Deregulation, Economic Growth and Growth Acceleration

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The political (and business) reaction to the crisis

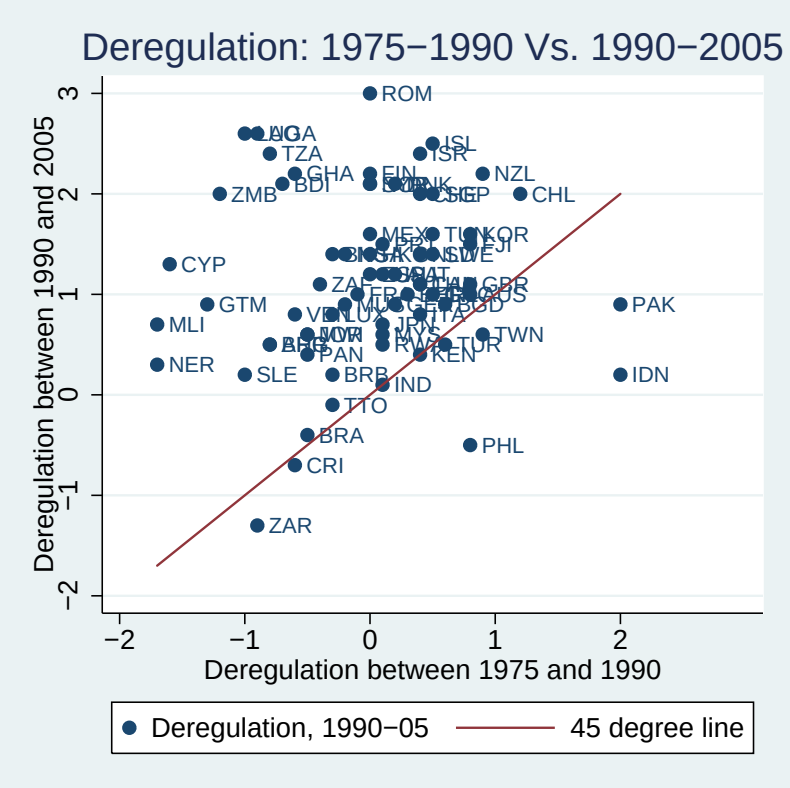
- Obama: "Instead of establishing a 21st century regulatory framework, we simply dismantled the old one. In doing so, we encouraged [...] devastating dislocations in our economy." (March, 2008)
- Merkel: "The Anglo-Saxon model of regulation has failed." (June, 2008)
- Sarkozy: "Let us rebuild together a regulated capitalism in which [...] financial activity [is] not left to the sole judgment of market operators." (Sept. 2008)
- Soros: "The current economic crisis has its roots in the financial deregulation of the 1980s and marks the end of a free-market model." (Feb. 2009)
- June 25 2010: the biggest reform in US financial regulation since the Great Depression (with perhaps the exception of repealing Glass-Steagal in 1999)

