



CENTER FOR ACCOUNTING  
RESEARCH & EDUCATION

PANEL III

Current and Future Opportunities  
in Academic Research

12:00 PM – 1:00 PM



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# Macro-accounting

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# Why Macro-accounting?

# Accounting Vs Macroeconomics

## Accounting

- Measure **firm** performance
- Identify performance drivers
- Identities:
  - $\Delta S/H \text{ Equity} = \Delta \text{Net Assets}$
  - Net Income = Investments (ignoring financing)
- Consolidation: Across businesses in groups

## Macroeconomics

- Measure **economic** performance of individuals, firms and government combined
- Identify performance drivers
- Identities:
  - Net Income = Investments (**firms**)
  - Wage income = Consumption (**individuals**)
  - Tax Income = Expenditures (**govt**)
- Consolidation: Across all sectors

$$\text{Macro-performance} = \sum_i \text{Micro-performance}_i$$

- Differences
  - Macro-performance ignores property and money (financing) transactions
  - Measurement differences exist - e.g., current/historical cost; Imputed values for own use; Timely loss recognition

# National Income and Product Accounts (NIPA)

Directly affected by business profits

$$\text{GDP} = \text{PCE} + \text{Inv} + \text{Net Exports} + \text{Govt Expend}$$

Indirectly affected by business profits

PCE - Personal consumption expenditures

Inv - Gross private investments

Net exports – Exports net of imports of goods and services

Govt Expend - Government consumption expenditures and gross investments

- “Profit from Current Production”
- Based on a sample of **tax returns** adjusted for current cost of inventory and replacement value for depreciation
  - Economists’ view: GAAP Profits are subjective and discretionary and so are less subject to falsification
    - Ignores tax planning and tax structuring.
  - Accountant’s view: GAAP Profits are informative of underlying economic performance and hence, relevant for economic decisions
    - Capital markets track GAAP profits more than taxable profits
- NIPA profits are less volatile than GAAP profits
  - NIPA profits unaffected by one-off impairments and provisions
- Tax returns data become available 2 to 3 years after the year to which they refer
  - Preliminary estimates extrapolate past NIPA profits and adjust for aggregate earnings (“pre-tax earnings” less “special charges” in COMPUSTAT)

- Why wait for NIPA estimates based on COMPUSTAT and past data?
- NIPA profits are reported on quarterly basis, while aggregate profits can be computed on a monthly or even daily basis from COMPUSTAT.
  - More timely estimates
  - Monthly/daily series helpful to study short-term macro-effects

# Macro-accounting approach to aggregate measures

- Advantages
  - Timely
  - Less concerns with revisions
  - Based on profits used in decision-making
  - Availability of analysts' forecasts to measure earnings expectations and shocks
  - Macro analysis can be corroborated with firm-level analysis
  
- Disadvantages (Opportunities?)
  - Firm-level data available only for listed firms
    - Importance of listed firms in an economy vary across countries
    - Affected by time-series shifts in basket of listed firms
  - Cross-country analysis can suffer from accounting standards or reporting quality differences

## Example: Tax-rate measures:

*“Although there have been significant advances in the development of quantitative methods for studying complex intertemporal models, **empirical studies in this area are still lacking reliable measures of actual aggregate tax rates on factor incomes and consumption.** These tax rates are necessary both to develop quantitative applications of the theory and to help transform the theory into a policy-making tool. Thus. in this context. **it seems that the rewards for making progress in the measurement of aggregate tax rates could be considerable.**”*

- Mendoza et al., *Journal of Monetary Economics* 1994

# Example: Economic growth and tax avoidance

<i>Dependent variable =</i>	<i>GDP growth<sub>it+1</sub></i>		<i>Employment growth<sub>it+1</sub></i>	
<i>Aggregate tax avoidance<sub>it</sub></i>	0.079 (4.66)	0.071 (3.08)	0.011 (2.24)	0.020 (2.60)
<i>Statutory tax rate<sub>it</sub></i>	-0.003 (-0.19)	0.061 (1.72)	0.002 (0.46)	-0.000 (-0.05)
Control variables				
<i>GDP growth<sub>it</sub></i>	0.391 (7.72)	0.259 (4.90)	0.071 (4.65)	0.086 (4.10)
<i>Log(Population)<sub>it</sub></i>	0.004 (4.15)	0.045 (2.08)	-0.001 (-1.67)	0.008 (0.92)
Intercept	Yes	Yes	Yes	Yes
Country fixed effects	No	Yes	No	Yes
Year fixed effects	No	Yes	No	Yes
<i>N</i>	854	854	854	854
Adj. <i>R</i> <sup>2</sup>	0.276	0.644	0.133	0.340

Shevlin, Shivakumar and Urcan (2018)

# Macro-accounting Research Approaches

# Micro to Macro: Topics analysed

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- Predict macro-activities and policies
  - Shivakumar, 2007; Konchitchki and Patatoukas, 2014; Gallo, Hann and Li, 2017; Nallareddy and Ogenva, 2017; Hann, Li and Ogneva, 2018
- Identify causal mechanisms and distinct macro-activities
  - Shivakumar and Urcan, 2018
- Assess efficiency of macro-forecasts
  - Konchitchki and Patatoukas, 2014; Shivakumar and Urcan, 2017
- Evaluate effects of aggregate cost stickiness
  - Rouxelin, Wongsunwai and Yehuda, 2018
- Evaluate macro-role of higher moments of earnings
  - Jorgensen, Li and Sadka, 2011

# Micro to Macro: Methodology employed

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- Within-country time-series analysis
  - Shivakumar, 2007; Nallareddy and Ogenva, 2017
- Cross-country analyses
  - Shevlin, Shivakumar and Urcan, 2018
- State-level analyses
  - Khan and Ozel, 2016

# Micro to Aggregate Capital Market

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- Aggregate accounting variables to Aggregate Capital Market Returns
  - Aggregate earnings (Kothari, Lewellen and Warner, 2006; Gkougskousi, 2013, Sadka and Sadka, 2009)
  - Aggregate earnings announcement returns (Cready and Gurun, 2010)
  - Aggregate investments (Arif and Lee, 2014)
  - Aggregate accruals (Hirshleifer, Hou and Teoh, 2009)
  - Aggregate book-to-market ratios (Kothari and Shanken, 1997)
  - Aggregate management forecasts (Anilowski, Feng and Skinner, 2007; Bonsall, Bozanic and Fischer, 2013)
  - Aggregate analyst forecasts and recommendations (Howe, Unlu, Yan, 2009, Choi, Kalay and Sadka, 2016)

- Systematic component of earnings
  - Ball and Brown (1967)
- Macro exposures
  - Stock market efficiency
    - Chordia and Shivakumar, 2005; Li, Richardson and Tuna, 2013; Konchitchki 2011
  - Analysts' reactions
    - Basu, Markov and Shivakumar, 2010
- Earnings quality and macro effects
  - Armstrong, Glaeser and Kepler, 2017

# Macro Questions

# Do aggregate earnings attribute matter?

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- Is there a systematic component in earnings attributes and in earnings management?
  - Aggregate special items (Abdlla and Carabias, 2017)
  - Aggregate earnings conservatism (Crawley, 2015)
- What are the aggregate effects of:
  - Real earnings management
  - Accruals management
  - Transparency

# How dynamic are the relationships?

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- Relation between aggregate earnings and stock market returns is time-varying (Pataoukas, 2014; Zolotoy, Frederickson and Lyon, 2017)
  - Why?
- Need to unravel relation between firm-level earnings and macroeconomic activities
  - Which macro-variables drive a firm's earnings?
  - How do the macro-variables affect a firm's earnings?
    - Revenues, Holding gains, Operating costs, Finance costs, taxes, etc.
  - What factors affect macro-exposure?
    - Role of hedging and risk-management policies
  - How does macro-exposure time-vary?

