Southern Nuclear



- Southern Power





Alabama Power

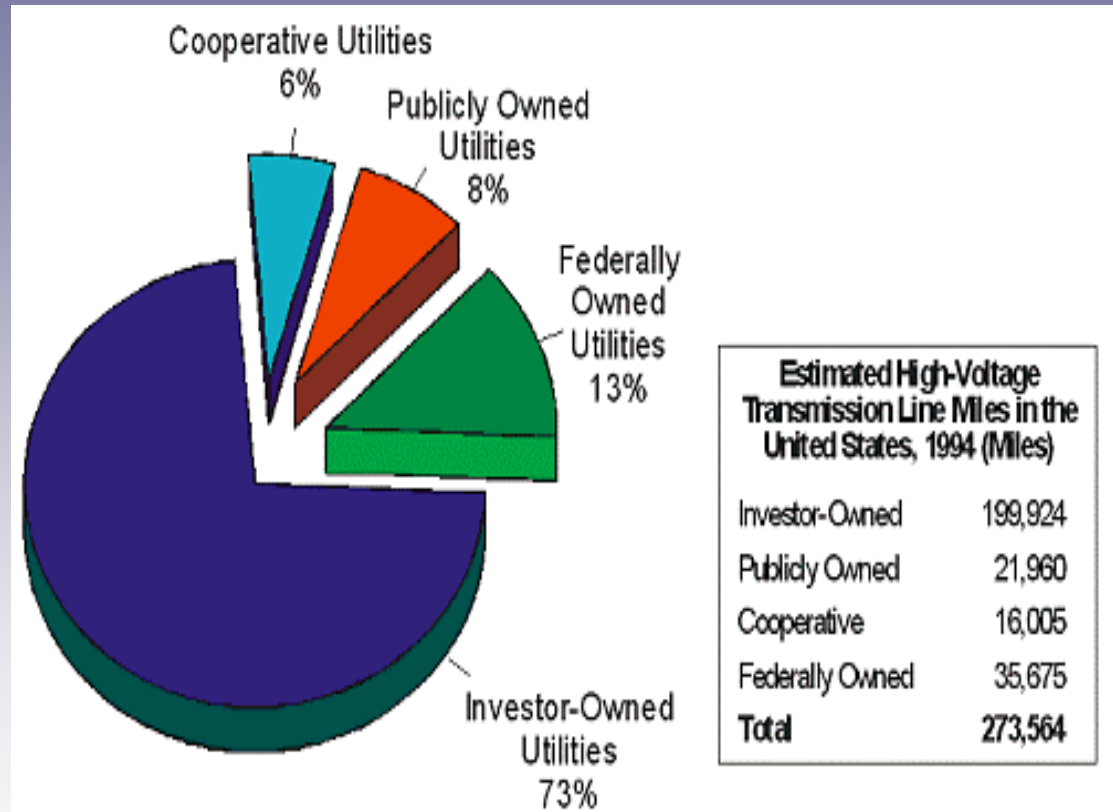
- Founded in 1906
- Subsidiary of Southern Company
- 78,000 miles of power lines
- Customers throughout 44,500 square miles
- Uses coal, hydro, natural gas and nuclear sources
- 81 electric generating plants located at 24 facilities in Alabama

Electric Power Industry Analysis

Victor McCree

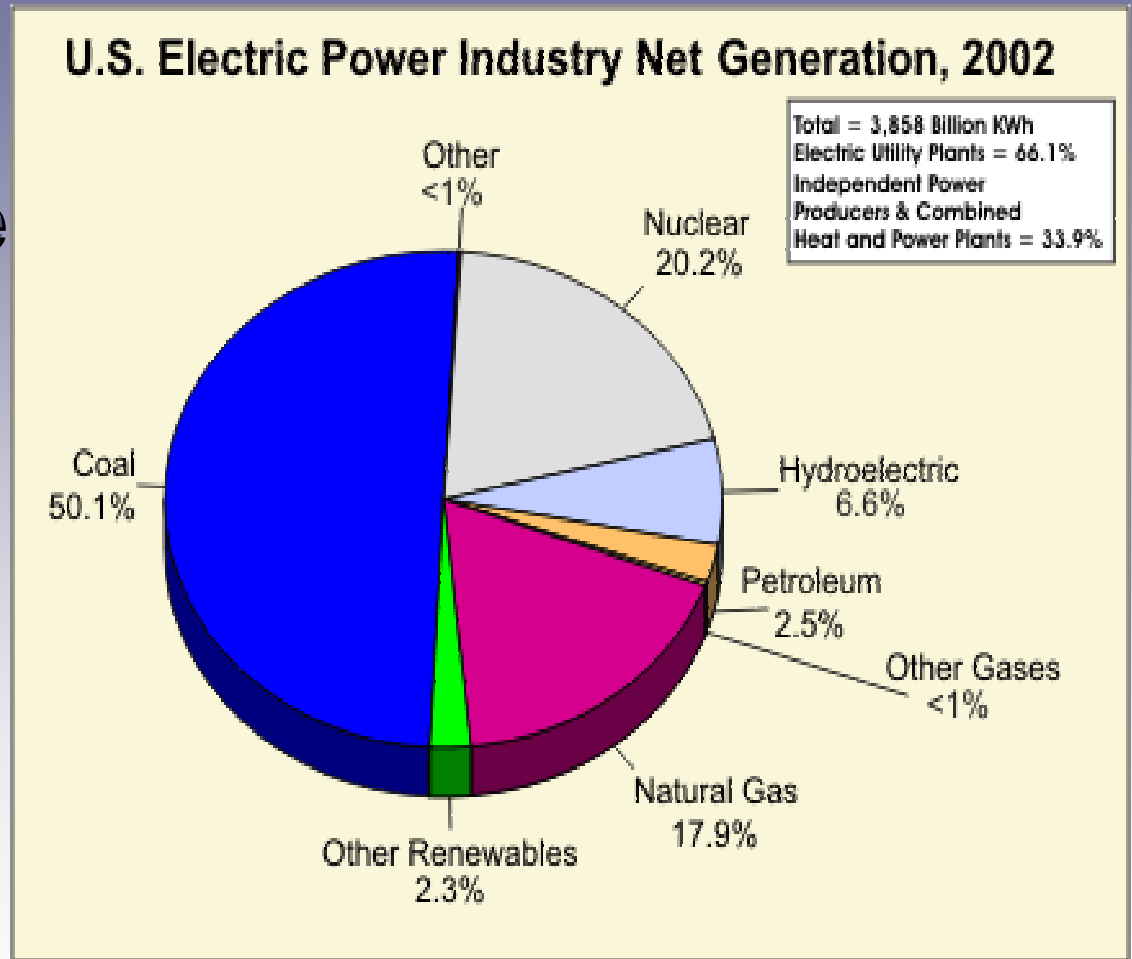
Description of Industry

- Traditional Electric Utilities, Power Marketers and Non-Utility Power Producers
- Federal, Local and State Regulators

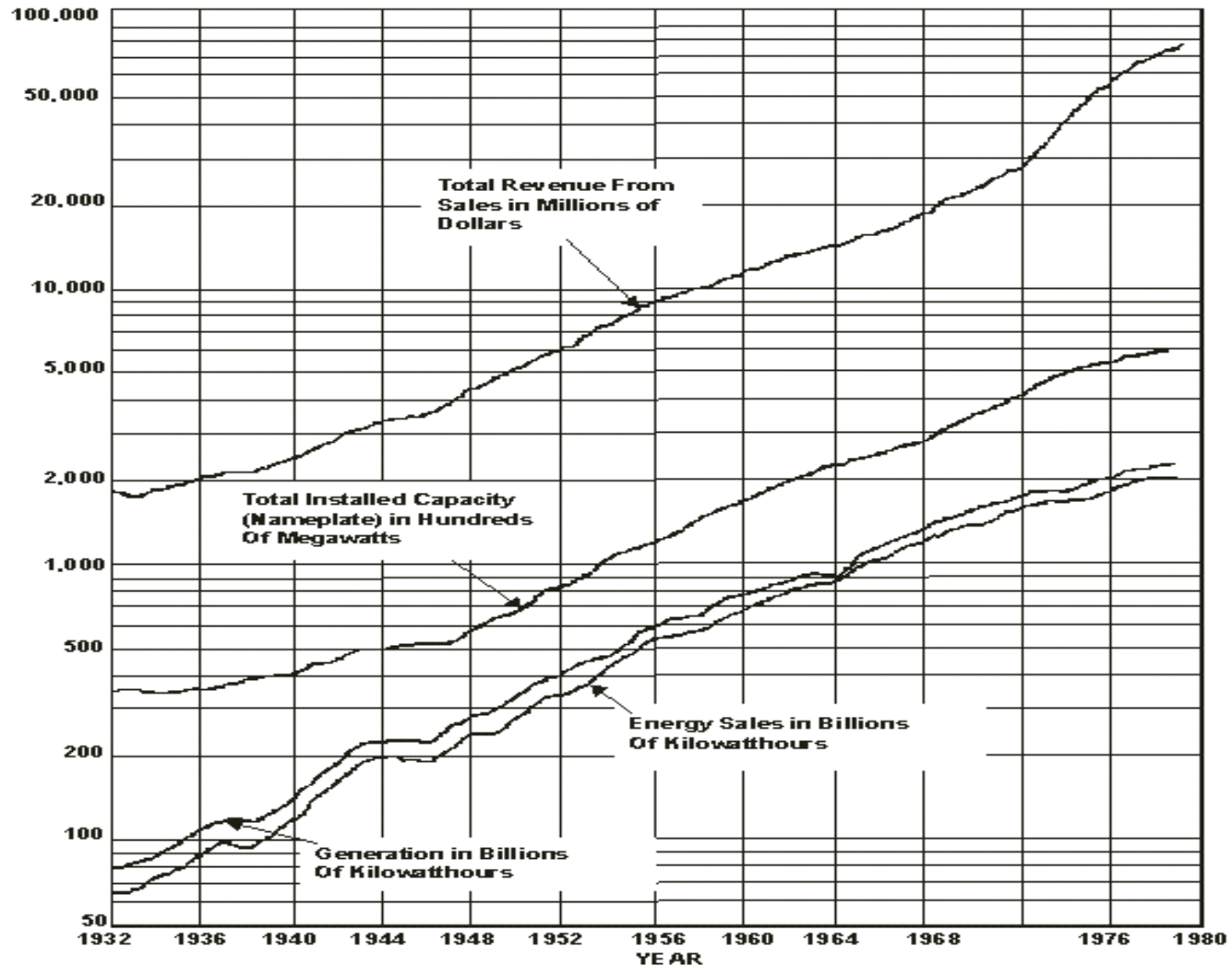


Description of Industry

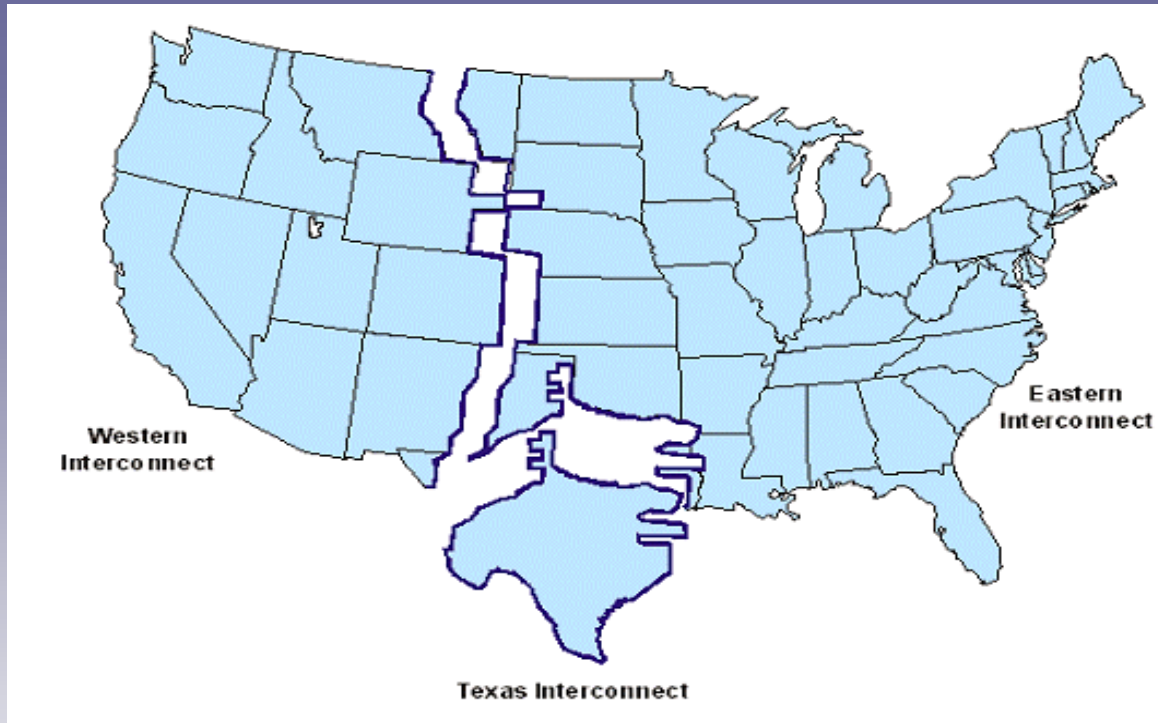
- Fossil, Nuclear and Renewable Generators



