

# SME Financing and Investment during the European Financial Crisis

Professor Larry Chavis  
University of North Carolina at Chapel Hill

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# Access to Financing and Investment in Eastern Europe and Central Asia (ECA)

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- ▶ Chavis, Klapper, Love in Calcagnini and Favaretto 2011
  - ▶ 10,421 small and medium sized firms in 30 countries in ECA
  - ▶ 2008
  - ▶ Younger firms use less bank financing in non-EU countries
  - ▶ Access to loans impacts likelihood to make new investments
  - ▶ Firms that needed credit but did not apply less likely to invest
- ▶ Current Research
  - ▶ Using a 2013 survey, how did the variation in financial crisis impact new investment and financing by SME's in Eastern Europe?
  - ▶ Were younger firms disproportionately affected?

## Other Recent Research

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- ▶ SME's in Western Europe more likely to be denied credit in stressed countries regardless of credit worthiness. More reliance on retained earnings and government subsidies. (Ferrando, Popov and Udell 2017)
- ▶ From a 2009-10 study of 6 EU Eastern European Countries, firms cite falling demand rather than a credit crunch is their main obstacle. (Nguyen 2014)
- ▶ Young and small SME's in Europe more likely to be rejected for loans than in the US. (Sannajust 2014)

# Data Overview

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- ▶ **Business Environment and Enterprise Performance Survey**
  - ▶ European Bank for Reconstruction and World Bank
- ▶ **14,470 firms in 30 countries**
- ▶ **2011 to 2014**
  - ▶ 65% in 2013
- ▶ **Average firm age: 14 years**
  - ▶ Inner quartile range: 7 to 18
- ▶ **Average firm size: 47 full time employees**
  - ▶ Inner quartile range: 8 to 38
- ▶ **Manufacturing 40%**
- ▶ **Wholesale/retail 38%**
- ▶ **Construction 8.6%**

# Countries Included in Data

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# Falling Invest and Increasing Unemployment in ECA

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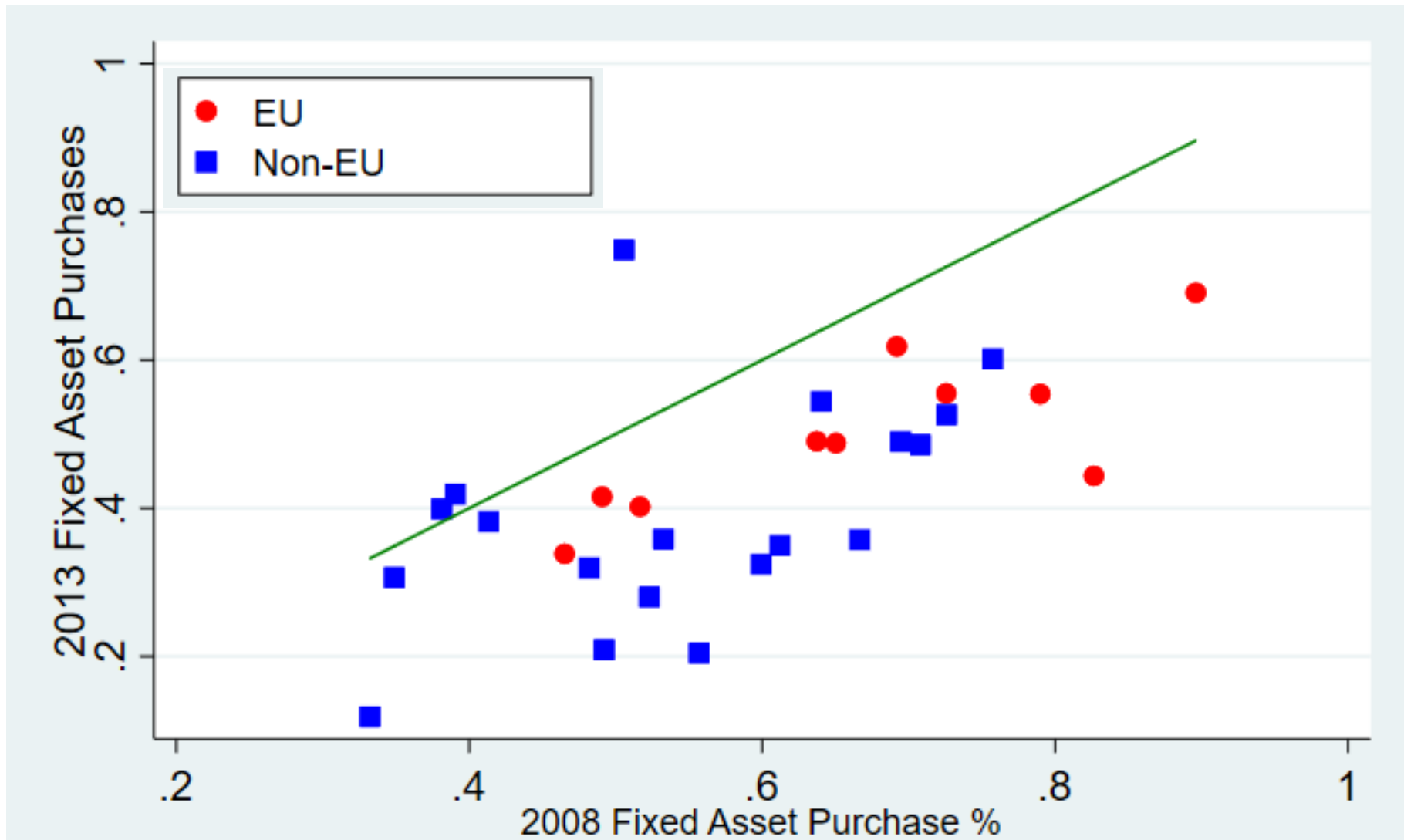
	Fixed Asset Purchase in Past Year	
Year	2008	2013
Total	58%	39%
EU	66%	47%
non-EU	55%	37%