# Does cross-sectional heterogeneity matter?

- Firm characteristics and their effects on relationship between aggregate earnings and the macro-economy.
  - Accounting attributes (Ball, Gallo and Ghysels, 2018)
  - Export revenues and Import costs
  - Firm size
  - Network effects
  - Ownership structure
  - Corporate governance
- Institutional setting of each economy can matter in cross-country studies
- Critically important to improve aggregation of variables

- Replicating studies with correlated dependent variables
  - Macro-variables tend to be highly correlated
    - GDP, Real GDP, Inflation, Industrial production growth, Unemployment
- Mechanically linking aggregated accounting variables with macro-variables
- Largely overlapping studies

- **Macroeconomics training**
  - Accounting PhD programmes don't cover macroeconomics
  - Time-series techniques (e.g., VAR analysis, ARIMA models, etc.) often employed in macro literature rarely used in accounting
  
- **Little theory to direct empirical research**
  - Largely data mining exercises
  
- **Data limitations**
  - Time-series often less than 50 annual observations.

- Significant potential for accounting researchers to incrementally contribute to the macroeconomics literature
- Macro-accounting approach useful to address macroeconomic issues
  - Estimation of timely macro measures
  - Computation of sub-sample measures for cross-sectional analyses
  - Allows corroborative analysis at firm-level
- Literature is still in its infancy
- Innovation is key to its long-term success



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# Earnings and the Macroeconomy: Understanding Macro

Gil Sadka

# What is the Macroeconomy?

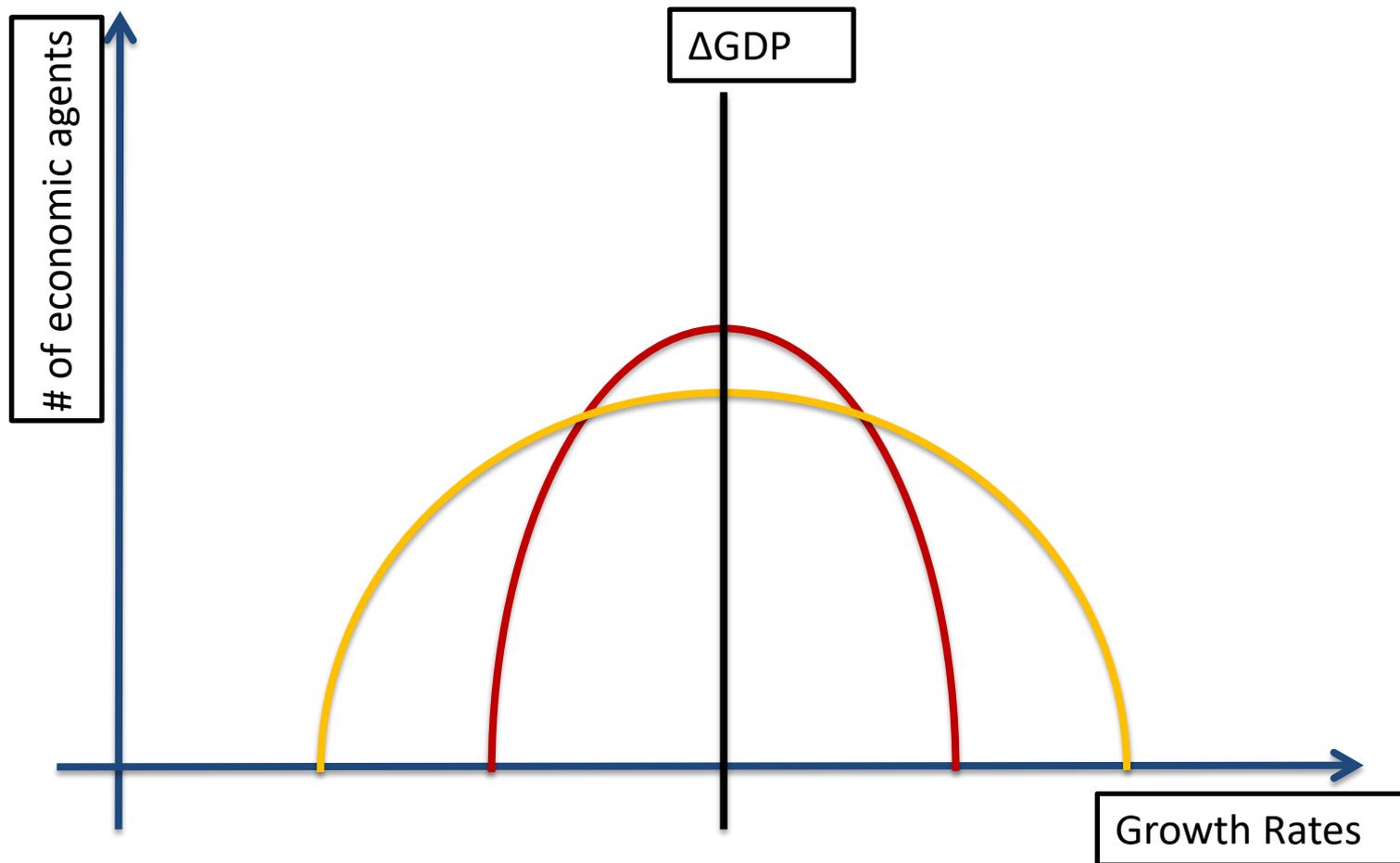
- Wikipedia:
- **Macroeconomics** is a branch of [economics](#) dealing with the performance, structure, behavior, and decision-making of an [economy](#) as a whole.
- How do we measure the economy as a whole?