Expectations about the future policies

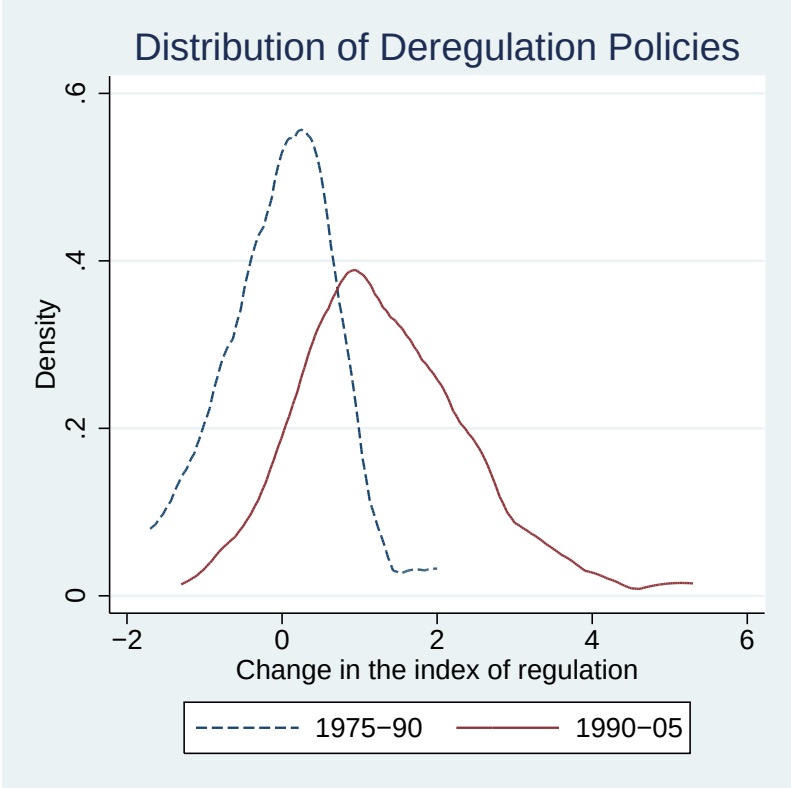
- A stronger regulatory role of the government after the crisis
  - More regulation of credit, and, perhaps labor markets
- Does it make sense to re-regulate?
  - What was the impact of deregulation on economic growth since 1975?
  - Why do we witness such impact?
- A Preview of the results:
  - The impact of deregulation on growth was positive only for the early reformers, and ambiguous in general
  - Because of a different distribution of firms reacting to deregulation within each economy

Overall deregulation trends since 1975

Deregulation (Winston, 1993): the state's withdrawal of its legal powers to direct pricing, entry and exit.



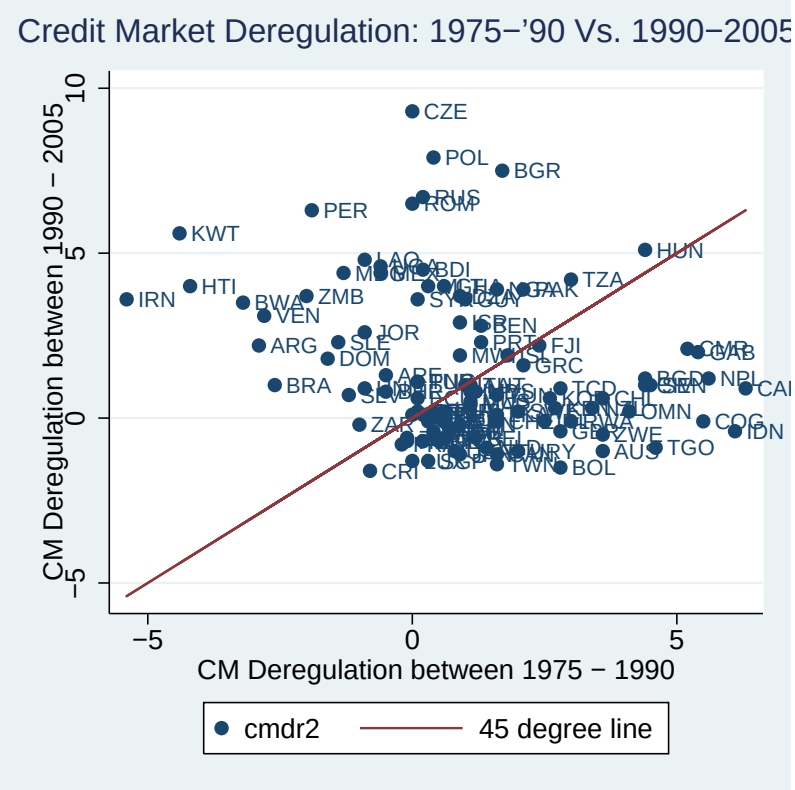
(a)



(b)