Total Annual Electricity Generation



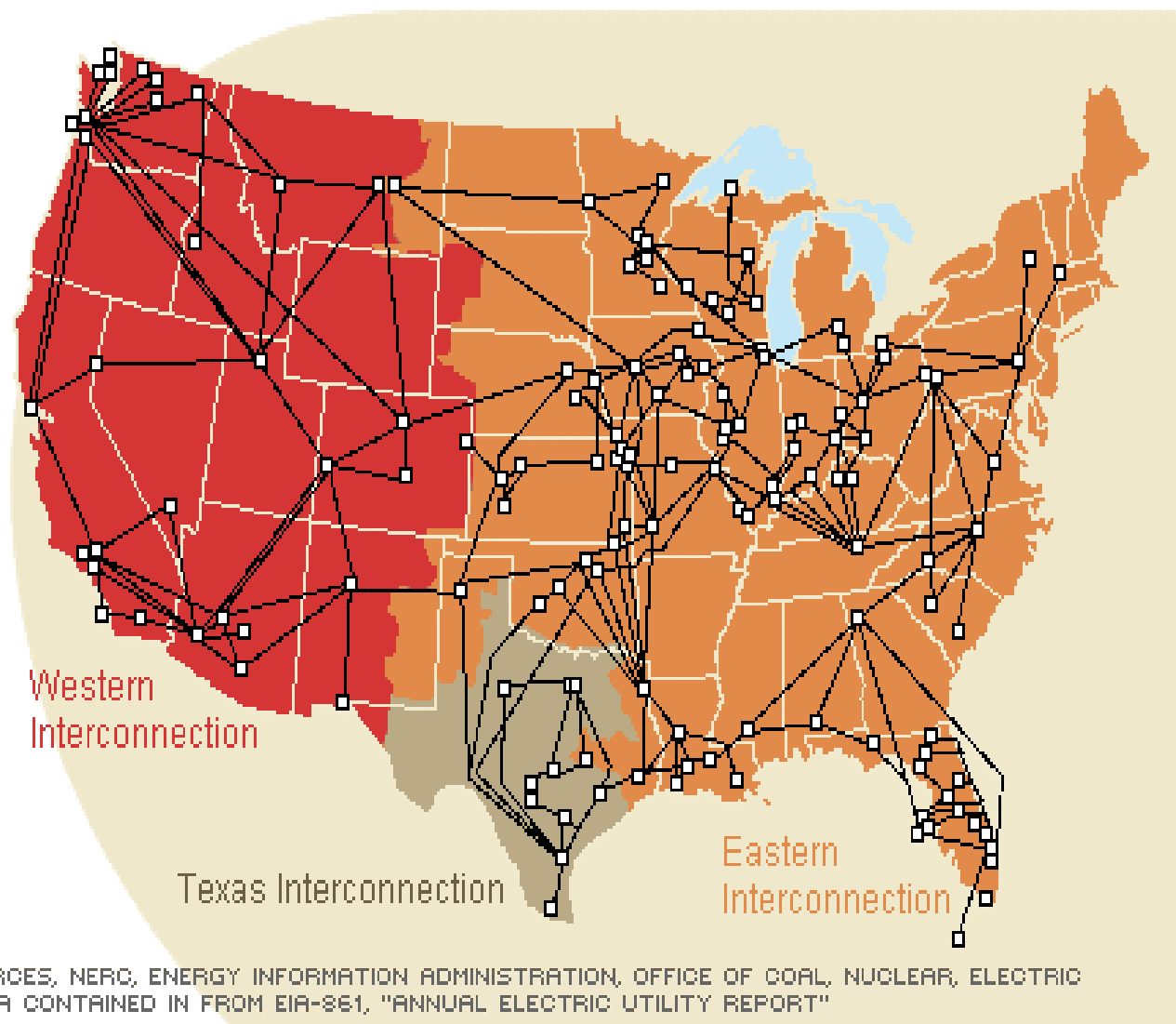
Market Structure



- Monopolistically Competitive
 - Local Monopolies
 - None Control Major Portion of Market

This map shows the division of the three main power grids in the contiguous United States and the roughly 150 Control Area Operators that balance the amount of power generated and consumed. Unlike fuels such as coal or gas, electricity is hard to store. It is generated as it is used. These computerized centers dispatch generators as needed to maintain the balance.

The grid systems in Hawaii and Alaska are much different and not connected to the grids in the lower 48 states.



SOURCES: DISTRIBUTED ENERGY RESOURCES, NERC, ENERGY INFORMATION ADMINISTRATION, OFFICE OF COAL, NUCLEAR, ELECTRIC AND ALTERNATE FUELS. BASED ON DATA CONTAINED IN FROM EIA-861, "ANNUAL ELECTRIC UTILITY REPORT"

Market Structure (continued)

- Degree of Integration
 - Less Regulated/More Competition

- Barriers to Entry
 - Large Capital Costs
 - Fuel Costs
 - Competition

Size of Electric Power Industry Relative to Economy

- Accounted for Approximately 4% of GDP in 2002
 - Importance to Economy
 - One of the Largest Sectors in the U.S.
- Surpasses Telecommunications, Airline and Gas Industry

Demand Factors

- Weather – Biggest Factor Affecting Sales (Demand) and Supply
- Economy – Affects the Demand and Supply for Industrial Customers
- Alternative Energy Sources – Influences Demand and Sales Growth
- Emissions – Ozone and NO_x Restrictions Limits Construction and Operation

Production and Cost Issues

- Environmental – Big Cost Influencer for Utilities that Use Mostly Coal-based Generators (like Southern Company)
- Fuel Costs – Fossil Costs Tripled in Past 2 Years
 - Coal and Coke Supply Shortages
 - Sudden Rise in Costs of Natural Gas
- Nuclear
 - Low Fuel (Uranium) Costs/Competitive Operating Costs
 - Improved Plant Safety and Reliability

Production and Cost Issues (continued)

- New Generating Plants
- Aging of Existing Plants
- Population Growth

Non-Economic Factors

- Alternative Sources
- New Technologies
- Deregulated Markets

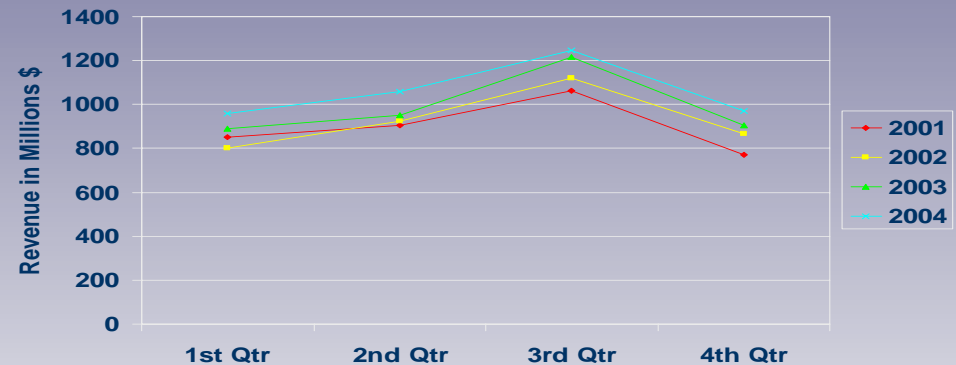


Firm Analysis

Brendan Flahive

Demand Factors

- Favorable weather conditions: warmer summers and colder winters



- Strength of business and economic conditions in service area, i.e. auto industry growth
- Price Elasticity of Demand

Demand Factors

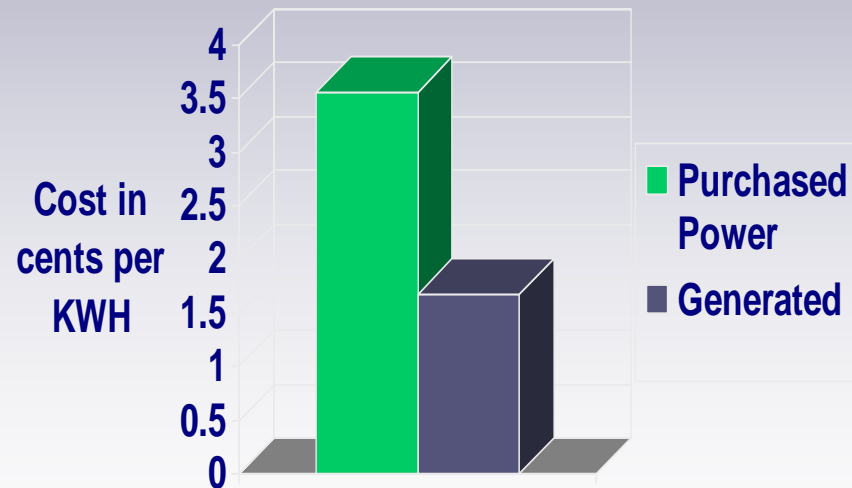
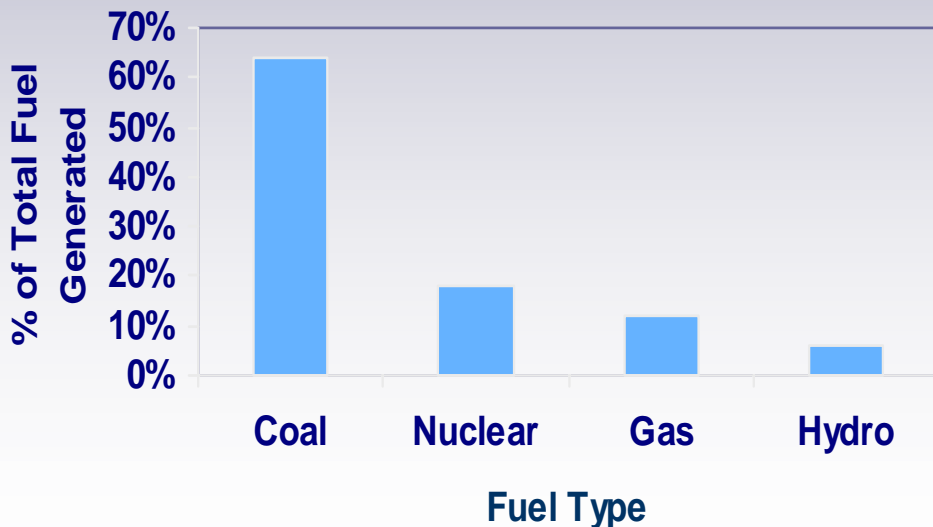
(continued)

- Energy conservation practiced by customers
- New energy contracts with neighboring utilities
- Competition

Production and Cost Issues

- Fuel costs were 36% of 2003 total expenses
- Purchased Power costs from affiliates and non-affiliates totaled 11%

Sources of Generation



Production and Cost Issues (continued)

- Inflation creates economic loss due to the recovery of historical investment costs that have less purchasing power
- Plant maintenance and operations
 - LTSA with GE
- Environmental compliance

Market Power

- Size and location
- Diversified customer base (<10% same)
 - 80% retail and 20% wholesale
- Alabama PSC sets retail prices
- Highly Reliable Service Provider
 - 99.97% service availability in 2003

Top 5 Alabama Utilities Ranked by Retail Sales in 2002

1. Alabama Power	52,073,190
2. Tennessee Valley Authority	5,073,906
3. City of Huntsville	4,729,117
4. Decatur Utilities	1,440,271
5. City of Florence	1,168,312

Note: Figures are in kilowatt-hours (millions)

**ALABAMA POWER provides 62.7% of
all the electricity in the state of Alabama!**

Who are Alabama Power's customers?