# Common Measures

- Gross Domestic Product (GDP)
- Gross National Product (GNP)
- Industrial Production
- Total Factor Productivity
- Unemployment
- Aggregate Earnings

**With one Exception, these measures are weighted averages!**

# Are These Economies the same?



Panel A: Equal-weighted return and future earnings dispersion regressions

	Dependent variable: $R_{t}^{ew}$		
Intercept	0.139 (6.82)	0.139 (7.53)	0.934 (1.83)
$\Delta X_{t+1}/P_{t-ew}$	2.917 (1.86)	2.821 (1.77)	1.397 (0.72)
$DISP_{t+1}$	<b>-9.988</b> <b>(-4.19)</b>	<b>-8.503</b> <b>(-3.45)</b>	<b>-5.923</b> <b>(-2.38)</b>
$ILIQ_t$		-0.142 (-1.56)	-0.188 (-2.75)
$MVOL_t$			-0.416 (-0.89)
$U_t$			0.241 (5.37)
$cay_t$			-1.390 (-0.73)
$s_t^w$			-0.963 (-1.57)
$D_{rec_t}$			-0.054 (-0.75)
$GDP_t$			4.167 (3.36)
$PROD_t$			0.269 (0.41)
$INF_t$			0.456 (0.42)
Adj.R <sup>2</sup>	0.290	0.298	0.480
#Obs	52	52	48

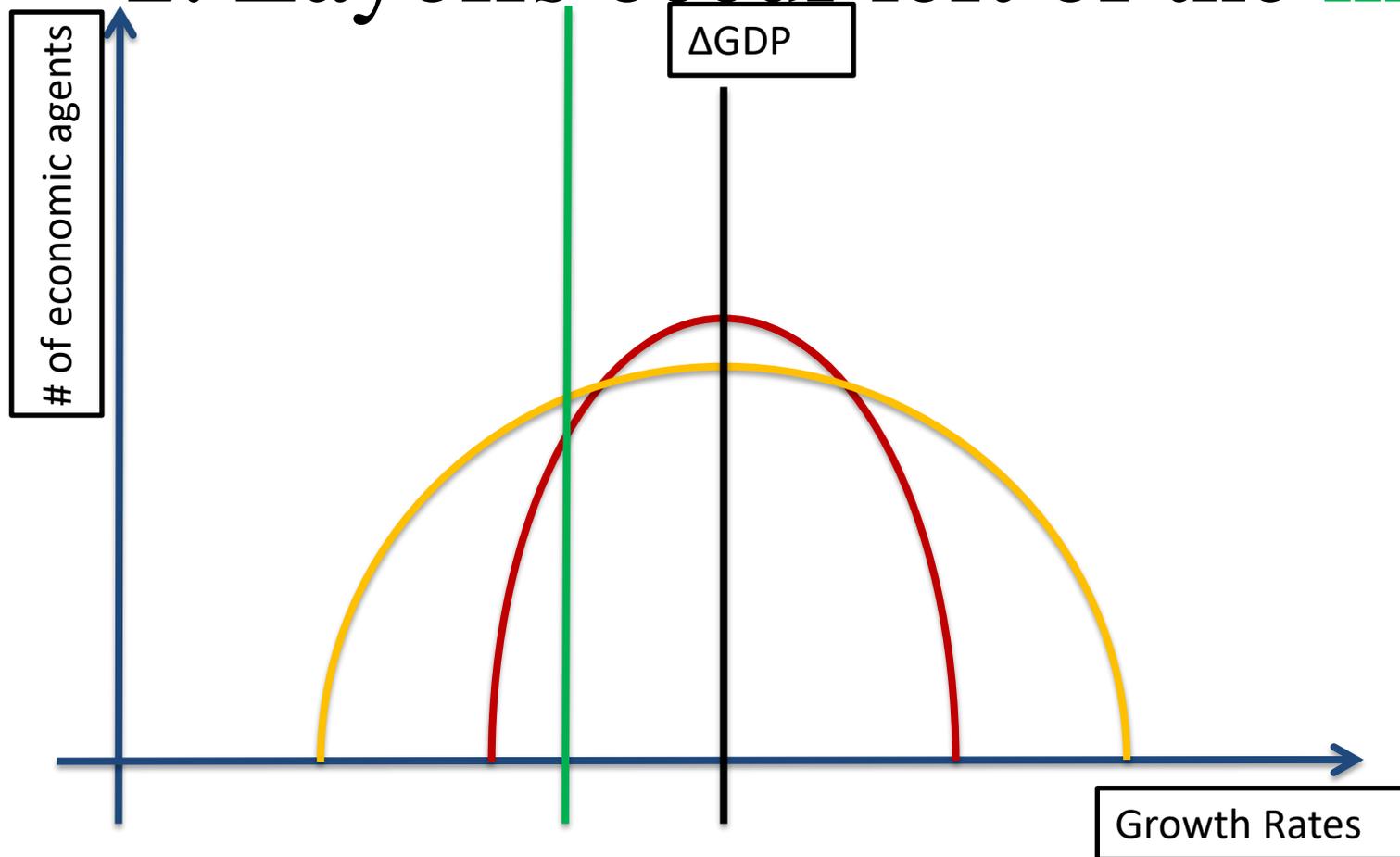
# Three reasons for the negative implications of dispersion

1. Uncertainty (Bjorn Jorgensen will discuss this issue further tomorrow)
2. Unemployment (Lilien, 1982)
3. Debt Markets (Gkougkousi, John, Radhakrishnan, and Sadka, 2018)

## 2. Sectoral Shifts

- There are frictions in the labor market
  - It takes a long time to find a new job
- Thus, naturally, layoffs increase unemployment
- More dispersed economies have more layoffs and **higher unemployment**