Source: Economic Freedom of the World data

Credit market deregulation trends since 1975: EFW data



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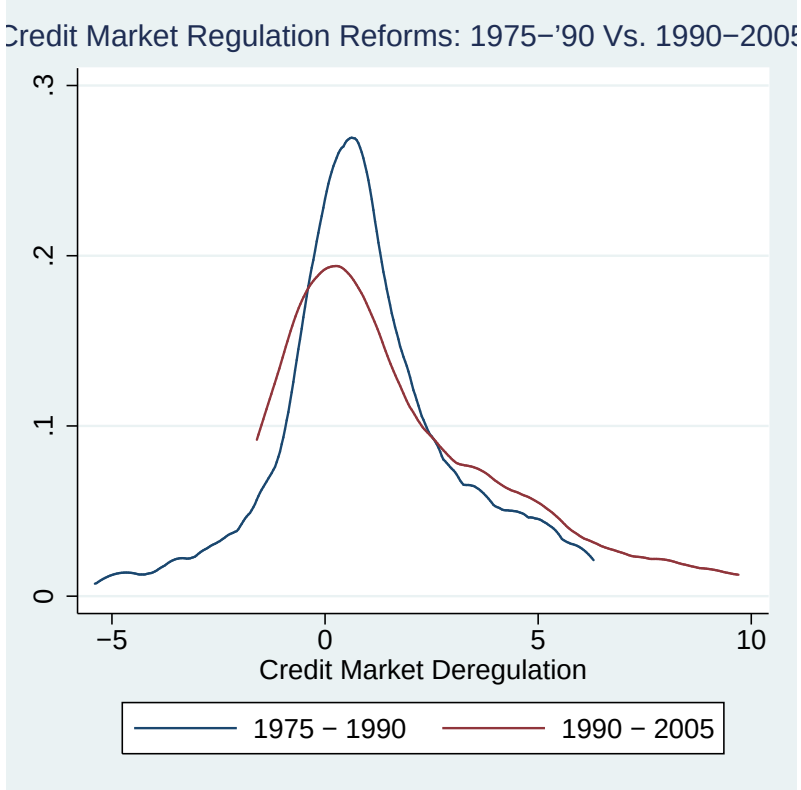

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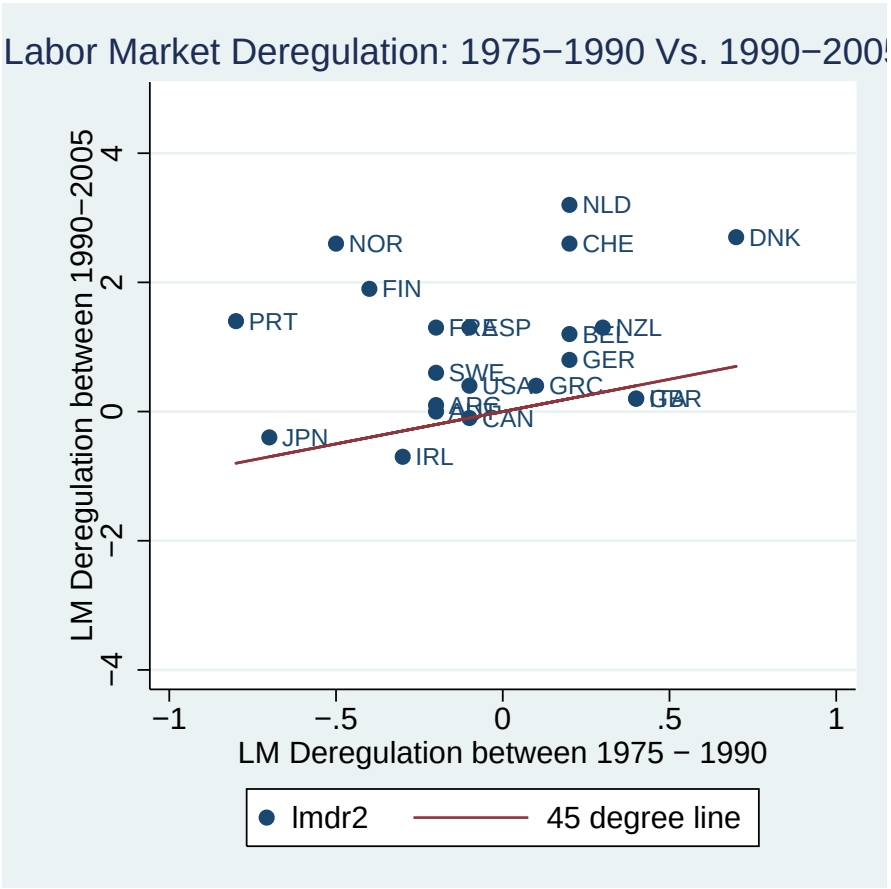
Figure : Credit Market Liberalization between Each Period