Retail

■ Industrial	21,593,000
■ Residential	16,960,000
■ Commercial	13,452,000
■ Other Retail	203,000

Wholesale

■ Non-affiliates	17,086,000
■ Affiliates	9,422,000

Note: 2003 sales in kilowatt-hours (millions)

Strategies

- Maintain residential pricing at 15% below the national average
- Economic and Community Development
- Build new plants to reduce purchased power costs
- Brand Marketing via Alabama Power Foundation

Goals

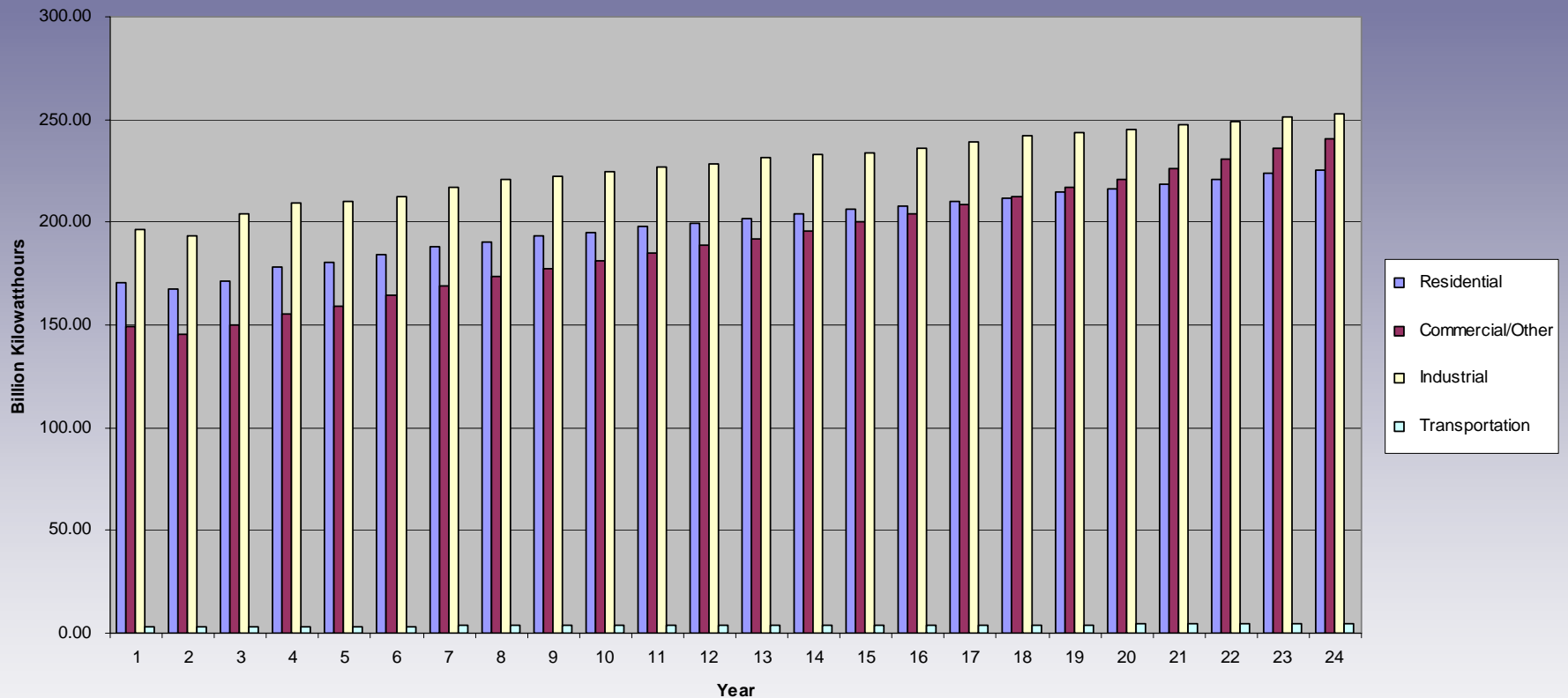
- Grow earnings per share 5% per year
- Environmental compliance and customer satisfaction industry leader
- Maintain a stable regulatory environment
- Contain costs while growing energy sales and recover costs related to growing demand and environmental standards

Forecasts, Projections and Recommendations

Magda Ramos

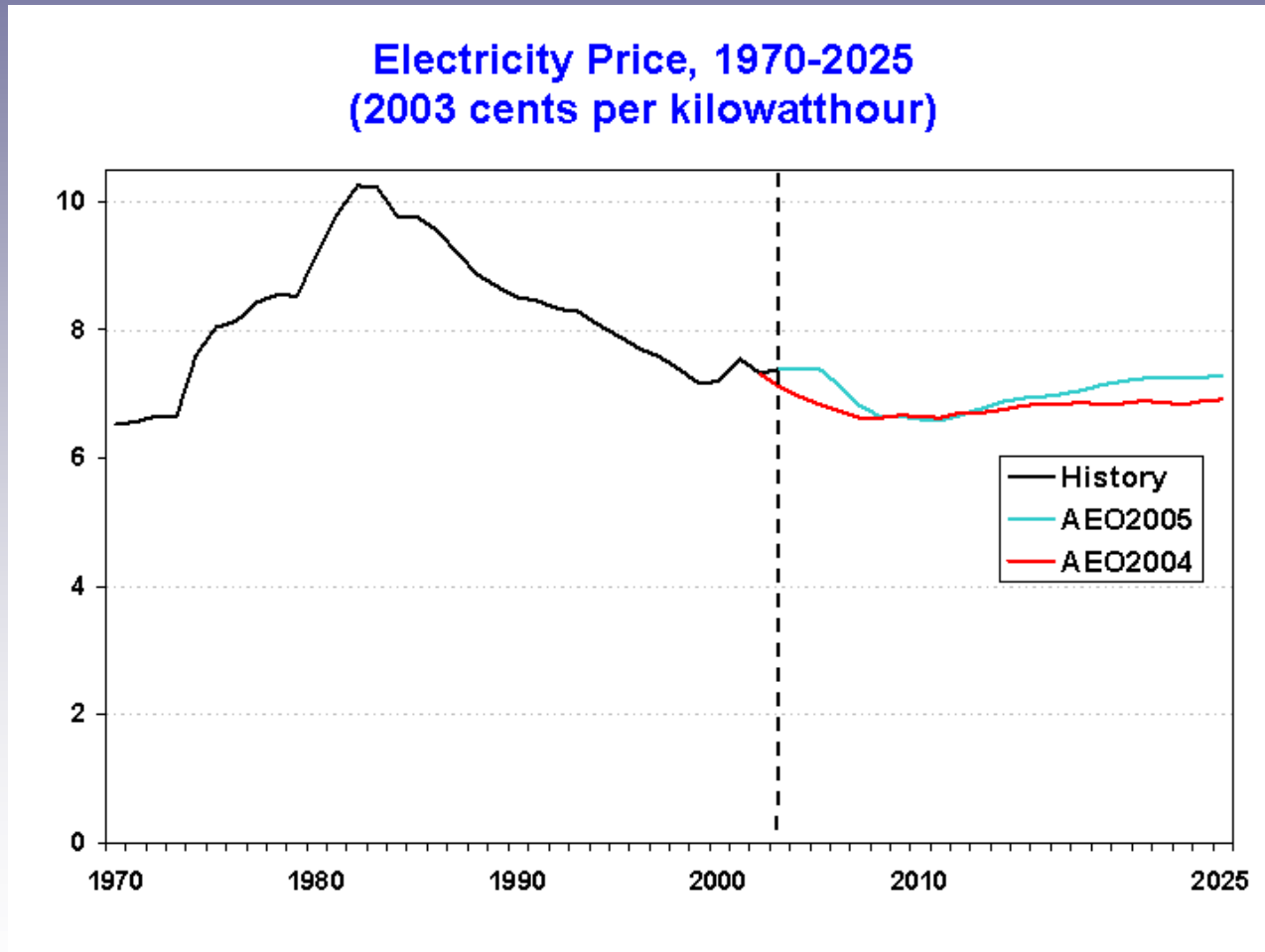
Electricity Demand Forecast

Electricity Demand

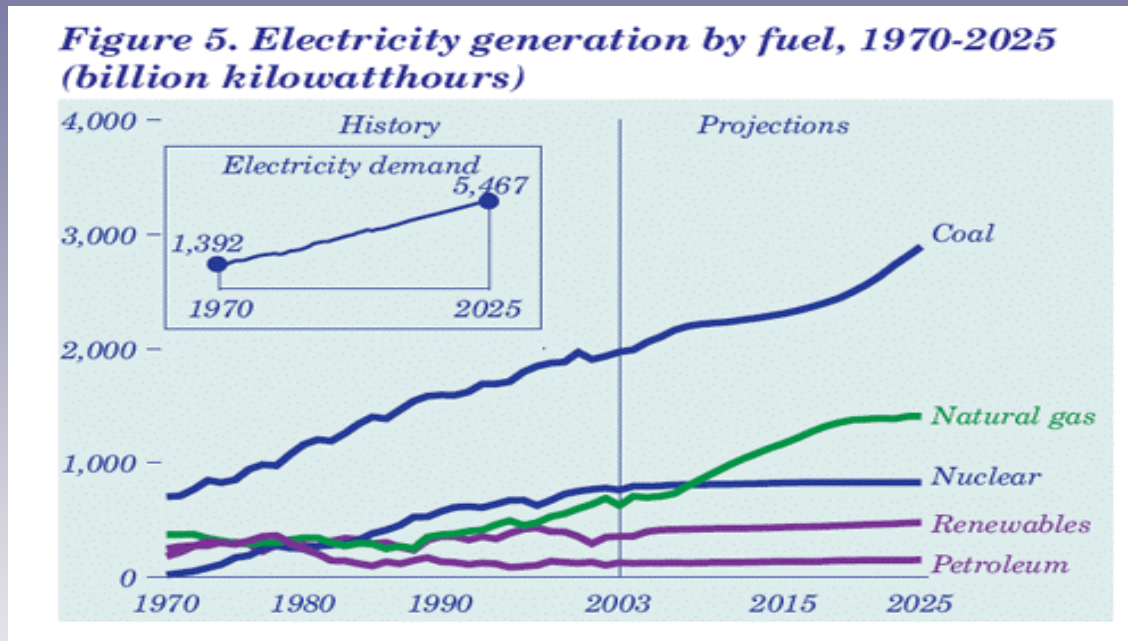


Industrial sector will experience the highest demand increase rates

Electricity Price Projections

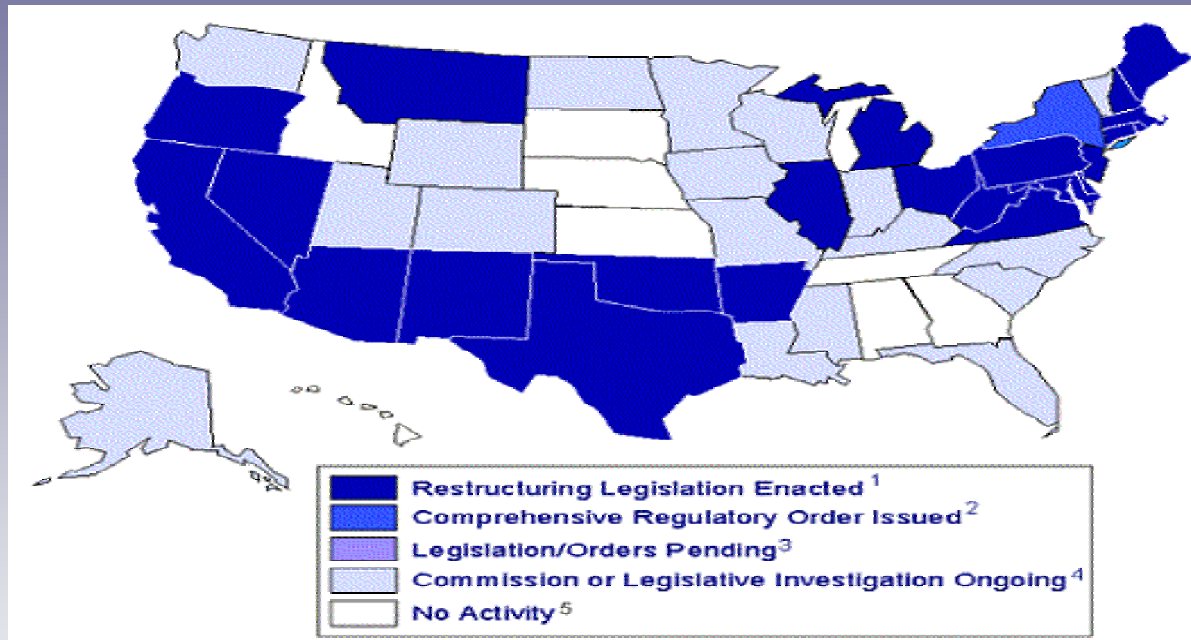


Electricity by Fuel Forecast



Supply of coal and natural gas based electricity will experience the fastest growth due to government incentives

Alabama's Price Regulation Status



Alabama currently regulates market prices and a change in this policy is not foreseeable in the near future

Limited Profit Growth

Recommendations for Alabama Power (due to regulation)

- Reduce production costs
- Attract more strategic customers to the region
- Focus marketing and infrastructure strategies on high growth potential customers
- Value-added product development

Alabama Power

Business Outlook Data Profile

- Actively working with the Alabama Chamber of Commerce to attract large corporations
- Transmission grid ownership allows revenue from ancillary services