## 2. Layoffs occur left of the line



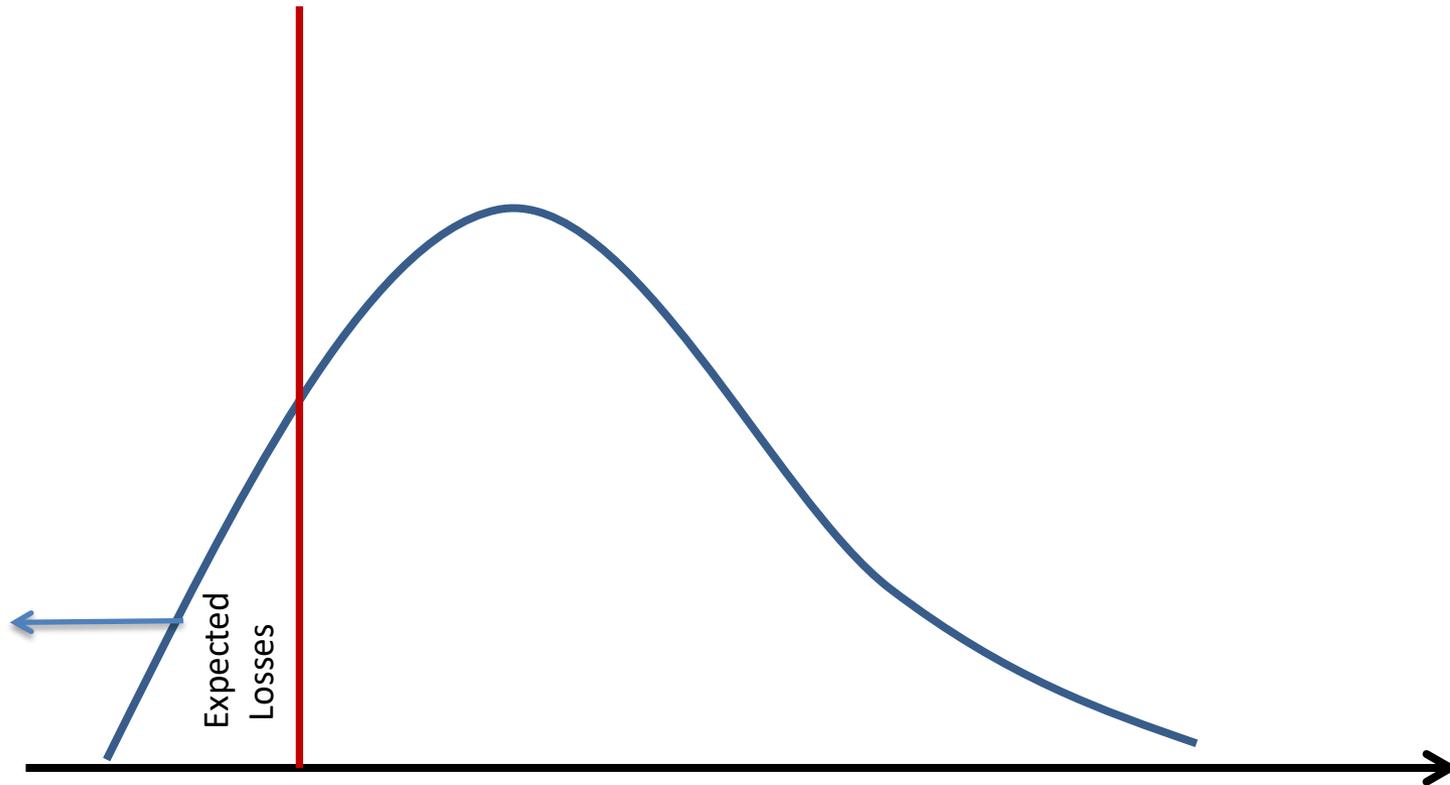
## 2. Empirical Evidence

	Dependent Variable : D_UNEMP <sub>t</sub>					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Intercept</b>	0.01	-0.01	0.00	-0.03	-0.04	-0.03
	(0.25)	(-0.37)	(-0.16)	(-1.61)	(-1.83)*	(-1.66)*
<b>Rev<sub>t</sub></b>	-0.02	-0.11	-0.10			
	(-0.48)	(-2.14)**	(-1.99)**			
<b>Unc<sub>t</sub></b>				0.12	0.10	0.10
				(3.02)***	(2.60)**	(2.41)**
<b>VIX<sub>t</sub></b>						
<b>Rev_Dispt</b>	<b>13.44</b>	<b>6.72</b>	<b>7.00</b>	<b>11.07</b>	<b>6.24</b>	<b>7.02</b>
	<b>(4.22)***</b>	<b>(1.90)*</b>	<b>(2.00)**</b>	<b>(4.08)***</b>	<b>(1.94)*</b>	<b>(2.23)**</b>
<b>Idio_Volt</b>						
<b>D_GDP<sub>t</sub></b>			-0.10			-0.08
			(-2.57)**			(-2.27)**
<b>Adj. R<sup>2</sup></b>	0.16	0.25	0.30	0.22	0.27	0.31
<b># obs</b>	105	105	105	105	105	105

### 3. Fixed income securities and dispersion

- A fixed income security is more sensitive to negative shocks than positive shocks as the upside is limited by interest rate
- A more dispersed economy will have more poor performing loans
- Thus, more dispersed economy should have higher loan losses
- Higher loan losses should generate higher interest rates
- **What is the overall effect on banks?**

### 3. Expected losses rise with dispersion



# 3. Empirical Evidence

TABLE 2  
Contemporaneous Loan Portfolio Performance

Panel A: Loan loss provisions					
	$\Delta LLP_t$	$\Delta LLP_t$	$\Delta LLP_t$	$\Delta LLP_t$	$\Delta LLP_t$
	(1)	(2)	(3)	(4)	(5)
$\Delta E_t$	-0.015 (0.022)		-0.047** (0.022)	-0.030 (0.021)	-0.003 (0.022)
$Disp_t$		0.085** (0.033)	0.100** (0.040)	0.091** (0.036)	0.067** (0.029)
$\Delta GDP_t$				-0.014 (0.010)	-0.009 (0.008)
$\Delta Term_t$					0.023 (0.015)
$\Delta Tbill_t$					0.002 (0.012)
$\Delta Default_t$					0.008 (0.034)
$\Delta Vol_t$					0.163*** (0.053)
Constant	0.034 (0.053)	-0.286** (0.109)	-0.233** (0.105)	-0.242** (0.100)	-0.218** (0.089)
N	54	54	54	54	54
$R^2$	1%	30%	38%	41%	54%
Adj. $R^2$	-1%	28%	36%	38%	48%

# Loan spreads

TABLE 3  
Contemporaneous Loan Portfolio Spreads

	$\Delta Loan$ $_{spread_t}$ (1)	$\Delta Loan$ $_{spread_t}$ (2)	$\Delta Loan$ $_{spread_t}$ (3)	$\Delta Loan$ $_{spread_t}$ (4)	$\Delta Loan$ $_{spread_t}$ (5)
$\Delta E_t$	4.800 (4.498)		-1.628 (3.123)	5.161 (4.034)	4.189 (3.563)
$Disp_t$		15.264*** (4.108)	15.859*** (4.219)	12.399*** (2.141)	10.472*** (2.882)
$\Delta GDP_t$				-9.001*** (2.981)	-9.308** (4.086)
$\Delta Term_t$					7.795 (5.135)
$\Delta Tbill_t$					4.646 (2.695)
$\Delta Default_t$					-5.828 (6.194)
$\Delta Vol_t$					7.832 (19.384)
Constant	-10.428 (8.471)	-52.976*** (11.555)	-51.504*** (12.642)	-61.241*** (9.602)	-51.918*** (6.521)
N	27	27	27	27	27
$R^2$	5%	50%	50%	69%	74%
Adj. $R^2$	1%	48%	46%	65%	64%

# Bond returns

TABLE 5  
Lagged Bond Portfolio Performance

	$Ret\_bond_{t-1}$	$Ret\_bond_{t-1}$	$Ret\_bond_{t-1}$	$Ret\_bond_{t-1}$	$Ret\_bond_{t-1}$
	(1)	(2)	(3)	(4)	(5)
$\Delta E_t$	-0.007 (0.017)		0.015 (0.009)	-0.011 (0.011)	-0.002 (0.013)
$Disp_t$		-0.049** (0.022)	-0.054** (0.023)	-0.041*** (0.014)	-0.041*** (0.011)
$\Delta GDP_t$				0.033*** (0.008)	0.050*** (0.014)
$\Delta Term_t$					-0.018 (0.015)
$\Delta Tbill_t$					-0.038*** (0.010)
$\Delta Default_t$					0.013 (0.047)
$\Delta Vol_t$					0.017 (0.048)
Constant	0.092** (0.037)	0.245*** (0.075)	0.232*** (0.076)	0.265*** (0.062)	0.252*** (0.040)
N	28	28	28	28	28
$R^2$	1%	38%	40%	59%	71%
Adj. $R^2$	-3%	35%	35%	54%	61%