Deregulation trends since 1975: labor markets



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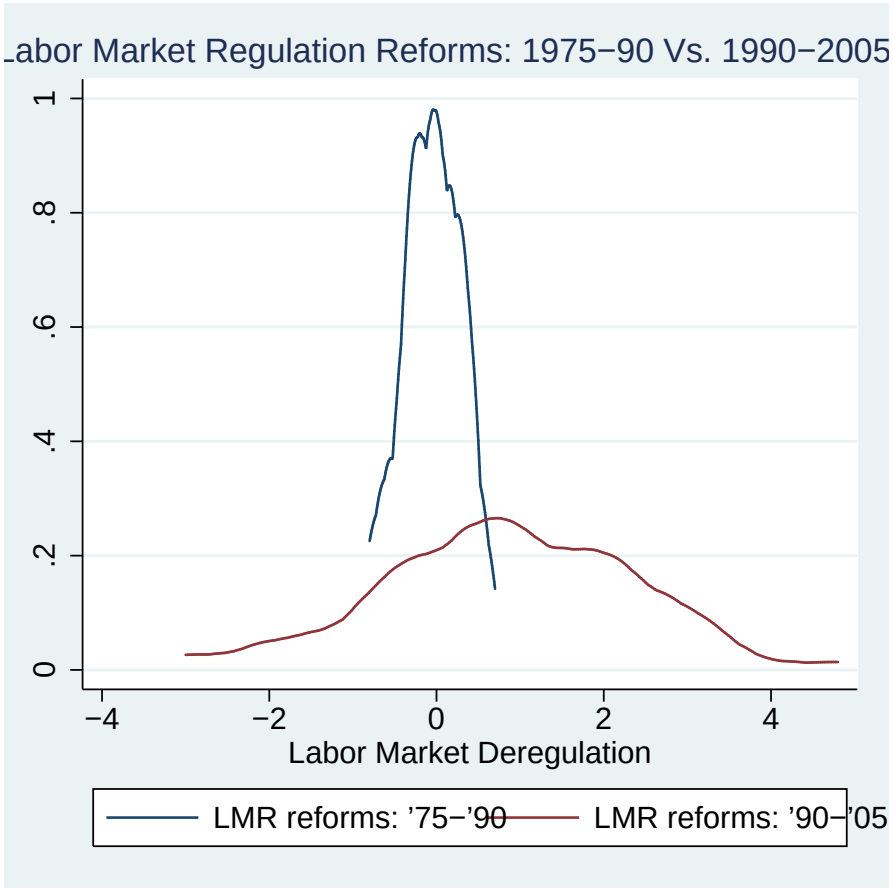

(b)

Figure : Labor Market Reforms between Each Period

What is this work about?

Main questions:

1. Did overall deregulation cause economic growth?
2. Did credit market liberalization (CML) cause economic growth?
3. Did the timing of liberalization reform matter for growth?

Table : Summary development statistics across types of reformers

	Early Ref.	Mar. Ref.	Late Ref.	Non-ref.
Mean Δ Avg. Log(GDP/c.)	.350	.386	.139	.051
Median Δ Avg. Log(GDP/c.)	.312	.301	.110	.057
Mean Δ compound g rate	-.446	-.165	1.095	.477
Median Δ compound g rate	-.526	.158	.501	.090
N	22	13	16	20

Source: Penn World Table 6.3, and Economic Freedom of the World data

Why is answering these questions important?

The answers fit into the debates about:

- estimating the impact of specific Washington Consensus reforms: eliminating price controls, allowing foreign ownership, freeing entry (in the banking sector)
- identifying the effects from deregulation on economic growth
- does it make sense to re-regulate the financial sector?