In fiscal year X, did this establishment purchase any fixed assets, such as machinery, vehicles, equipment, land or buildings?

	Unemployment Rate	
Year	2008	2013
Total	11.4	13.1
EU	6.7	10.3
non-EU	13.9	14.6

International Labor Organization  
15+ Unemployment Rate

# Falling rates of Fixed Asset Investment by Country



## Key for the Next Graph

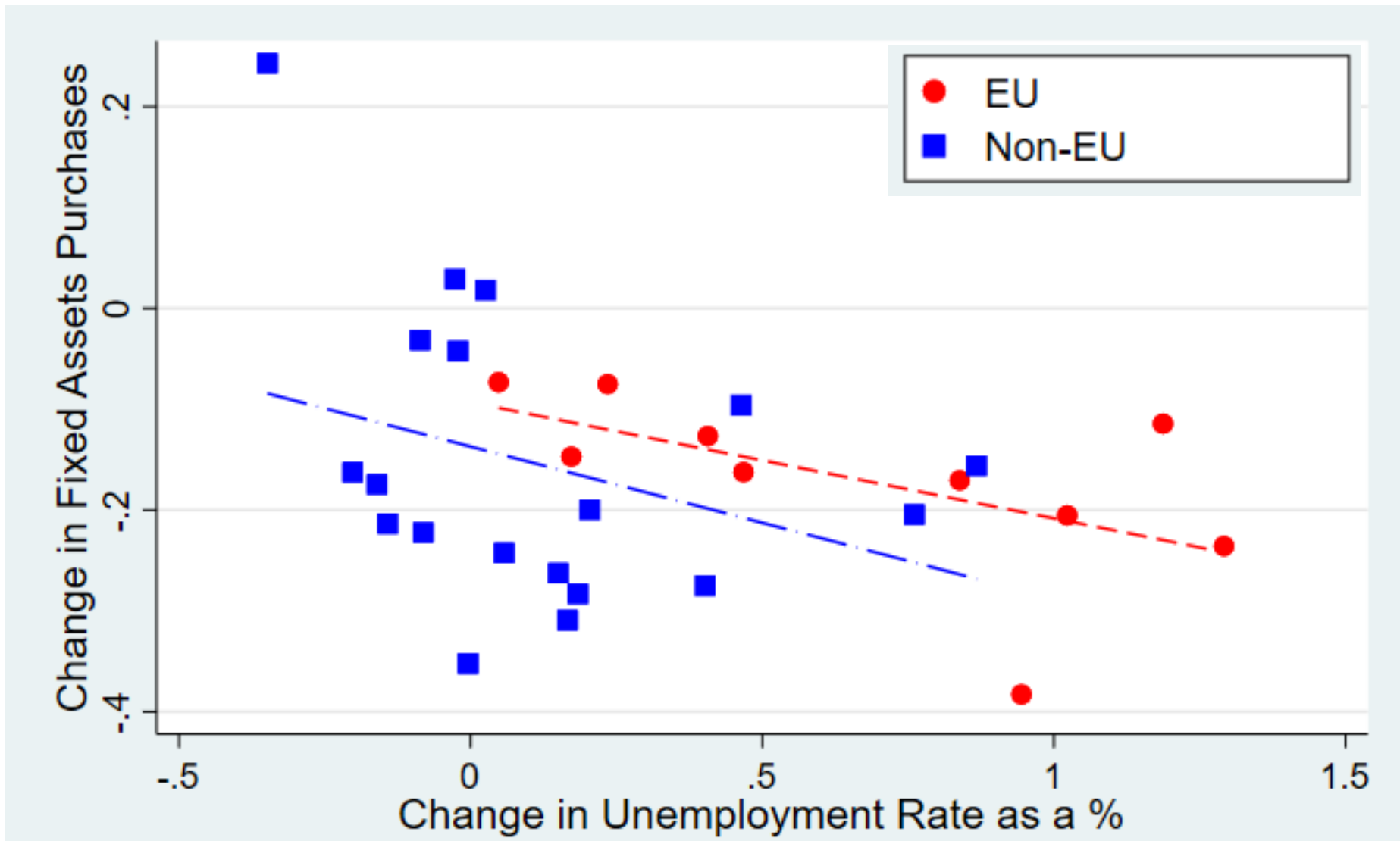
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	<b>% Fixed Asset Purchases 2008</b>	<b>% Fixed Asset Purchases 2013</b>	<b>Difference</b>
Kosovo	51%	75%	+24
Lithuania	79%	55%	-24