# Predicting loan losses (quarterly)

	(1)	(2)	(3)	(4)	(5)
$\Delta E_t$	-0.031*** (0.008)	-0.024** (0.012)	-0.035*** (0.008)	-0.009 (0.007)	-0.010 (0.008)
$Disp_t$	0.028*** (0.007)	0.023** (0.011)	0.032*** (0.007)	0.009 (0.007)	0.009 (0.007)
$\Delta GDP_t$	-0.001 (0.001)	-0.000 (0.001)	-0.002* (0.001)	0.001 (0.001)	-0.001 (0.001)
$\Delta Term_t$	0.001 (0.007)	0.006 (0.008)	-0.012 (0.009)	-0.007 (0.009)	-0.001 (0.008)
$\Delta Tbill_t$	0.000 (0.005)	0.003 (0.005)	0.001 (0.003)	-0.007 (0.007)	0.003 (0.004)
$\Delta Default_t$	0.020 (0.013)	-0.018 (0.016)	0.038** (0.019)	0.020** (0.009)	-0.009 (0.018)
$\Delta Vol_t$	-0.006 (0.007)	0.022** (0.011)	-0.044* (0.026)	0.024** (0.009)	0.008 (0.006)
Constant	0.044*** (0.011)	0.033** (0.016)	0.050*** (0.012)	0.012 (0.010)	0.015 (0.012)
N	169	169	169	169	168
$R^2$	10%	8%	20%	12%	2%
Adj. $R^2$	7%	4%	17%	8%	-2%

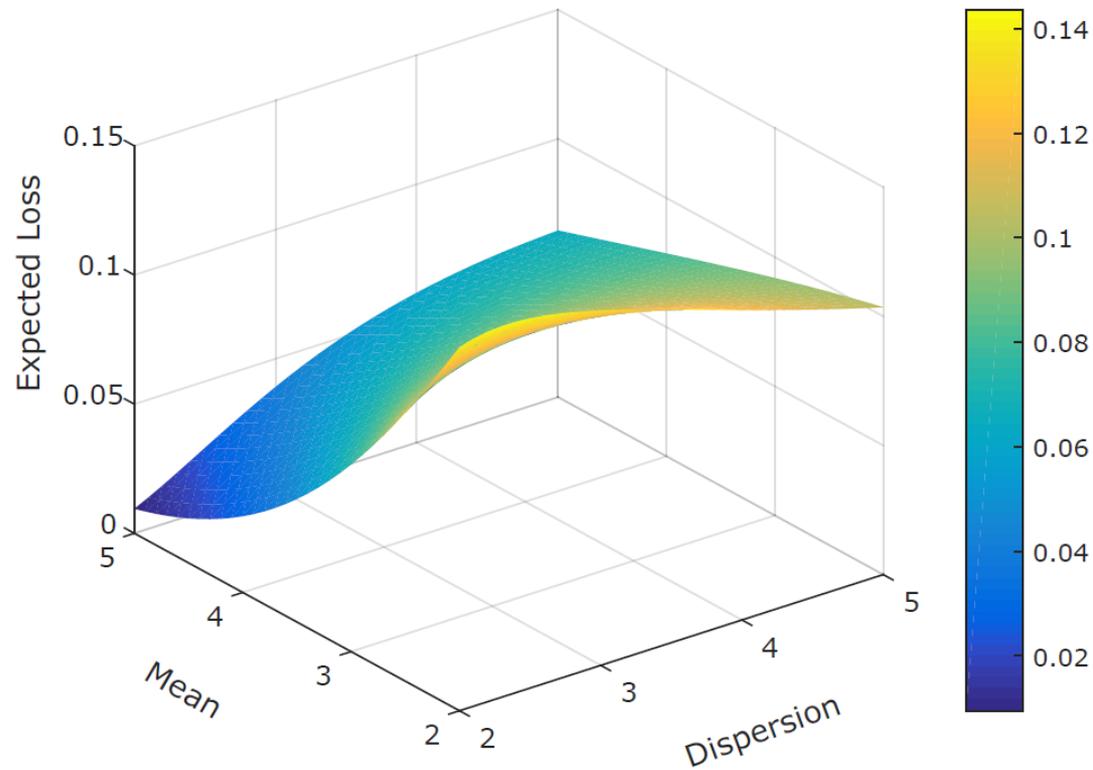
# How to compare two economic states?

- How do we compare two economies with different average growth and different dispersion?
- Are the effects of dispersion the same for a high growth economy and for a low growth economy?