Deregulation and economic growth

Literature review

- Acemoglu, Aghion, Zilibotti (2006), JEEA: Limits on competition may be beneficial for backward countries
- Rodrick (2008), NBER WP: Imposing best-practice institutions on developing economies may not work on local turf, and may actually hamper performance
- Djankov, LaPorta, Lopez-de-Silanez, Shleifer (2002), QJE: Regulation hampers growth
- Estevadeordal and Taylor (2008), NBER WP: Reducing tariffs improved economic growth
- Babetskii and Campos (2007), CERGE-EI WP: "Remarkable variation" in empirical results on the effects of institutional reforms

Literature review

Finance and growth

- Levine (1998), JMCB: statistically significant and economically large relationship between the exogenous component of banking development and the rate of economic growth
- Demirguc-Kunt, Laeven and Levine (2004), JMCB: tighter regulations on bank entry and bank activities boost the cost of financial intermediation
- Bekaert, Harvey and Lundblad (2005), JFinE: liberalizing the equity market leads to a 1% point increase in the annual economic growth
- Levine (2005), HEG: financial intermediaries and financial markets matter for growth; a need to understand what drives financial development

Literature review

Main unresolved issues:

- Measurement of liberalization reforms
- Endogeneity

Deregulation and economic growth

Identification: D-i-D strategy

1. Use variation in the EFW indexes of credit market regulations between 1975-1990, and between 1990-2005;
2. Identify reformers and non-reformers: median and mean criteria;
3. Answer the question: Who had higher growth?

Deregulation and economic growth

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Δ R		Taxonomy	
1975-1989	1990-2004		
Ref.	NR	Early Reformer (ER)	Treatment
NR	Ref.	Late Reformer (LR)	Treatment
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NR	NR	Non-reformer	Control

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Advantages:

1. Gets around some of the measurement issues
2. Allows for dealing with endogeneity.

Estimation

Benchmark equation:

$$\Delta y_{it} = \beta_1 + \beta_2 \mathrm{ER}_{it} + \beta_3 \mathrm{LR}_{it} + \beta_4 \mathrm{MR}_{it} + \beta_5 X_{it} + \Delta \varepsilon_{it}, \qquad (1)$$

where y_{it}:

1. $Avg.\log(GDP)_{it}$, and
2. g_{it} – compound growth rate

Dealing with endogeneity

Is the timing of reform exogenous?

- Acemoglu and Robinson (2006): resources create rents for the elites
- Beck and Laeven (2006), JEG: the higher the rents, the later the reform.

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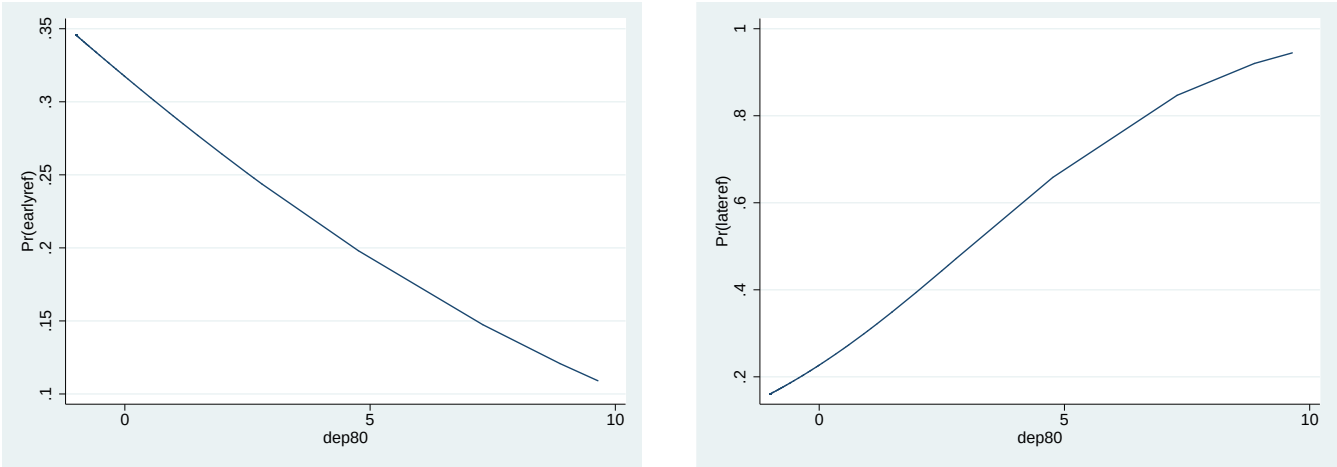