	<b>15+ Unempl 2008</b>	<b>15+ Unempl 2013</b>	<b>Percentage Change</b>
Kosovo	47.5%	30.0%	-35%
Lithuania	5.8%	13.4%	+129%



# Falling Investment Correlated with Increasing Unemployment

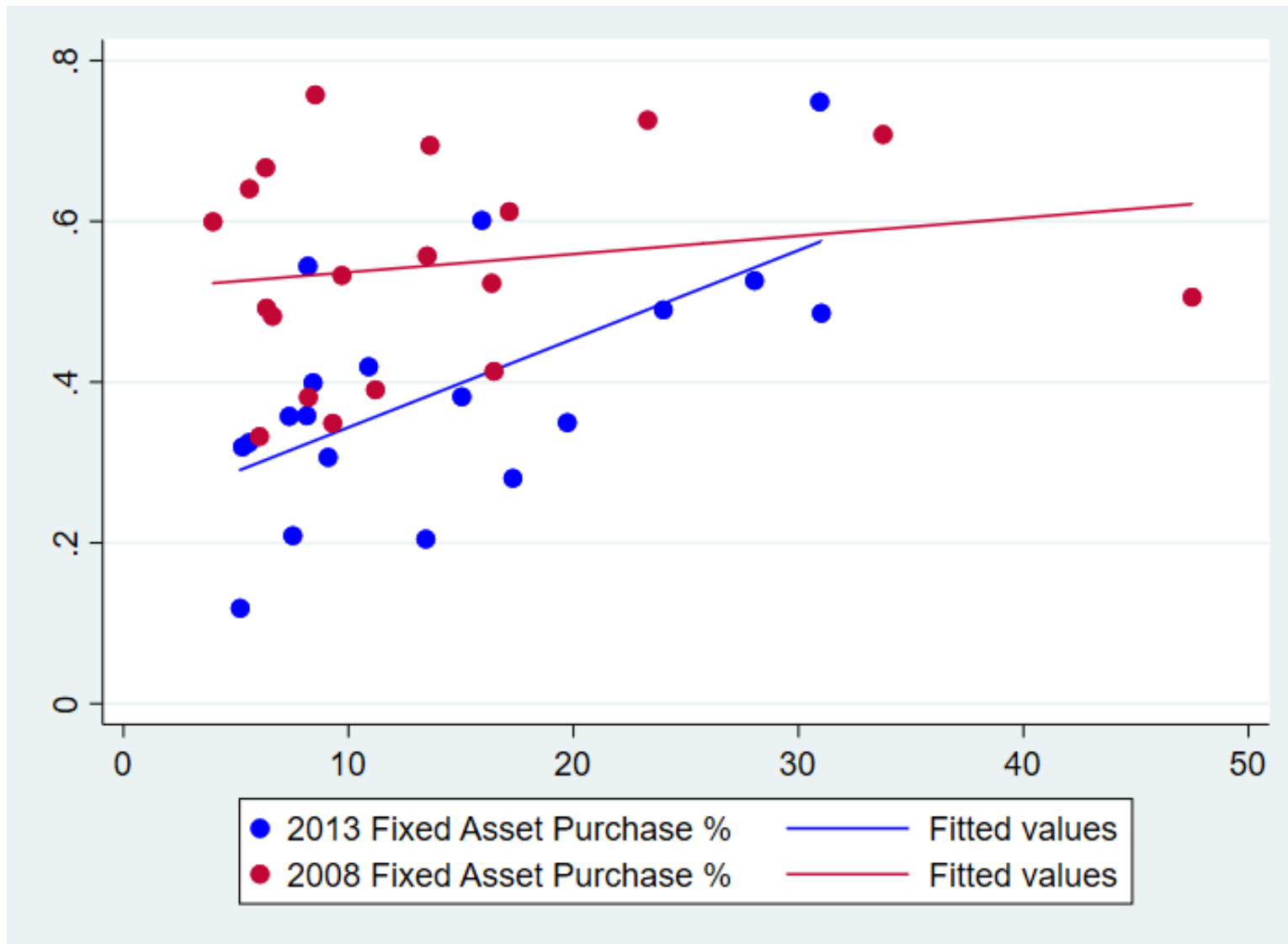


# Fixed asset purchases declined with increasing unemployment in EU countries

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# Fixed asset purchases “increase” with increasing unemployment in non-EU countries



# More firms using retained earnings and “other” sources of financing.

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Percentage of Firms Using Source to Fund Fixed Assets						
	2008			2013		
	Non-EU	EU		Non-EU	EU	
Retained Earnings	76.9%	81.3%	***	87.3%	89.1%	*
Bank Financing	38.4%	43.2%	***	25.4%	27.1%	
New Equity	15.1%	11.6%	***	10.0%	10.0%	
Trade Credit	13.3%	12.4%		9.1%	10.4%	
Other Sources	5.9%	8.1%	***	7.7%	10.1%	*

significant at \*10% level; \*\*5% level; \*\*\*1% level

Increasing reliance on retained earnings and moving away from new equity.

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## Source as a Percentage of Fixed Asset Financing if Source is Utilized

	2008			2013		
	Non-EU	EU		Non-EU	EU	
Retained Earnings	77.6%	71.6%	***	84.0%	80.8%	***