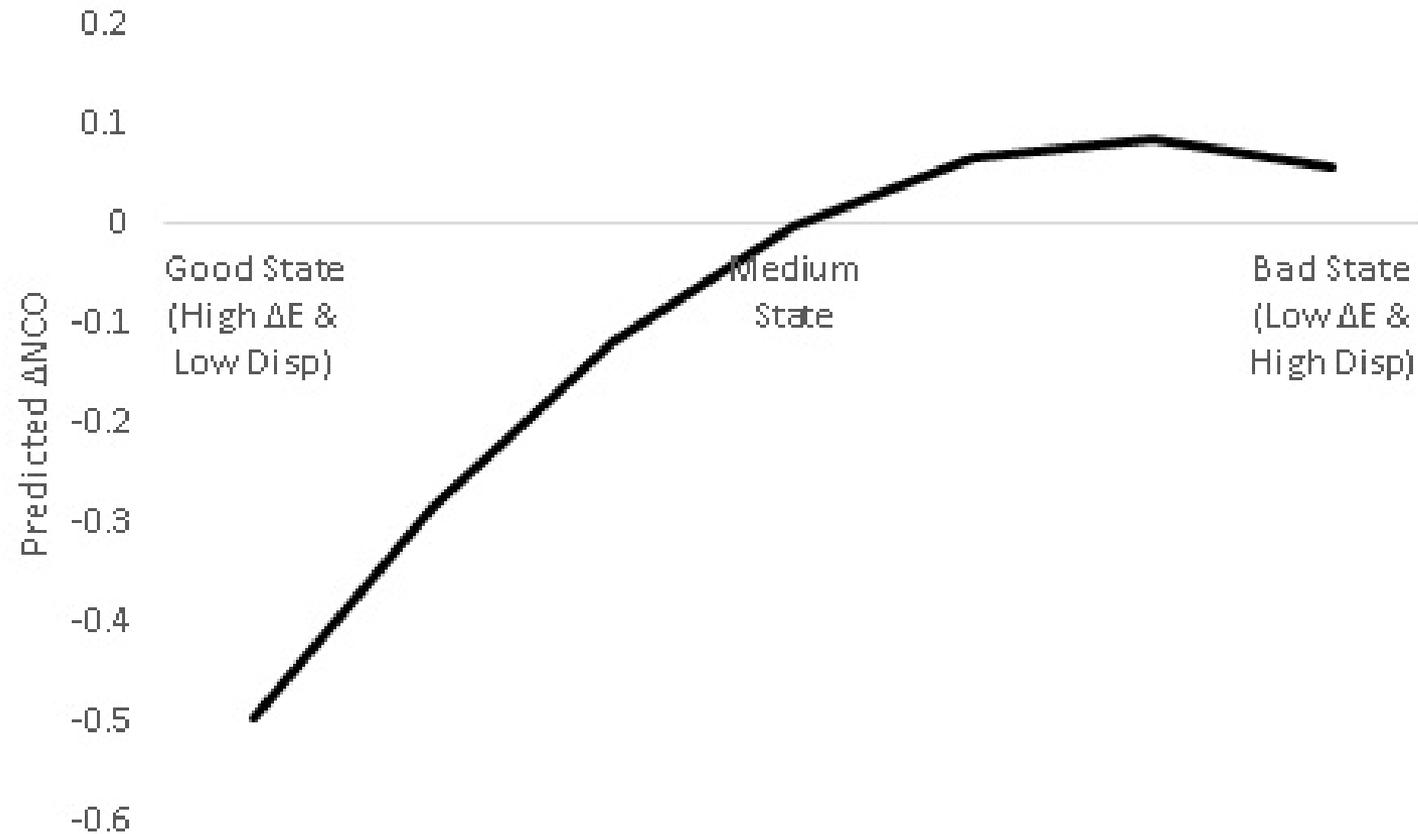
# Conditional Dispersion

	Dependent Variable : D_UNEMP <sub>t</sub>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	0.01 (0.25)	-0.01 (-0.37)	0.00 (-0.16)	-0.03 (-1.61)	-0.04 (-1.83)*	-0.03 (-1.66)*	-0.04 (-1.48)	-0.04* (-1.76)	-0.03 (-1.30)
Rev <sub>t</sub>	-0.02 (-0.48)	-0.11 (-2.14)**	-0.10 (-1.99)**						
Unc <sub>t</sub>				0.12 (3.02)***	0.10 (2.60)**	0.10 (2.41)**			
VIX <sub>t</sub>							0.16*** (3.20)	0.15*** (3.09)	0.11** (2.22)
Rev_Dispt	13.44 (4.22)***	6.72 (1.90)*	7.00 (2.00)**	11.07 (4.08)***	6.24 (1.94)*	7.02 (2.23)**			
Idio_Volt							10.28** (2.14)	-2.33 (-0.37)	-4.69 (-0.69)
Rev <sub>t</sub> (X) Rev_Dispt		<b>24.46</b> <b>(3.63)***</b>	<b>20.32</b> <b>(2.83)***</b>						
Unc <sub>t</sub> (X) Rev_Dispt					<b>14.88</b> <b>(2.64)***</b>	<b>10.44</b> <b>(1.78)*</b>			
VIX <sub>t</sub> (X) Idio_Volt								<b>27.00***</b> <b>(2.93)</b>	<b>27.76***</b> <b>(2.73)</b>
Adj. R <sup>2</sup>	0.16	0.25	0.30	0.22	0.27	0.31	0.15	0.22	0.22
F-test		29.53***	20.12***		20.81***	12.69***		13.42***	9.91***
# obs	105	105	105	105	105	105	86	86	86

# Expected Loan losses (simulation)



# Charge-Offs (data)



# Conclusions

- Economic conditions are **jointly** determined by the mean and dispersion of individual outcomes
- It seems that dispersion is more important than the mean of the distribution in explaining macroeconomic conditions

# Future Work

- Develop better, more comprehensive measures of economic conditions
- Determinants of dispersion
- Industry versus firm-level dispersion
- Other implications of dispersion



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# “Accounting Information and Macroeconomy”

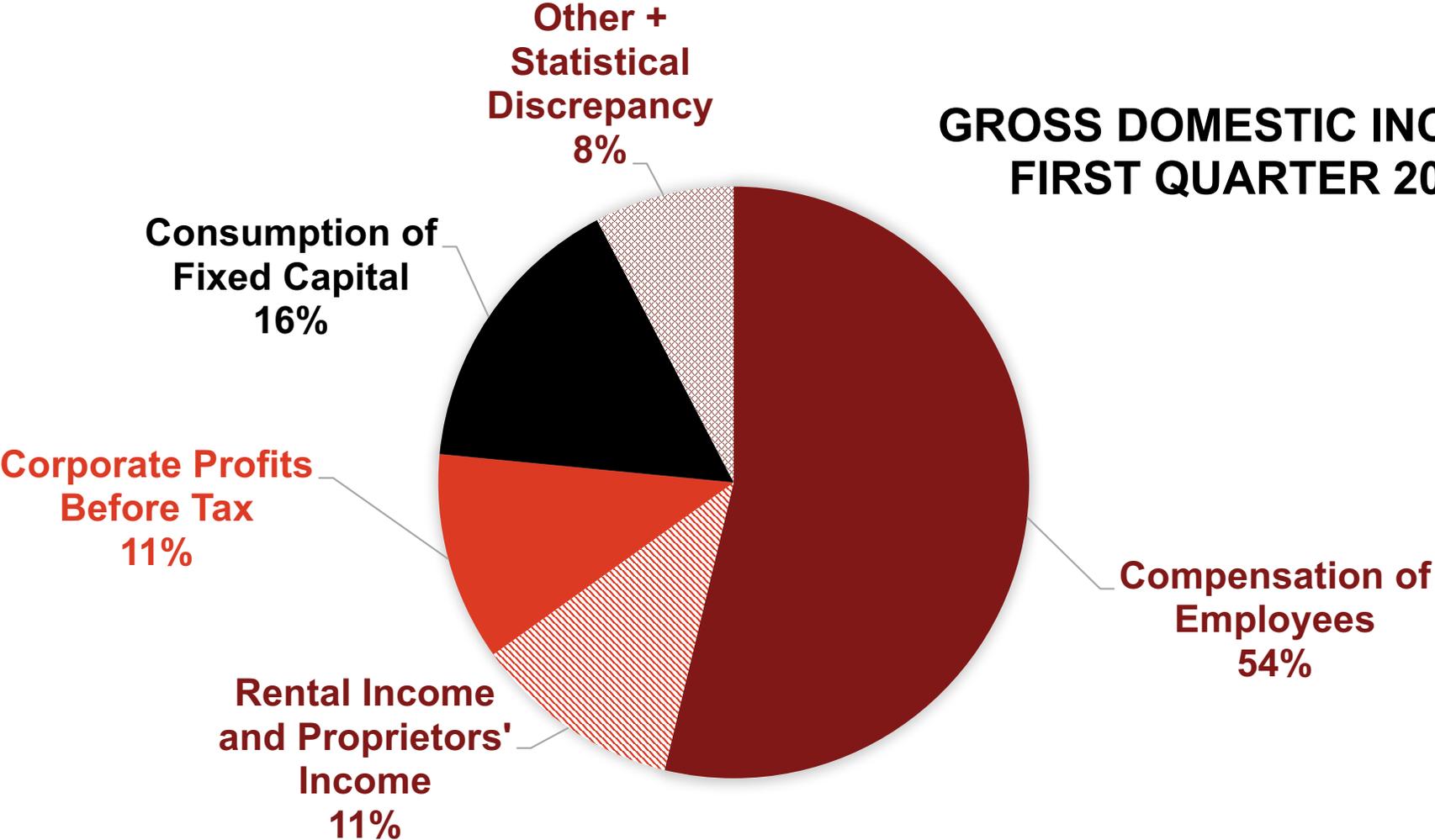
*Maria Ogneva*  
*University of Southern California*