(a) (b)

Figure : Probability of early/late treatment and energy dependence

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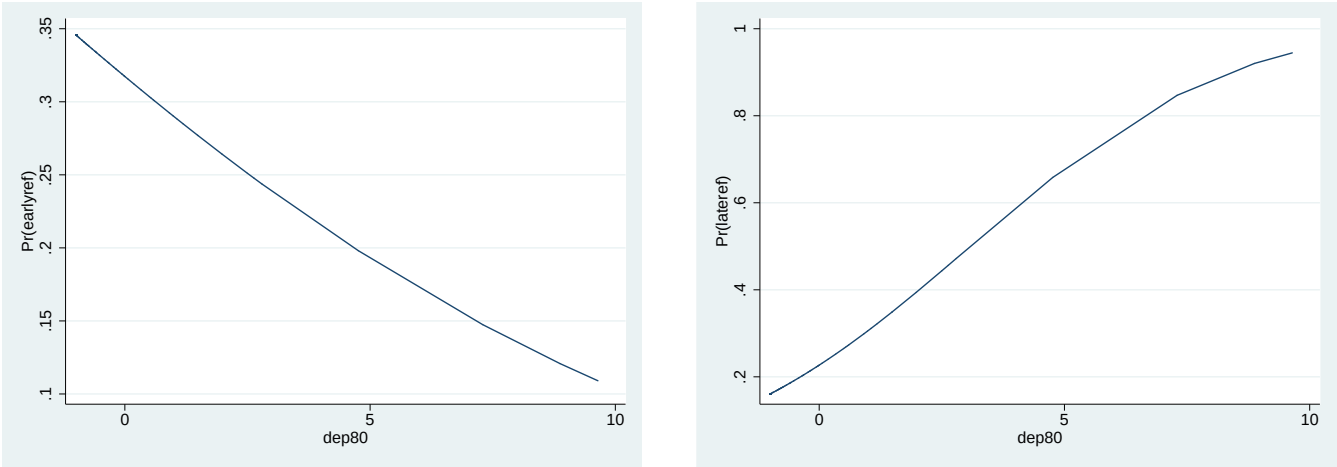

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Figure : Probability of early/late treatment and energy dependence

$$Dep_{it} = \frac{P_{it} - C_{it}}{C_{it}}$$

Data: Energy Information Administration of the US Govt.

Why does EFW CMR index measure liberalization?

Why EFW measures liberalization in the finance industry:

- interest rate controls
- foreign bank competition
- ownership of banks
- private sector credit

Other **better** datasets:

1. Caprio, Levine, Barth (2001, 2003, 2008 update): Bank regulation and supervision database: 3 periods, 107 countries, 12 dimensions
2. Abiad, Detragiache, Tressel (2008): A new database of financial reforms: 30 periods, 72 countries, 7 dimensions
3. Caprio, Klingebiel (1999, 2003): Episodes of systemic and borderline financial crises (possibly use as an instrument for the timing of the CML reform or reversal)

Dimensions in the CML datasets

1. Caprio, Levine, Barth (2001): bank entry, ownership, capital, powers and activities, auditing, organization, liquidity, provisioning, accounting and disclosure, incentives for supervisors, deposit insurance, and disciplining powers including bank exit.
2. Abiad (2008): 1) credit controls and reserve requirements, 2) interest rate controls, 3) entry barriers, 4) state ownership in the banking sector, 5) policies on securities markets, 6) (prudential supervision) banking regulations; 7) restrictions on the capital account.