Bank Financing	59.5%	60.6%		56.4%	54.3%	
New Equity	58.1%	48.9%	**	47.5%	41.7%	*
Trade Credit	43.6%	46.3%		42.7%	44.2%	
Other Sources	48.7%	51.6%		46.1%	44.5%	

significant at \*10% level; \*\*5% level; \*\*\*1% level

# New Investment is down for young and old firms

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	Age 1-2	Age 3-4	Age 5-6	Age 7-8	Age 9-10	Age 11-12	Age 13+
2008							
Observations	368	730	933	993	1,062	1,187	4,985
Percentage of firms purchasing fixed assets	57.9%	55.1%	53.5%	54.8%	54.0%	55.7%	61.0%
2013							
Observations	427	1259	1368	1420	1,297	1,255	7,156
Percentage of firms purchasing fixed assets	38.4%	38.1%	37.1%	37.5%	36.3%	36.5%	41.6%

## Use of retained earnings for new investment is up for young and old firms

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### Percentage of Firms using Retained Earnings for New Fixed Assets

Not in the European Union							
	Age 1-2	Age 3-4	Age 5-6	Age 7-8	Age 9-10	Age 11-12	Age 13+
2008	72.5%	73.9%	72.9%	78.0%	79.0%	76.6%	77.5%
2013	88.6%	84.9%	91.4%	90.6%	83.2%	85.9%	87.1%
European Union Members							
2008	72.5%	78.6%	77.2%	80.0%	79.1%	76.9%	84.0%
2013	88.2%	85.0%	85.9%	84.7%	88.5%	90.4%	90.0%