CARE Conference  
May 18, 2018

# BEYOND NIPA CORPORATE PROFITS: LABOR MARKET

# Background on National Income and Product Accounts (NIPA)

**GROSS DOMESTIC INCOME,  
FIRST QUARTER 2015**



# GAAP Earnings and Labor Market

## Hann, Li, and Ogneva (2017)

- Fixed (quasi-fixed) employment adjustment costs (Hamermesh 1989; Cabalero, Engel, and Haltiwanger 1997)
  - Lumpy employment adjustment (Davis et al. 2006; Cooper et al. 2007)
  - Persistent profitability shocks – better predictors of employment changes (Roys 2016)
- Partition aggregate GAAP earnings into:
  - Core earnings (a more persistent component)
  - Special items (unusual or infrequent components)
- Use the first moment of aggregate GAAP earnings components to predict labor market conditions

# GAAP Earnings and Labor Market

## Hann, Li, and Ogneva (2017)

	NIPA Employee Compensation				Unemployment Forecast Error			
	t+1	t+2	t+3	t+4	t+1	t+2	t+3	t+4
GAAP Core Earnings <sub>t</sub>	<b>0.67***</b>	<b>0.43*</b>	<b>0.53**</b>	0.42	-0.01	<b>-0.03**</b>	<b>-0.03*</b>	-0.02
	(3.61)	(1.74)	(2.00)	(1.58)	(-1.31)	(-2.03)	(-1.90)	(-1.32)
GAAP Special Items <sub>t</sub>	<b>1.73***</b>	0.41	0.19	-0.76	0.004	<b>-0.08**</b>	-0.01	0.03
	(4.03)	(0.71)	(0.31)	(1.24)	(0.20)	(-2.12)	(-0.11)	(0.58)

Regressions control for other macro indicators, trends, seasonality, and composite CFNAI index

# GAAP Earnings and Labor Market

## Hann, Li, and Ogneva (2017)

	NIPA Employee Compensation				Unemployment Forecast Error			
	t+1	t+2	t+3	t+4	t+1	t+2	t+3	t+4
GAAP Core Earnings <sub>t</sub>	<b>0.67***</b>	<b>0.43*</b>	<b>0.53**</b>	0.42	-0.01	<b>-0.03**</b>	<b>-0.03*</b>	-0.02
	<b>(3.61)</b>	<b>(1.74)</b>	<b>(2.00)</b>	(1.58)	(-1.31)	<b>(-2.03)</b>	<b>(-1.90)</b>	(-1.32)
GAAP Special Items <sub>t</sub>	<b>1.73***</b>	0.41	0.19	-0.76	0.004	<b>-0.08**</b>	-0.01	0.03
	<b>(4.03)</b>	(0.71)	(0.31)	(1.24)	(0.20)	<b>(-2.12)</b>	(-0.11)	(0.58)

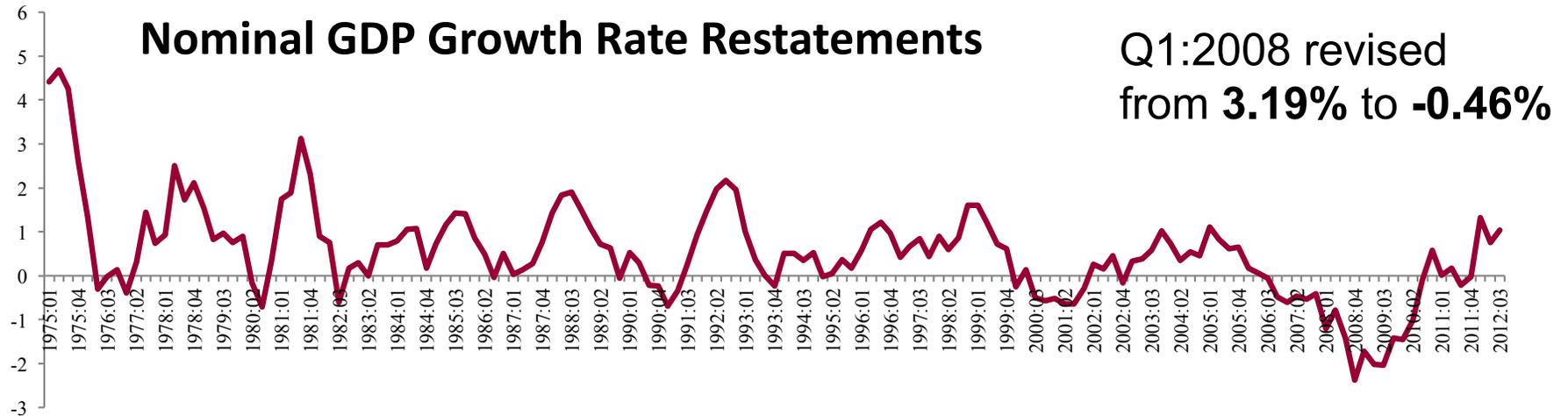
Contrast with prior findings (Abdalla and Carabias, 2017): core GAAP earnings have little predictive content for GDP growth, which we also confirm

	Real GDP Growth			
	t+1	t+2	t+3	t+4
GAAP Core Earnings <sub>t</sub>	-0.05	-0.02	0.04	0.07
	(-0.50)	(-0.18)	(0.34)	(0.54)
GAAP Special Items <sub>t</sub>	<b>0.61**</b>	<b>0.64**</b>	0.03	<b>-0.62**</b>
	<b>(2.57)</b>	<b>(2.37)</b>	(0.09)	<b>(-2.14)</b>

Regressions control for other macro indicators, trends, seasonality, and composite CFNAI index