Alabama Power

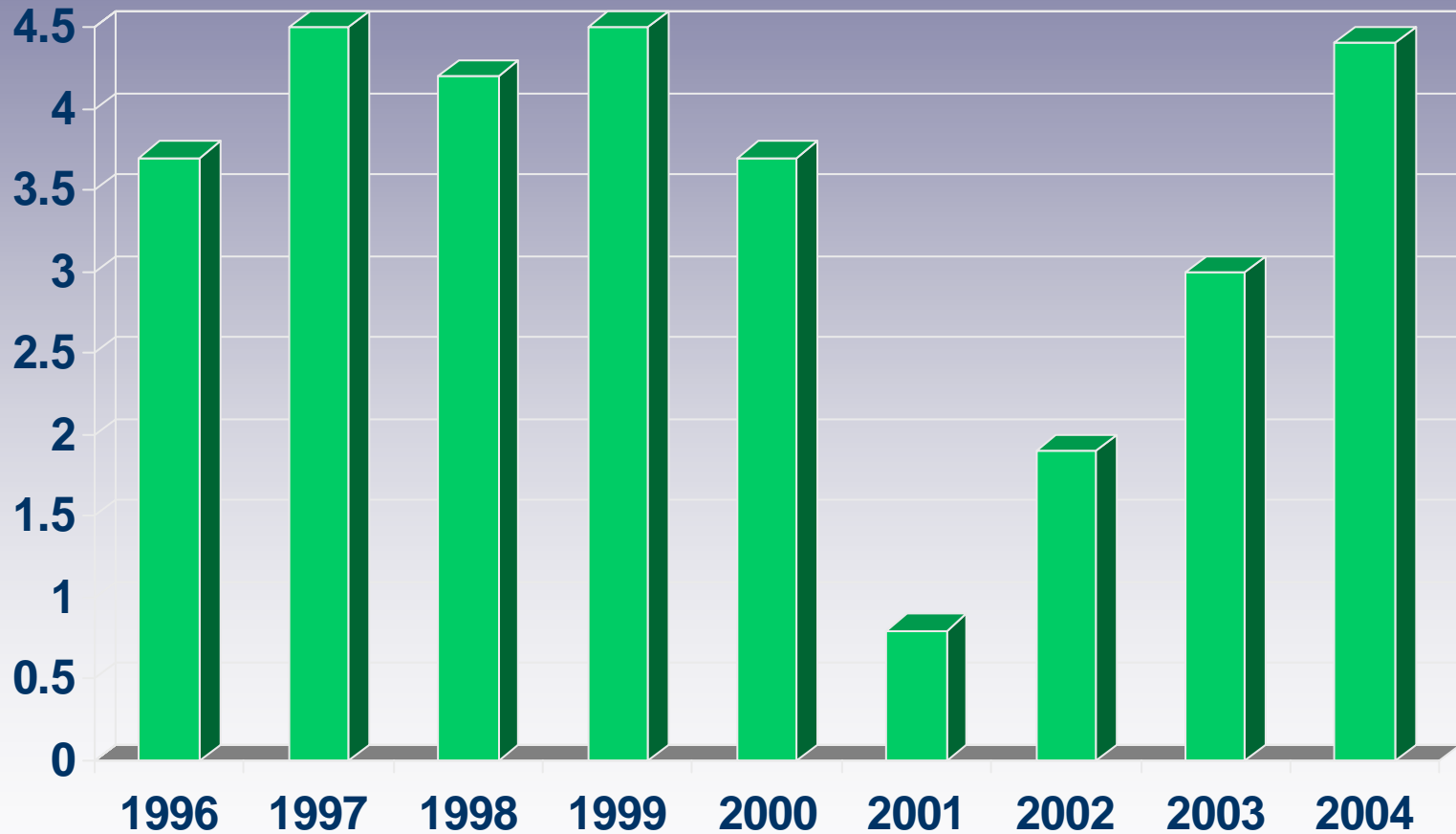
Business Outlook Data Profile

- 2004 industrial sales rebounded 5.8% due to growth in metal, chemical and paper sectors
- Retail sales are projected to grow about 1.7% on average during 2005 through 2009

Economic Environment

John Blackwelder

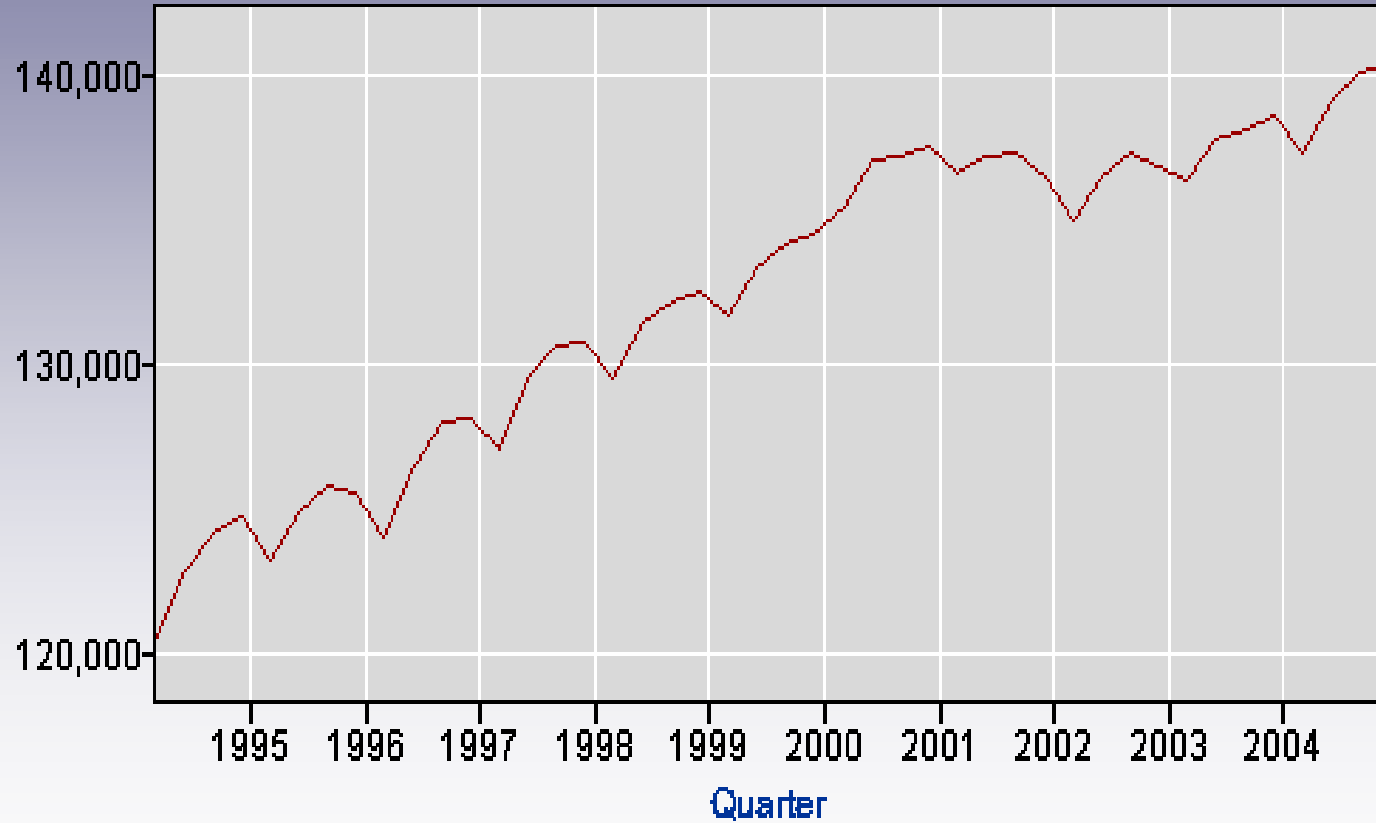
Real GDP Percent Change from Preceding Year



Source: Bureau of Economic Analysis

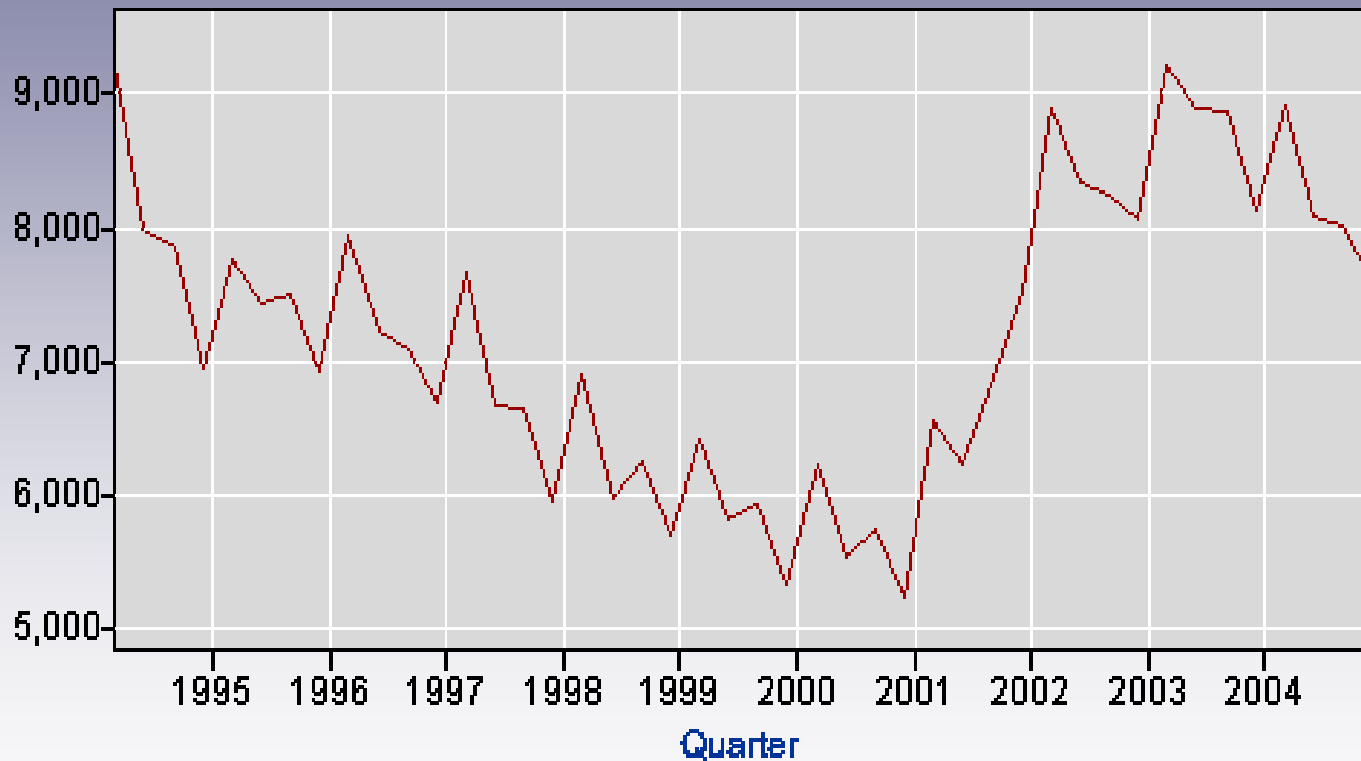
National Employment Level

Not Seasonally Adjusted
(in thousands)

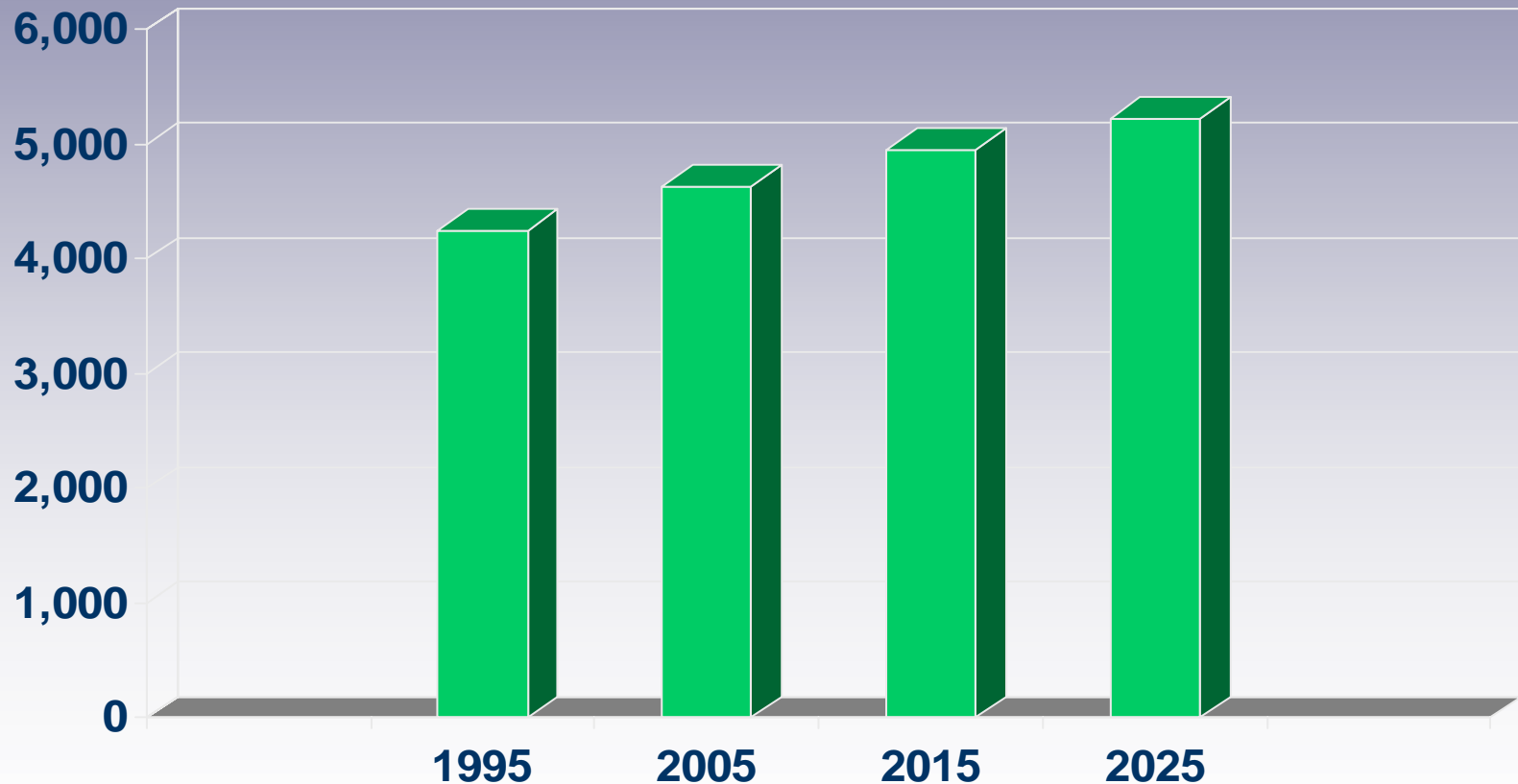


National Unemployment Level

Not Seasonally Adjusted
(in thousands)