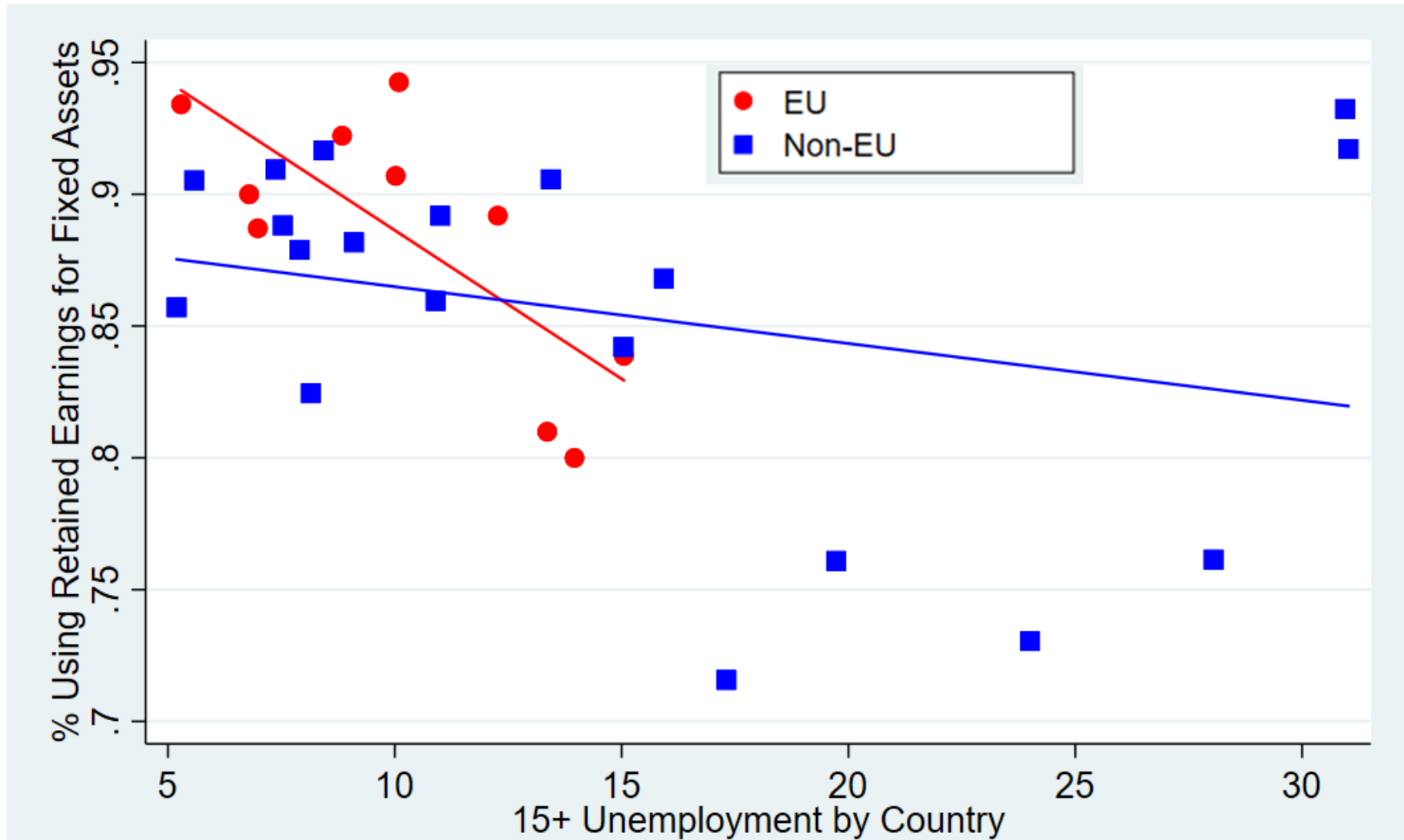
## Largest impact of decline in bank financing is felt by new firms in the EU