Difference in Average Log(GDP/c.): 1975-1990 Vs. 1990-2004								
	Using median criterion				Using mean criterion			
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ER	.298***	.539***	-	-	.283***	.503***	-	-
	(.097)	(.166)			(.103)	(.162)		
LR	.157	.285	-	-	.009	.007	-	-
	(.109)	(.219)			(.137)	(.277)		
MR	.324**	.574***	-	-	.292**	.480***	-	
	(.128)	(.202)			(.118)	(.184)		
CM-ER	-	-	.077	.243	-	-	.109	.216
			(.091)	(.173)			(.078)	(.146)
CM-LR	-	-	-.223**	-.353***	-	-	-.151	-.321***
			(.102)	(.121)			(.094)	(.114)
CM-MR	-	-	-.079	.001	-	-	-.072	-.128
			(.093)	(.186)			(.105)	(.122)
FT-ER	-.063	-.417*	.063	-.071	-.051	-.350	.085	.037
	(.110)	(.226)	(.090)	(.164)	(.095)	(.213)	(.088)	(.155)
FT-LR	-.089	-.337*	.032	.182	-.065	-.339**	.081	.294*
	(.094)	(.176)	(.084)	(.147)	(.107)	(.164)	(.083)	(.155)
FT-MR	-.055	-.216	.098	.044	-.055	-.111	.108	.099
	(.093)	(.163)	(.082)	(.125)	(.110)	(.165)	(.089)	(.132)
Log(RGDP-'75)	.041	.031	.039	.061	.019	-.006	.046	.063
	(.036)	(.040)	(.036)	(.043)	(.041)	(.044)	(.037)	(.040)
Const.	-.259	-.127	-.146	-.372	-.059	.207	-.262	-.448
	(.331)	(.369)	(.363)	(.463)	(.377)	(.416)	(.360)	(.413)
R^2	0.233	0.373	0.185	0.324	0.235	0.382	0.148	0.307
J-Test	-	0.289	-	0.232	-	0.593	-	0.159
N	68	67	92	91	68	67	92	91

Difference in Compound GDP/c. growth: 1975-1990 Vs. 1990-2004								
	Using median criterion				Using mean criterion			
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ER	-.975	-.805	-	-	-.551	-.437	-	-
	(.699)	(1.370)			(.812)	(1.21)		
LR	-.021	1.879	-	-	2.043	5.064**	-	-
	(1.11)	(1.737)			(1.412)	(1.981)		
MR	-.219	-1.148	-	-	-.202	-.590	-	
	(.847)	(1.935)			(1.016)	(1.637)		
CM-ER	-	-	.434	-.714	-	-	.627	.005
			(.587)	(1.126)			(.525)	(1.163)
CM-LR	-	-	1.609*	3.242***	-	-	1.622*	3.644***
			(.885)	(.999)			(.855)	(1.004)
CM-MR	-	-	1.278	.083	-	-	1.016	.502
			(.790)	(1.870)			(.981)	(1.858)
FT-ER	-.365	-.172	-.576	-.527	-.294	-.115	-.521	-.179
	(.708)	(1.741)	(.590)	(1.285)	(.780)	(1.558)	(.609)	(1.226)
FT-LR	1.594	2.950*	1.076	1.399	1.453	3.549**	.992	1.726
	(1.100)	(1.637)	(.830)	(1.560)	(1.124)	(1.728)	(.802)	(1.629)
FT-MR	1.136	.746	.929	.661	1.160	-.004	.927	.153
	(.751)	(1.366)	(.694)	(1.485)	(.858)	(1.527)	(.690)	(1.692)
Log(RGDP-'75)	.169	.511	.484*	.568*	.413	.898*	.479*	.616*
	(.264)	(.339)	(.263)	(.333)	(.329)	(.480)	(.271)	(.350)
Const.	-1.530	-4.986	-5.088**	-5.603	-3.949	-8.678*	-4.876*	-6.315*
	(2.321)	(3.195)	(2.534)	(3.731)	(2.859)	(4.458)	(2.549)	(3.796)
R^2	0.127	-0.104	0.150	-0.058	0.168	-0.152	0.122	-0.055
J-Test	-	0.469	-	0.547	-	0.459	-	0.432
N	68	67	92	91	68	67	92	91

Robustness checks

Will our results hold?