Projection of the Total Population of Alabama 1995-2025



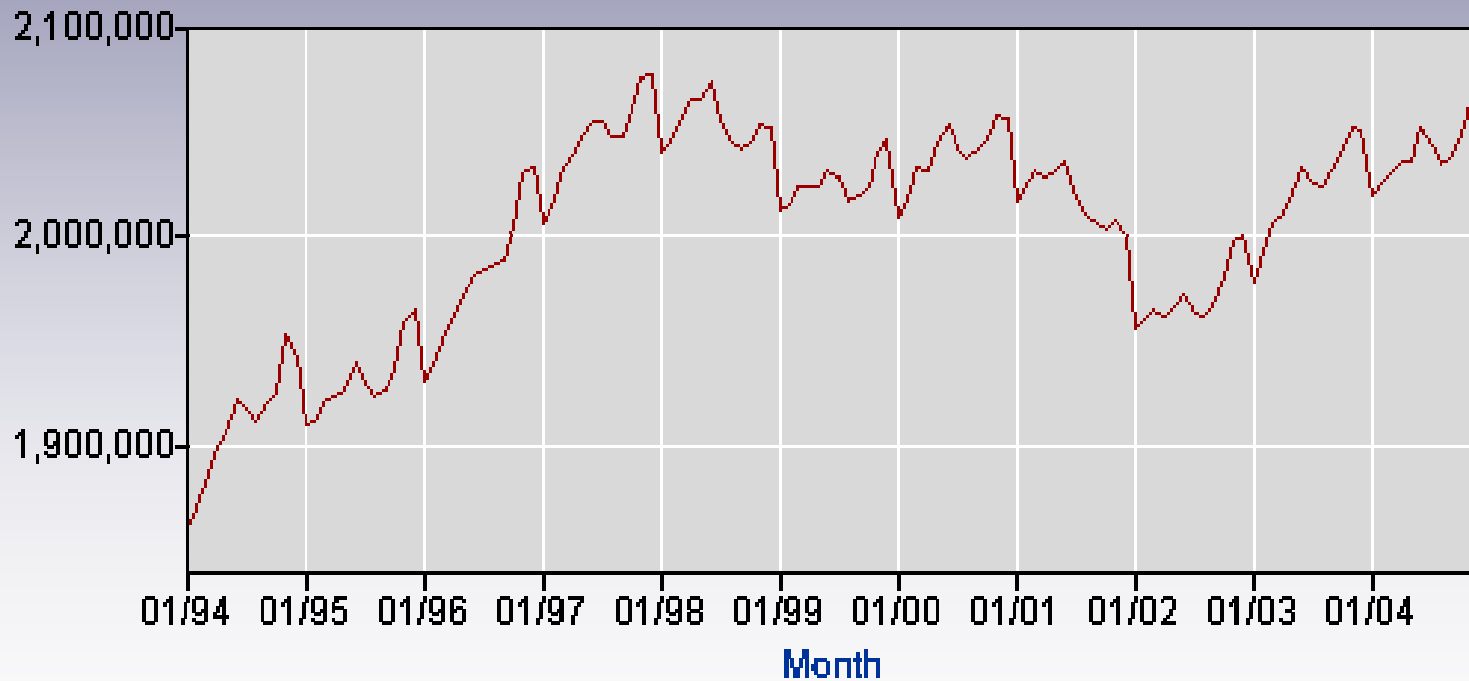
Source: U.S. Census Bureau

Alabama Employment Level

Not Seasonally Adjusted

All Employees

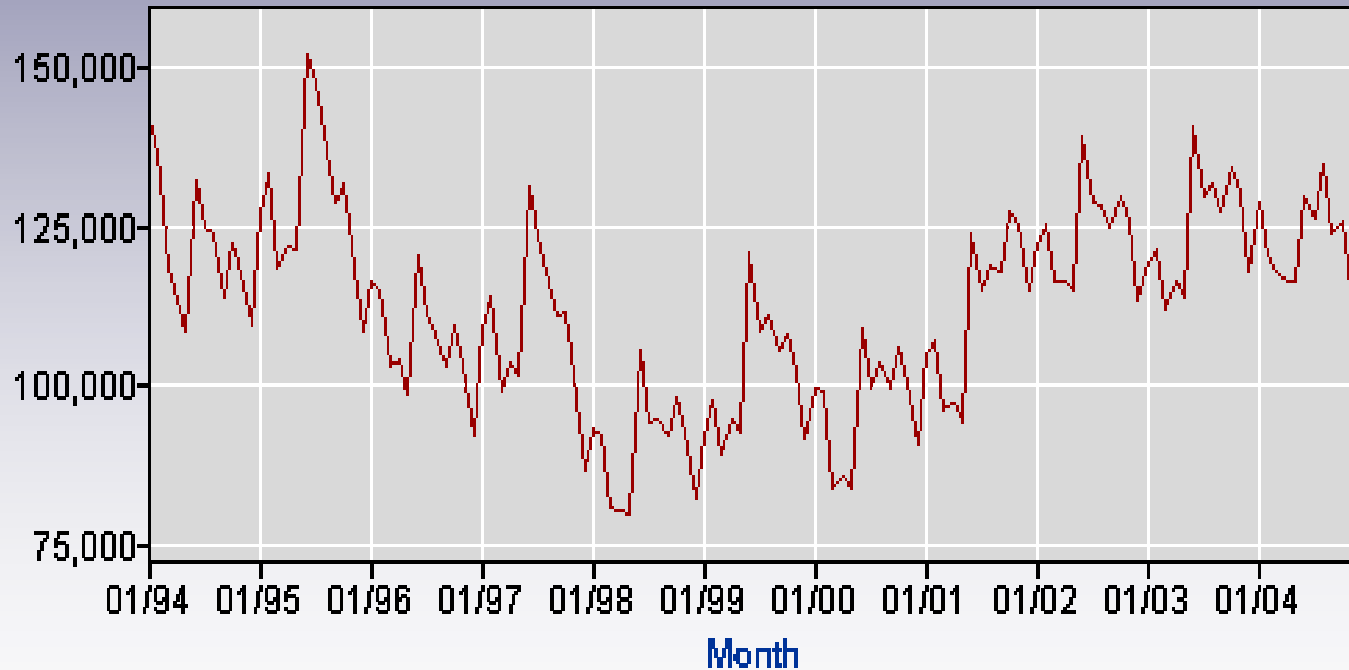
employment



Alabama Unemployment Level

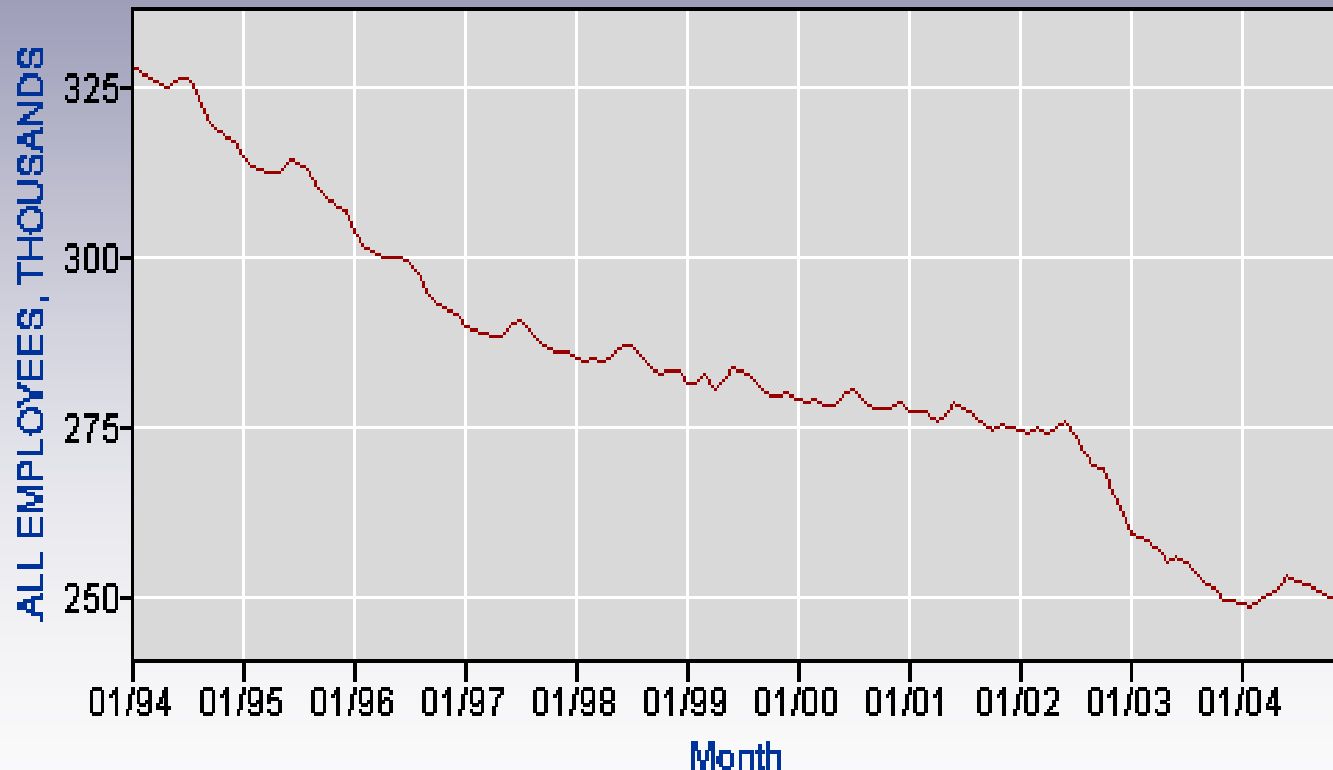
Not Seasonally Adjusted
16 years and over