### Percentage of Firms using Bank Financing for New Fixed Assets

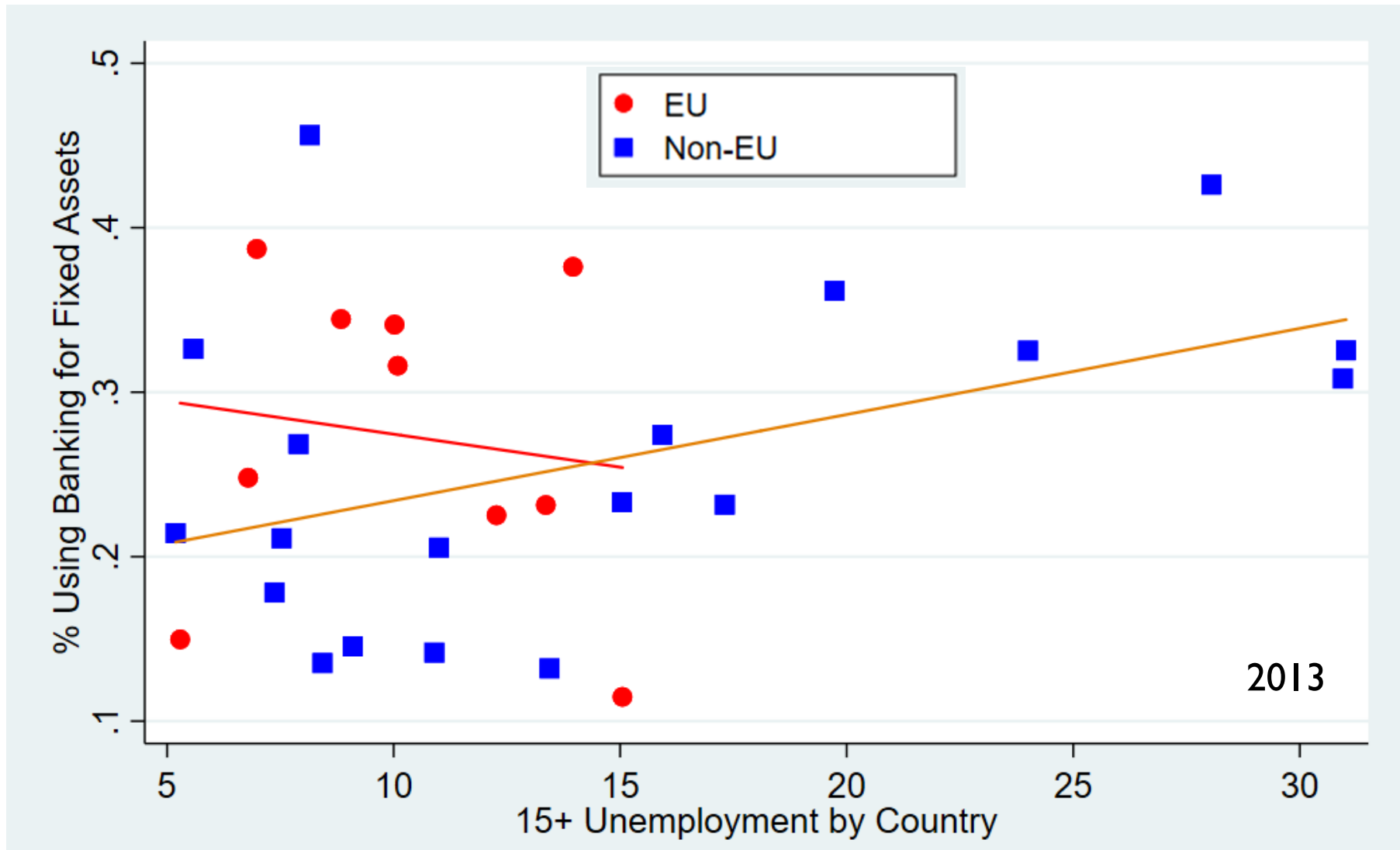
Not in the European Union							
	Age 1-2	Age 3-4	Age 5-6	Age 7-8	Age 9-10	Age 11-12	Age 13+
2008	28.8%	34.2%	33.2%	34.0%	37.5%	40.9%	41.5%
2013	17.0%	20.7%	21.7%	22.9%	25.7%	25.0%	28.3%
European Union Members							
2008	45.1%	40.5%	44.7%	38.4%	46.2%	44.4%	43.4%
2013	17.6%	11.7%	23.1%	25.2%	23.1%	28.9%	29.1%