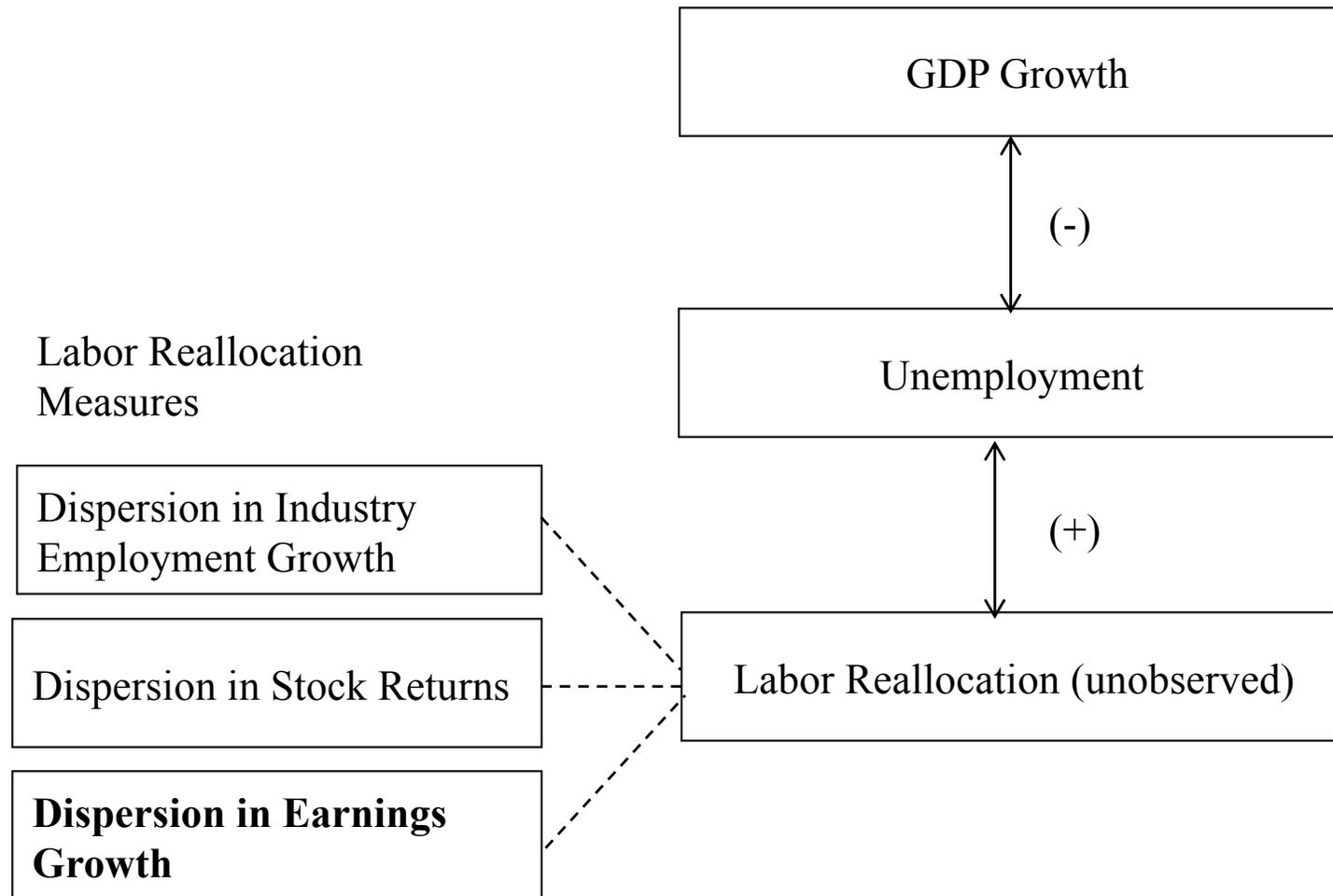
# ECONOMIC SIGNIFICANCE: POLICY IMPLICATIONS

# Nallareddy and Ogneva (2017). Improving Early GDP Estimates using Accounting Information



- Early GDP estimates based on imprecise and incomplete information
- Initial estimate: 3 weeks after quarter ends
  - 45% full 3-month data (e.g., surveys)
  - 30% first 2-months data, extrapolated for the 3<sup>rd</sup> month
  - 25% trend data (derived from various indicators)
- Monthly, annual restatements (1, 2 months, over 2 years):
  - New data (e.g. 3rd month survey, annual tax filings, annual surveys)
  - Improved data (e.g. late survey responses)

# N&O (2017). Dispersion in Earnings Growth - a Measure of Labor Reallocation



# N&O (2017). Main Empirical Result

<i>OLS Regression</i>	<b>DV = Restatement in Real GDP Growth<sub>t</sub></b>		
<b>Earnings Dispersion<sub>t-1</sub></b>	<b>-15.46***</b> (-2.89)	<b>-15.60***</b> (-2.85)	<b>-16.43**</b> (-2.37)
Initial GDP Estimate <sub>t</sub>	-0.35*** (-3.42)	-0.38*** (-3.57)	-0.34*** (-3.41)
GDP Estimate <sub>t-1</sub>	-0.15* (-1.95)	-0.16** (-2.03)	-0.15** (-2.04)
GDP SPF Forecast <sub>t</sub>	0.29* (1.88)	0.31* (1.93)	0.25* (1.92)
CFNAI <sub>t</sub>	0.75** (2.55)	0.80*** (2.76)	0.68** (2.13)
Empl. Growth Dispersion <sub>t-1</sub>		-0.35 (-1.41)	-0.26 (-1.08)
Return Dispersion <sub>t-1</sub>		2.41 (0.73)	3.60 (0.77)
			<b>Controls</b>
Adj. R <sup>2</sup>	0.14	0.14	0.16
Obs	150	150	150

**Earnings growth dispersion information is not fully incorporated in early GDP estimates.**

# N&O (2017). Economic Significance – Policy Implications

- Basel III, countercyclical buffer provision effective in 2019
  - Criteria of a well-capitalized bank depend on the magnitude of credit-to-GDP gap (private non-financial sector credit to nominal GDP ratio minus the trend in the ratio)
- Compare the rule recommendations, buffer requirements and lending implications:
  - based on initial GDP estimate (real time)
  - based on initial estimate adjusted for the predicted restatement
  - based on the final GDP estimate (perfect foresight of true economic picture)

# N&O (2017). Basel III. Counterfactual Analysis for Q4:2004

## Initially announced GDP figure:

- Suggested buffer add-on: 1.75%
- Banks with capital ratios below 11.75%: 587
- Additional capital to be raised: \$39.63 bln
- Resulting cut-back in lending: \$73.7-\$125.22 bln

## Adjusted initial GDP figure (or final GDP figure):

- Suggested buffer add-on: 1.5%
- Banks with capital ratios below 11.5%: 498
- Additional capital to be raised: \$33.95 bln
- Resulting cut-back in lending: \$63.15-\$107.29 bln

**Reduction in lending would be \$10 - \$18 bln lower using adjusted GDP figure**



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