unemployment



National Electrical Power Generation Employment Level

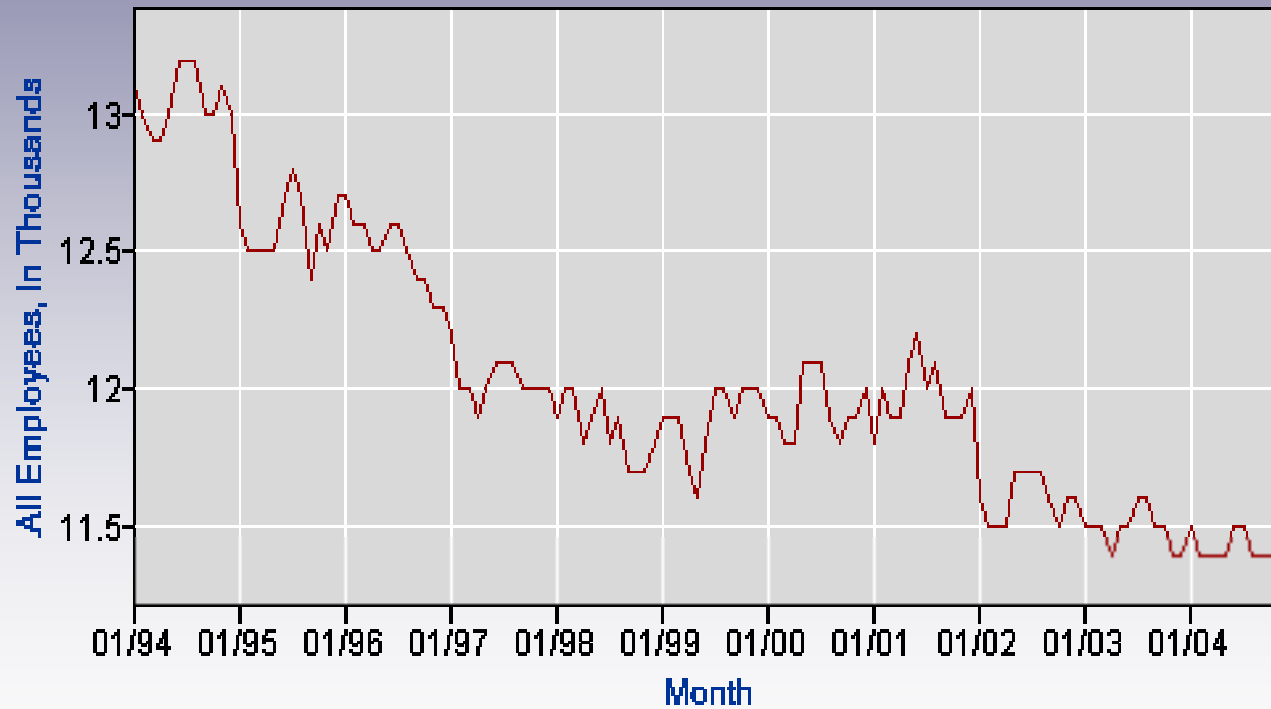
Not Seasonally Adjusted
All Employees



* U.S. Department of Labor Bureau of Labor
Statistic Data

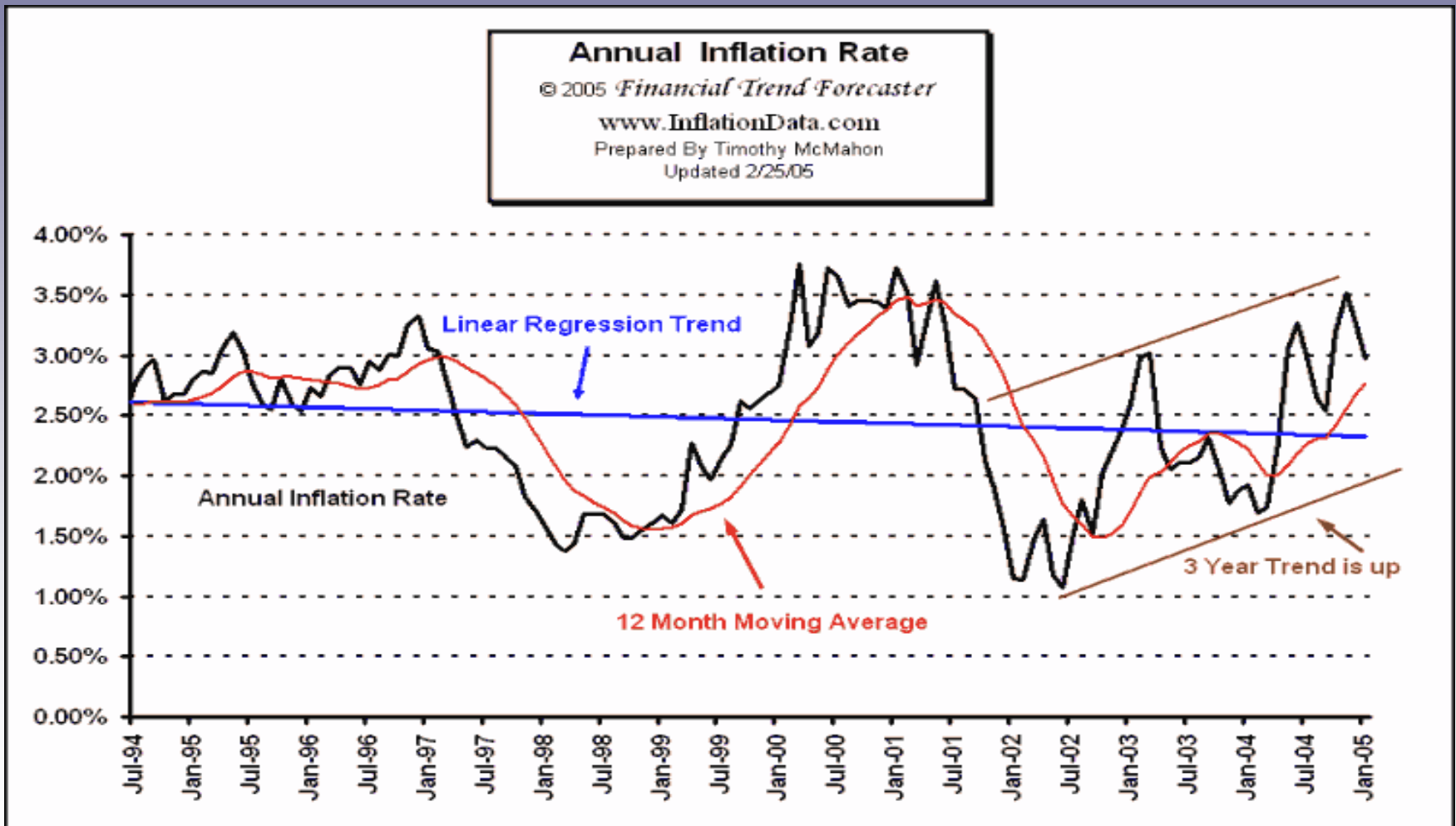
Alabama Electric Power Generation, Transmission and Distribution Employment Level

Not Seasonally Adjusted



* U.S. Department of Labor Bureau of Labor Statistic Data

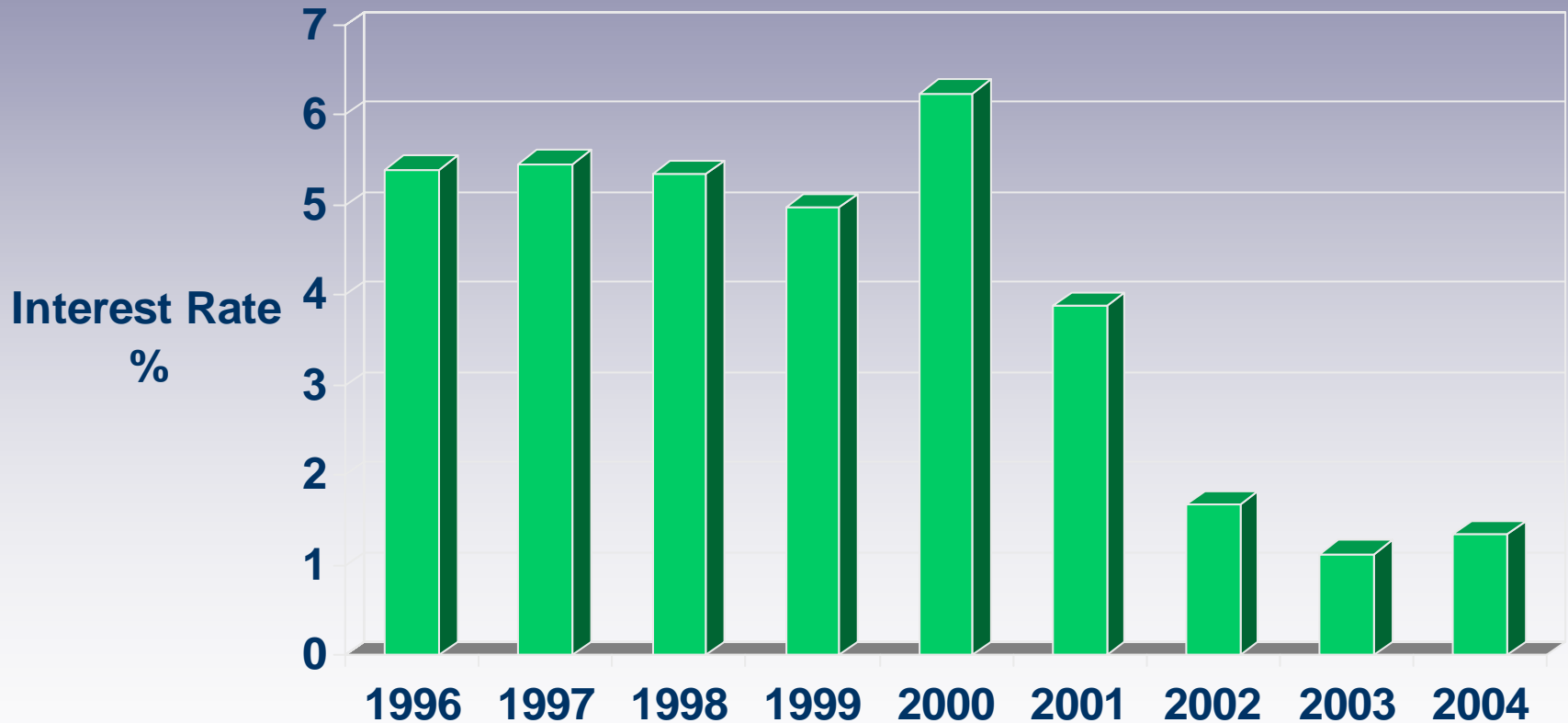
Annual Inflation Rate



Interest Rate Averages

1996 – 2004

(Not Seasonally Adjusted)

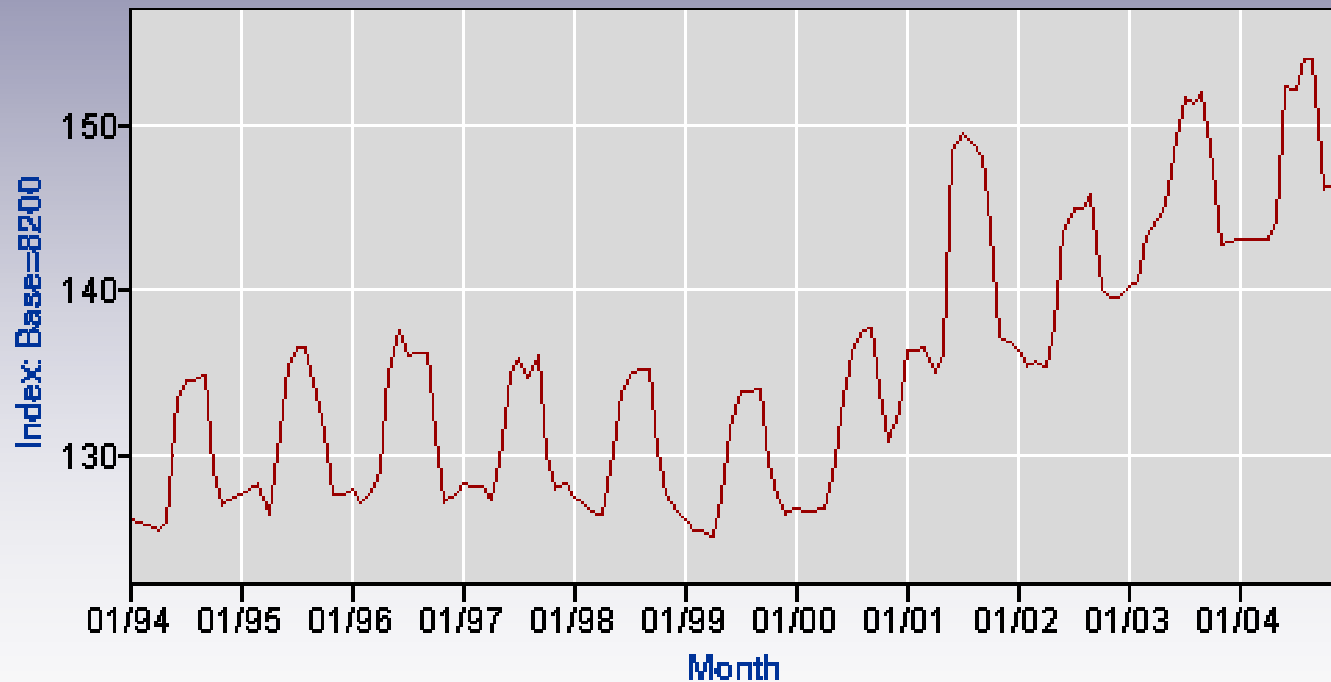


Source: Federal Reserve

PPI Electricity

1996 – 2004

(Not Seasonally Adjusted)