# Use of retained earnings falls with unemployment by country



# Use of bank financing increasing with unemployment outside the EU



# Percentage of firms applying for loans declined

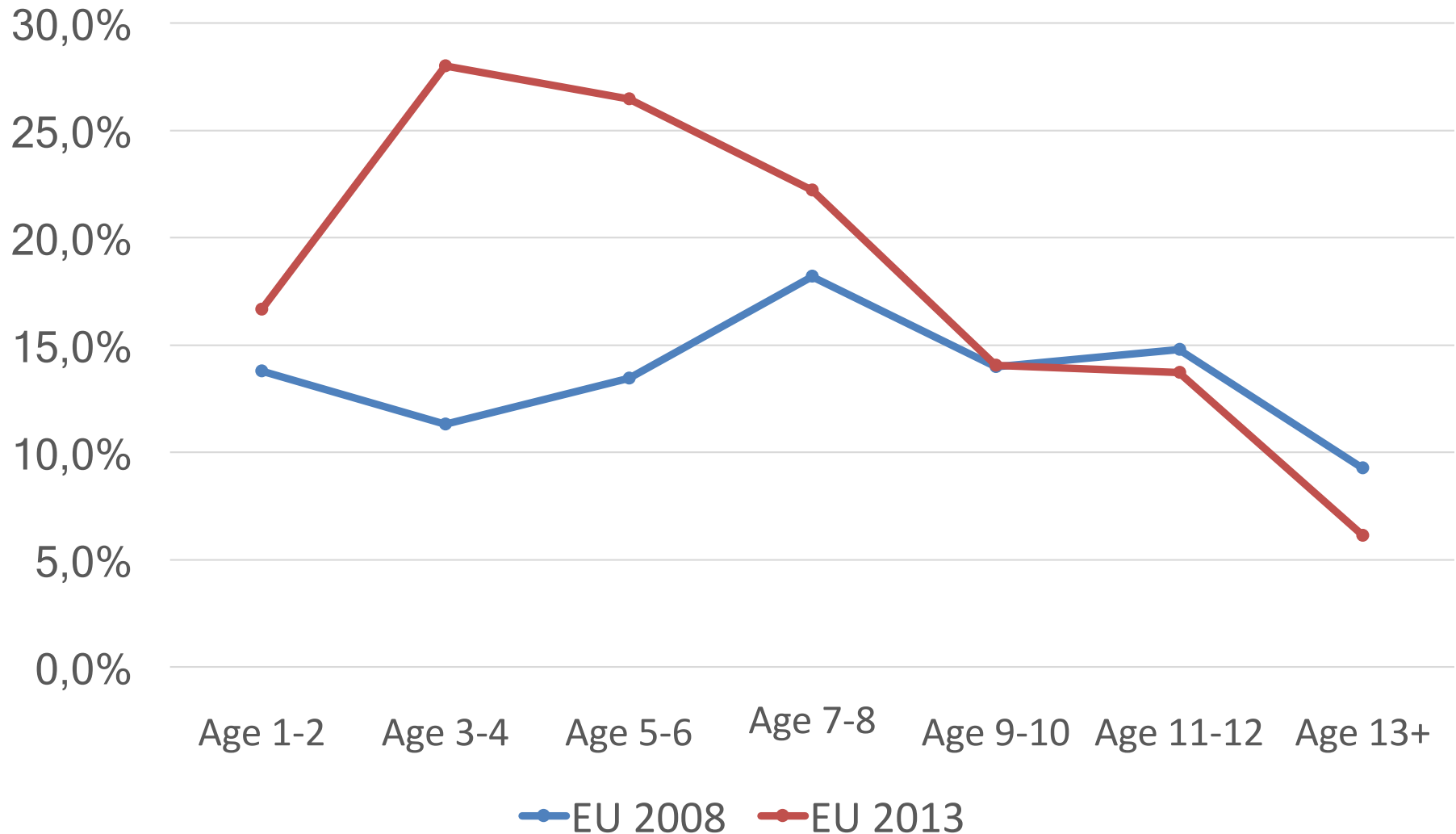
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	2008			2013		
	Non-EU Countries	EU Members		Non-EU Countries	EU Members	
Applied for Loan	43.6%	41.6%	*	27.2%	25.7%	*
Loan Rejected if Applied	17.0%	11.3%	***	13.2%	10.1%	**
No Need for Loan	33.9%	42.9%	***	46.1%	54.7%	***
Need But Did Not Apply	21.8%	14.0%	***	26.0%	18.2%	***