1. Apply a standard diff-in-diff
2. Use World Bank Development Indicators
3. Use other instruments: the depth of the Great Depression

Table : Classic diff-in-diff: Non-reformers Vs. Late reformers

	Panel A: Level effects			
lr	0.198*	0.192*		
	(0.106)	(0.0924)		
ftlr	-0.0996	-0.171*	0.0465	0.0832
	(0.115)	(0.0980)	(0.103)	(0.108)
ligdpc	0.109**	0.123***	0.0311	0.0543
	(0.0482)	(0.0467)	(0.0575)	(0.0584)
cmlr			-0.169	-0.168
			(0.113)	(0.126)
Constant	-0.865*	-0.978**	-0.103	-0.327
	(0.455)	(0.443)	(0.550)	(0.574)
Observations	33	32	40	39
R^2	0.191	0.199	0.101	0.149
	Panel B: Acceleration effects			
lr	-0.312	0.447		
	(1.183)	(1.171)		
ftlr	1.728	1.964	0.594	2.609**
	(1.730)	(1.539)	(1.194)	(1.223)
ligdpc	-0.209	-0.128	0.768*	1.031**
	(0.387)	(0.397)	(0.393)	(0.436)
cmlr			1.999**	3.354***
			(0.970)	(0.961)
Constant	1.922	0.868	-7.254*	-10.83***
	(3.467)	(3.528)	(3.683)	(4.149)
Observations	33	32	40	39
R^2	0.060	0.041	0.141	0.001

Table : Classic diff-in-diff: Early reformers Vs. Marathon reformers

	Panel A: Level effects			
er	-0.0229	0.0703		
	(0.0856)	(0.0895)		
fter	0.0623	0.0629	0.0720	0.0184
	(0.0913)	(0.106)	(0.0970)	(0.0999)
ligdpc	-0.0361	-0.0232	0.0254	0.0357
	(0.0469)	(0.0479)	(0.0426)	(0.0432)
cmer			0.130*	0.140
			(0.0734)	(0.0869)
Constant	0.672	0.499	-0.0621	-0.138
	(0.440)	(0.444)	(0.360)	(0.355)
Observations	35	35	42	42
R^2	0.033	-0.003	0.105	0.096
	Panel B: Acceleration effects			
er	-0.511	-0.0886		
	(0.669)	(0.696)		
fter	-0.682	-0.513	-0.638	-0.845
	(0.651)	(0.677)	(0.586)	(0.598)
ligdpc	0.241	0.270	0.174	0.210
	(0.243)	(0.245)	(0.248)	(0.239)
cmer			-0.275	-0.0993
			(0.602)	(0.764)
Constant	-1.876	-2.472	-1.260	-1.607
	(2.369)	(2.348)	(2.120)	(2.050)
Observations	35	35	42	42
R^2	0.060	0.045	0.032	0.027

Conclusions

We find that:

1. Both overal deregulation and CMR reform contributed to GDP/c. and growth acceleration but it did so differently across various types of reformers:
   - early and marathon reformers had higher GDP/c.
   - a large positive and significant acceleration effect from the credit market deregulation for the *late* reformers.
   - reform reversals do not add anything to growth – no point in a large-scale re-regulation after the crisis
2. there could be large dynamic welfare losses if credit market deregulation reforms lose momentum after the global financial and economic crisis of 2008-2010.

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Contributions:

- measurement and endogeneity at the same time
- insight into the lack of consensus on the impact of reforms on growth

Further agenda

1. Timing of reform matters: a dynamic framework is needed
2. Identification by own path of reforms
3. More specific reforms need to be addressed: overall deregulation, and even CMR, are too general
4. Use the within-country distribution of firms to get further insight into the reaction to reforms

Q & A