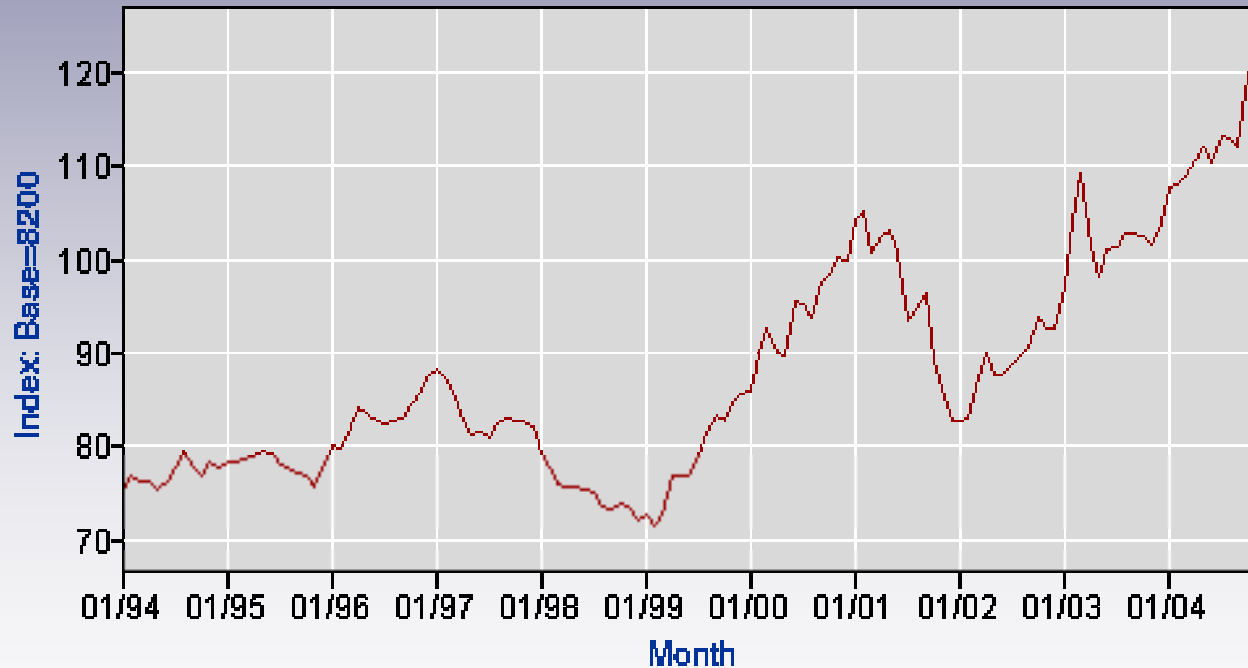


* U.S. Department of Labor Bureau of Labor Statistic Data

PPI Finished Energy Goods

2000 – 2004

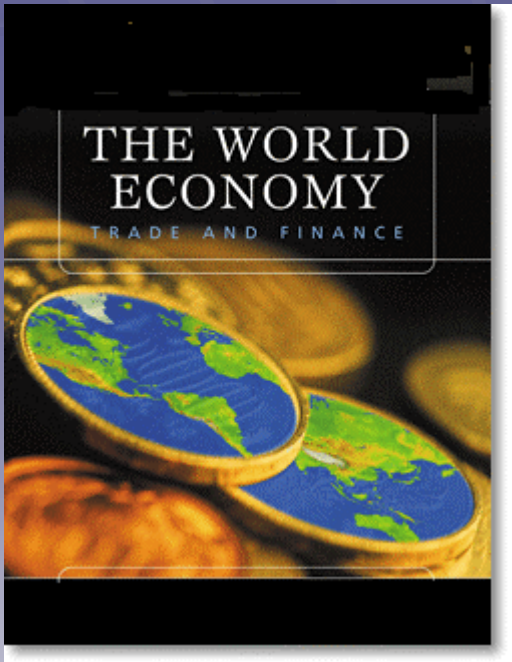
(Not Seasonally Adjusted)



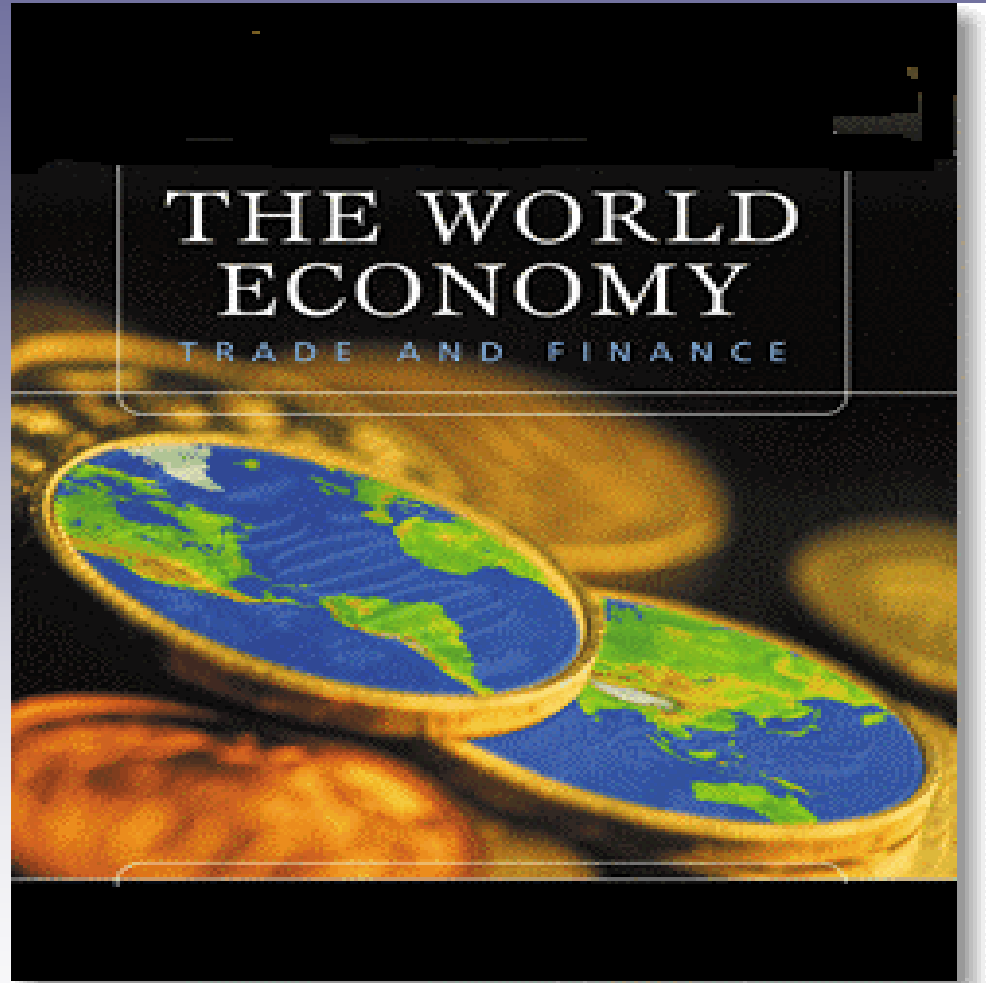
* U.S. Department of Labor Bureau of Labor Statistic Data

Macro Impact on Firm and Industry

Guru Thapathi

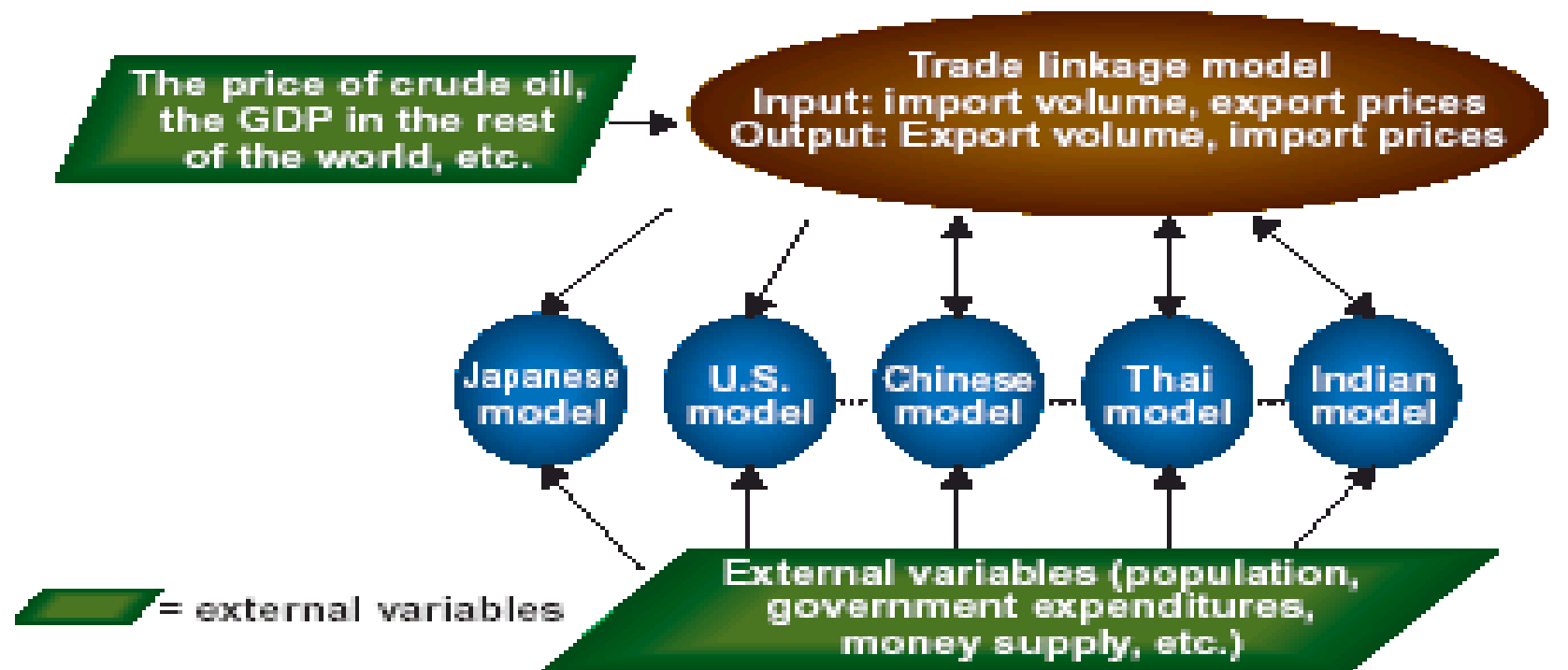


Economic Models



Macro Impact – Global

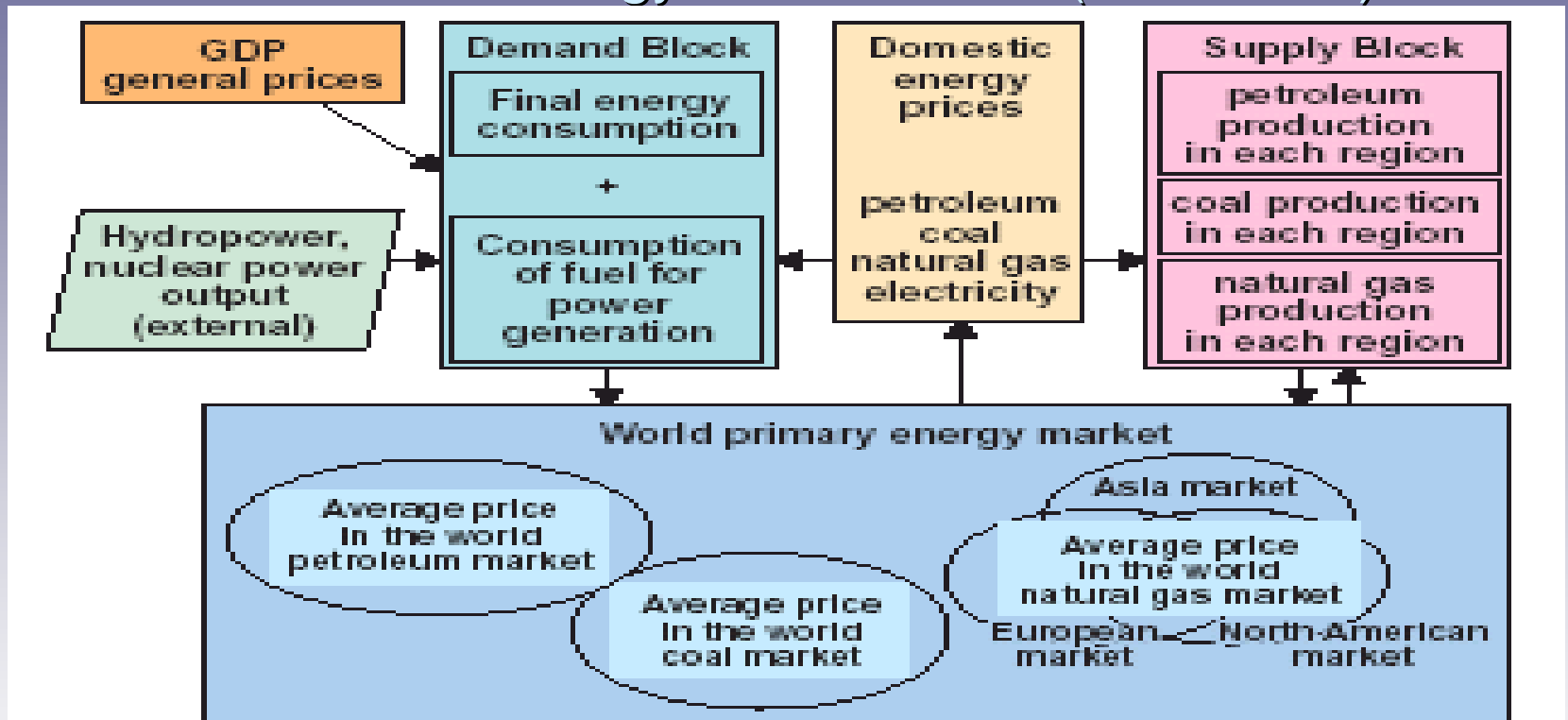
Multi-Country Linkage Model



The Multi-Country Linkage Model (MCLM)

Macro Impact – Global

World Energy Prices Model (WEP2001)