significant at \*10% level; \*\*5% level; \*\*\*1% level

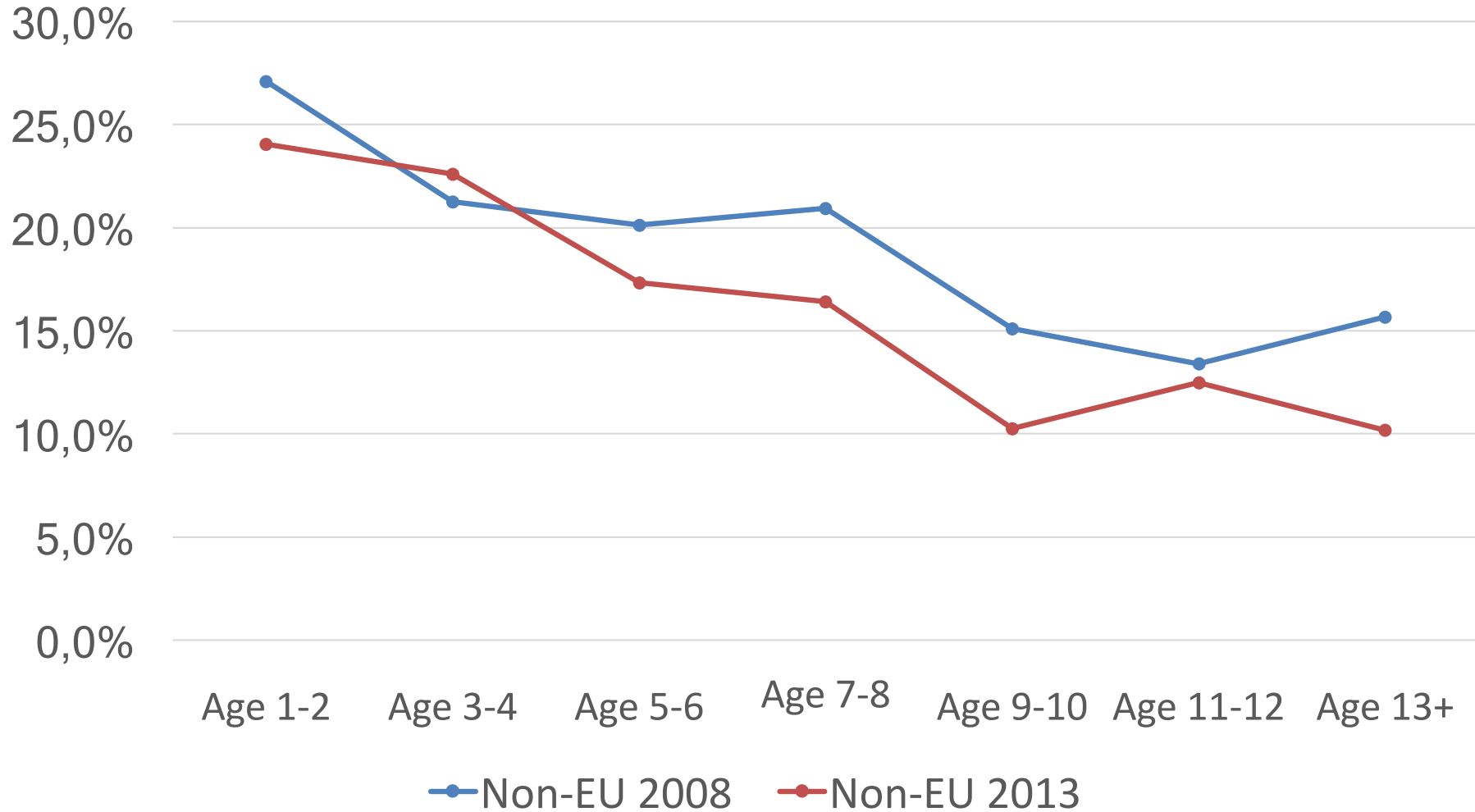
# Loan rejections increase for younger EU firms

Percentage of Firms with Most Recent Loan Rejected



# Younger firms still more likely to have a loan rejected in non-EU countries

Percentage of Firms with Most Recent Loan Rejected



# Determinants of New Investment and Financing Choices

	2008			2013		
	Fixed Assets	Retained Earnings	Bank Financing	Fixed Assets	Retained Earnings	Bank Financing
Ln Firm Age	-0.025	0.015	-0.007	-0.029	0.021	-0.005
	[0.01]***	[0.09]*	[0.56]	[0.01]***	[0.01]***	[0.01]
Sufficient Capital	-0.130	0.106	-0.369	-0.062	0.037	-0.126
	[0.00]***	[0.00]***	[0.00]***	[0.02]***	[0.02]**	[0.03]***
Needed Loan Did Not Apply	-0.147	0.037	-0.275	-0.101	0.007	-0.101
	[0.00]***	[0.28]	[0.00]***	[0.02]***	[0.02]	[0.02]***
Applied and not Rejected for Loan	0.088	-0.013	0.107	0.111	-0.078	0.209
	[0.00]***	[0.60]	[0.00]***	[0.02]***	[0.02]***	[0.04]***
Ln Full Time Employees	0.094	0.018	0.034	0.094	0.001	0.017
	[0.00]***	[0.00]***	[0.00]***	[0.01]***	[0.01]	[0.01]***
Censored Obs	58%	78%	40%	39%	88%	26%

# Conclusions

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- ▶ Investment in new fixed assets is down across ECA
- ▶ Increasing reliance on retained earnings and “other” sources
- ▶ Decreasing use of bank financing, new equity and trade credit
- ▶ Strong impact on small firms in EU countries
- ▶ Firms with access to credit are more likely to use it