① **Select Economic Roles**

Individuals
- Ramsey model
- OLG model

Firms
- Perfect Comp.
- Monopoly
- Oligopoly
- Monopolistic Comp.

Government
- Fiscal Authority
- Central Bank
- Pension Authority

Banks
- Commercial Bank
- No-Arbitrage Platform

② **Select Agent Algorithms**

LLM-driven Real-data Economic Method

RL Behavior cloning Expert Rules

Consumption
Work
Saving
Investment

Pricing
Production
Selling

Individual Government
Firms Banks

Diverse Scenarios

Macroeconomic
Policy-making
(Tax, interest,
retirement age)

Investment
Capital In/Out
Interest
income

EconGym

Economic Dynamics Analysis

Growth Inflation Working Consumption

Generates dynamic micro- and macroeconomic indicators **for behavioral analysis, forecasting, and policy evaluation.**
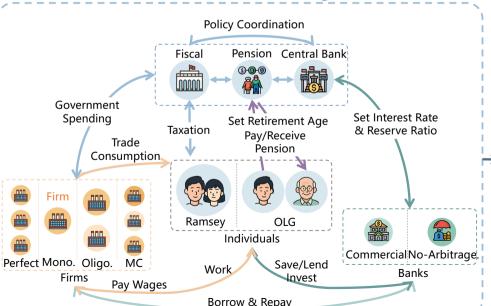
AI Policy Optimization

Multi-agent games Optimization Data

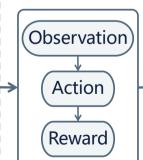Produces multi-agent interaction trajectories **for training, policy optimization, and data generation.**

Economic Modeling

Policy Coordination

Fiscal Pension Central Bank

Government Spending

Taxation

Set Retirement Age
Pay/Receive Pension

Set Interest Rate
& Reserve Ratio

Trade Consumption

Ramsey OLG
Individuals

Commercial No-Arbitrage
Banks

Work

Save/Lend Invest

Pay Wages

Borrow & Repay

Perfect Mono. Oligo. MC
Firms

Firm

Markov Games

Observation

Action

Reward

Economic Scenarios

Single-Scenario Task

Pension & Aging

Fiscal Policy

Monetary Policy

Market Competition

Individual decision

Cross-Scenario Task

TAX %↑

More role types, counts
→ richer scenarios