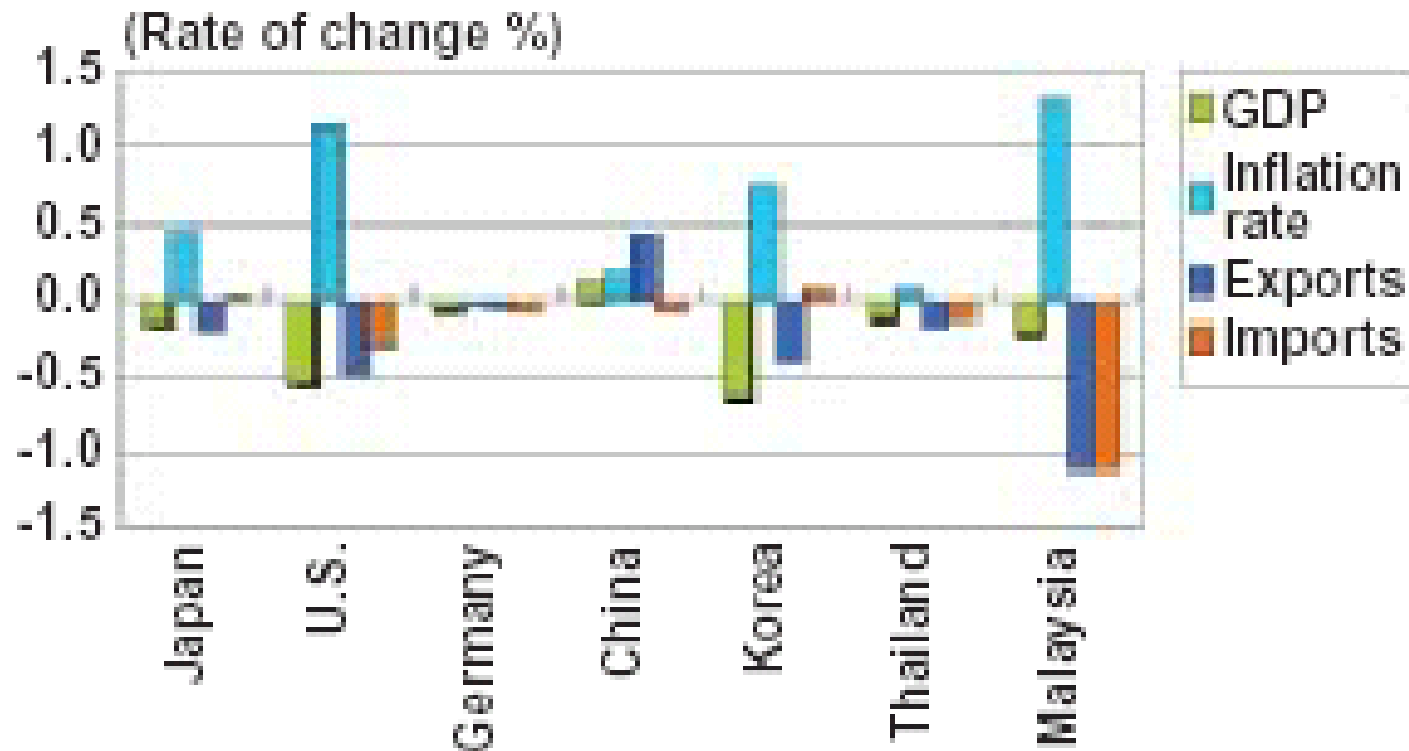


The World Energy Prices Model (WEP2001)

Models – Global Economy

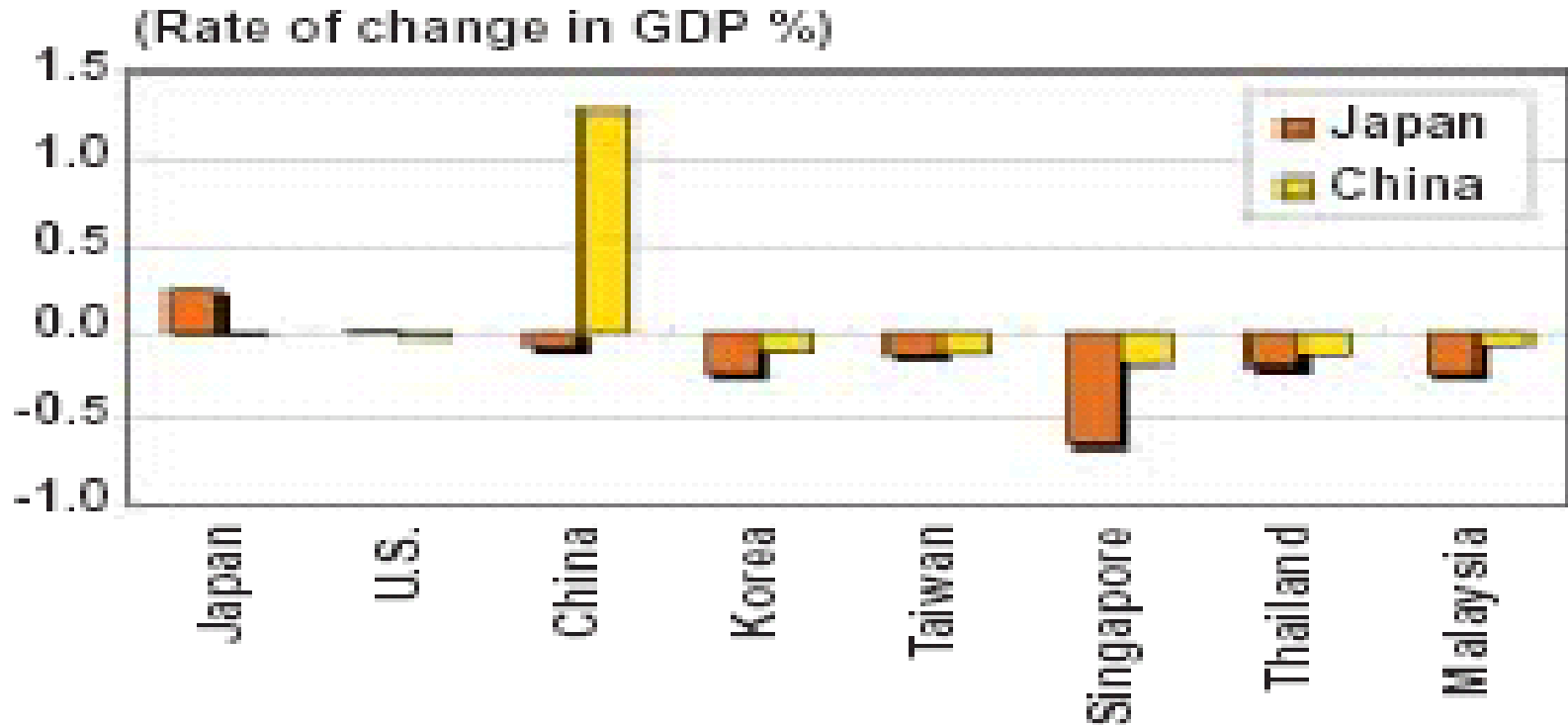
- MCLM – quantitatively analyze economic effects through trade and exchange rates involving U.S, Japan and other advanced countries.
- WEP2001 – calculate primary energy and electricity prices from the demand and supply balance.

Macro Impact – Global



The effects of a 50% rise in the price of crude oil

Macro Impact – Global



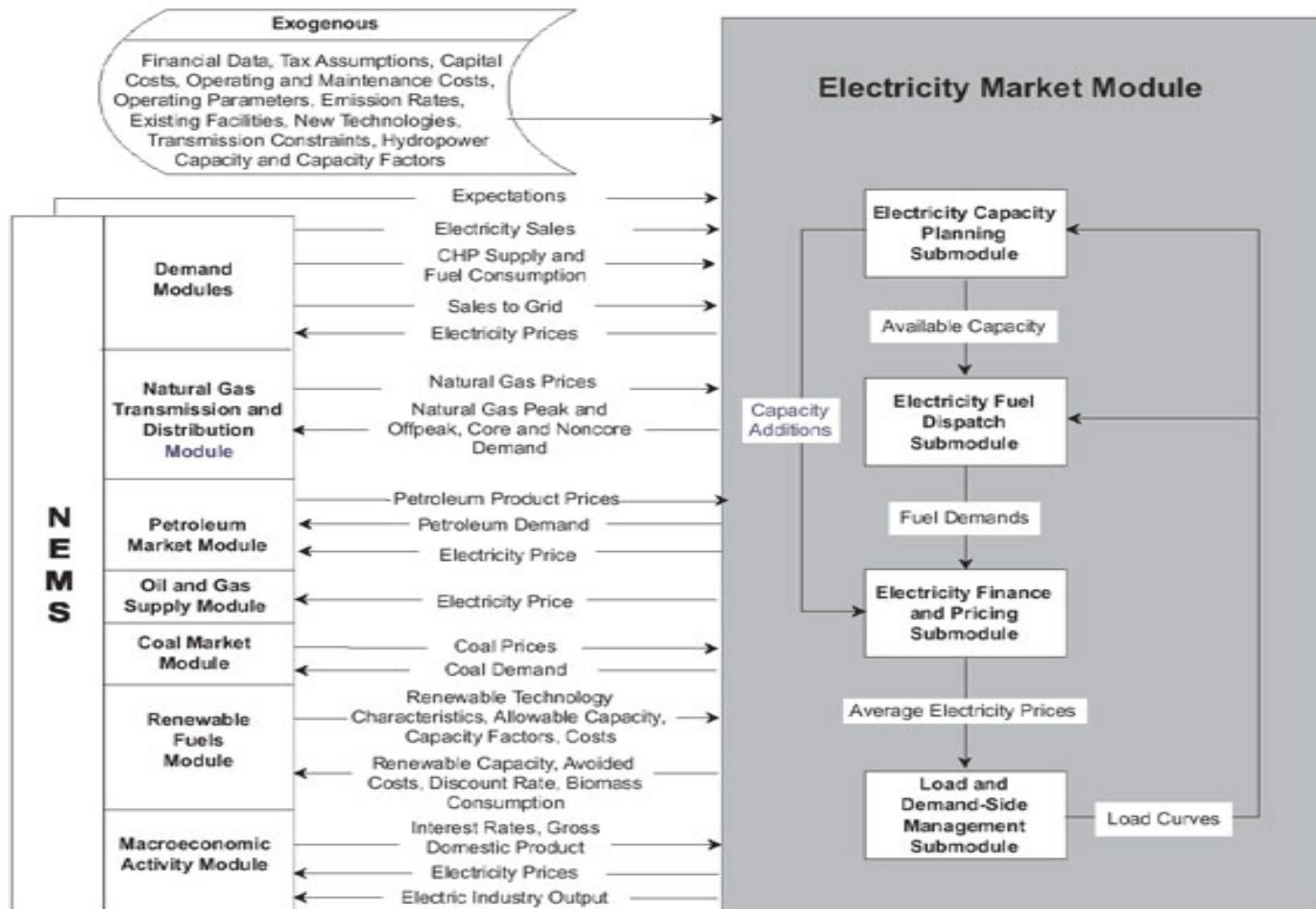
The effect on GDP of a 10% devaluation of the Japanese yen and Chinese yuan

Economic Models - Industry



Macro Impact – Industry

Figure 9. Electricity Market Module Structure



Macro Impact - Firm



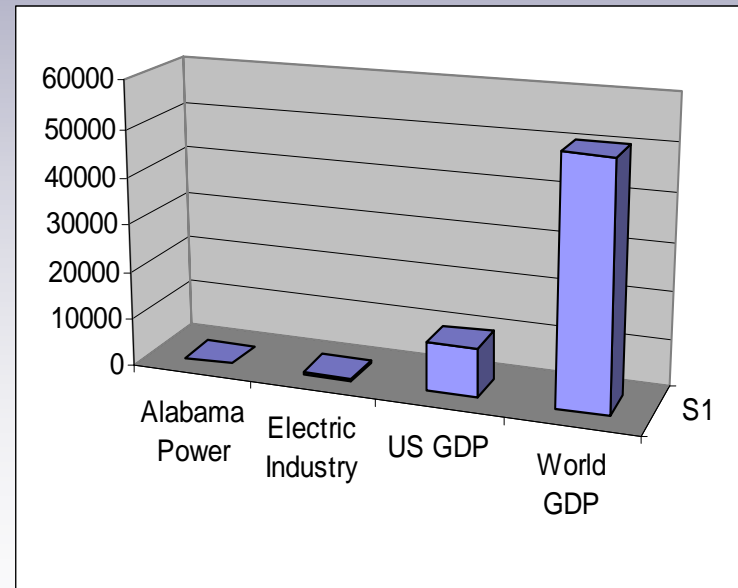
Macro Impact - Firm

- Deregulation – A rousing success in Pennsylvania; A catastrophic failure in California; Remains to be seen in Alabama - A state that is not deregulated and has no plans to deregulate in the near future.
- Price – Increase in coal prices fueled by rapid economic growth in China
- Inflation – creates an economic loss since income tax laws are based on historical costs and company is recovering its cost of investments in dollars that have less purchasing power.

Conclusion

A 3 Billion Dollar company in a 51 Trillion Dollar world economy affected by everything....

- From Alabama to
Alternate energy Sources
- From Brand image to
Blackout
- From China to
Coal prices
- From Demand to
Deregulation



Q&A

- Brendan Flahive
- David Monroe
- Guru Prakash Thapathi
- John Blackwelder
- Magda Ramos
- Victor McCree

