

Industry Diversification and Financial Development

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Introduction

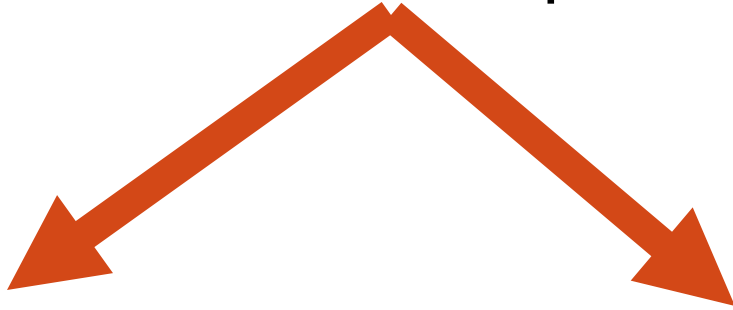
1. Related literature
2. Theoretical ideas on industry diversification
3. Econometric results on industry diversification
4. Conclusions and policy implications

Introduction

Industry (sector) diversification



Financial development



Less volatility

Economic growth



Financial Development literature

- Mostly based on the financial repression literature of McKinnon, 1973 and Shaw, 1973
- Legal determinants: La Porta et al., 1997 (protection property rights)
- Institutions matters: Beck et al., 2003 (settler vs. extractive colonization) and Rajan and Zingales, 2003 (interest group block competitions)
- Trade openness : Baltagi et al, 2009 and Huang and Temple, 2005
- Inflation (or macroeconomic instability)
- Income levels (demand financial services)
- Geographic factors

Industry Diversification Literature

- Acemoglu and Zilibotti, 1997: limited number of project (market incompleteness) limits capital accumulation and growth
- Hausmann and Rodrik, 2003: Economic Development as Self-Discovery
- Hidalgo et al., 2007: The Product Space Conditions the Development of Nations
- Koren and Tenreyro, 2007: poor countries specialize in fewer and more volatile sectors
- Schclarek, 2007: industry diversification leads to financial development

Theoretical Model

- Example: Banana Republic vs. Industry Diversified Country
- Entrepreneurs need Credit from Banks and the Financial System
- Horizontal Innovation leads to Industry Diversification
- Sector-specific Shocks affect Investment Projects
- Industry Diversification allow Risk Diversification by Banks and Increase Total Liquidity (Credit)

Econometric Methodology

Cross Section Model

$$\ln Fin_i = \alpha_0 + \alpha_1 \ln Apertura_i + \alpha_2 \ln Inflación_i + \alpha_3 \ln PBIpc_i + \alpha_4 \ln DivSec_i + \alpha_5 \ln Inst_i + \alpha_6 OrigenLegal_i + \mu_i$$

Econometric Methodology

Dinamic Panel Data Model

$$\ln Fin_{it} = \alpha_0 + \alpha_1 \ln Fin_{it-1} + \alpha_2 \ln Apertura_{it-1} + \alpha_3 \ln Inflación_{it-1} + \alpha_4 \ln PBIpc_{it-1} + \alpha_5 \ln DivSec_{it-1} + \alpha_6 kaopen_{it-1} + \mu_{it}$$

Data

Variable	Source
Financial Development	Financial Structure Dataset
Real GDP per capita	WDI
Inflation	WDI
Trade Openness	WDI
Financial Openness	Chinn-Ito Index (2010)
Institutional Quality	ICRG and PolityIV Database (Marshall and Jaggers, 2009)
Legal Origin	Shleifer
Export (used to construct industry diversification variables)	Feenstra et al.(2005)

Data

Financial Development

1. FIN1: Liquid Liabilities/GDP
2. Fin2: Bank Credit/ Bank deposits
3. Fin3: Private Credit By Deposit Money Bank/GDP
4. Fin4: Private Credit By Deposit Money Bank and Other Financial Institutions/GDP
5. Fin5: Principal Component Variable

Data

Industry Diversification

1. DivSec1: Herfindahl Index
2. DivSec2: Hirschman Index
3. DivSec3: Theil Index
4. DivSec4: Ogive Index
5. DivSec5: Principal Component Variable

Estimation Results-Cross section

Dependent Variable- Private Credit By Deposit Money Bank/GDP

Variables	HER	HIR	THEIL	OGV	DivSec
Trade Opennes	0.56***	0.56***	0.52***	0.52***	0.54***
Inflation	-0.27***	-0.27***	-0.26***	-0.26***	-0.26***
DivSec	-0.25***	-0.25***	0.42	-0.17*	-0.16**
GDPpc	0.39***	0.39***	0.43***	0.41***	0.41***
Inst	0.54	0.54	0.52	0.75	0.57
Legal-uk	0.48**	0.48**	0.54**	0.52**	0.49**
Legal-fr	0.35	0.35	0.39	0.43	0.37
Legal-ge	0.27	0.27	0.36	0.35	0.29
Constant	-7.77***	-7.77***	-4.94***	-8.1	-7.44
R2	0.81	0.81	0.81	0.8	0.81

Estimation Results-Cross section

Dependent Variable	HER	HIR	THEIL	OGV	DivSec
Liquid Liabilities/GDP	-0.12* R2:0.73	-0.24* R2:0.72	0.23 R2:0.72	-0.09* R2:0.72	-0.08** R2:0.72
Bank Credit/Bank Deposit	-0.13* R2:0.47	-0.26* R2:0.47	0.15 R2:0.45	-0.09 R2:0.46	-0.08 R2:0.46
Private Credit By Deposit Money Bank and Other financial Institutions/GDP	-0.25*** R2:0.81	-0.49*** R2:0.81	0.44 R2:0.8	-0.16 R2:0.79	-0.16** R2:0.8
Principal Component	-0.39*** R2:0.81	-0.79*** R2:0.81	0.65 R2:0.8	-0.26* R2:0.79	-0.25** R2:0.81

Estimation Results-Dynamic Panel-Data

Dependent Variable- Private Credit By Deposit Money Bank/GDP

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
FIN _{t-1}	0.67***	0.67***	0.67***	0.64***	0.66***
Trade Openness	-0.017	-0.018	-0.016	-0.014	-0.016
Inflation	-0.019***	-0.019***	-0.019***	-0.019***	-0.019***
DivSec	-0.032***	-0.064***	0.065***	-0.035***	-0.028***
GDP _{pc}	0.66***	0.66***	0.66***	0.68***	0.66***
Kaopen	0.019**	0.019**	0.018*	0.022**	0.019*
Constant	-6.01***	-6.01***	-5.58***	-6.29***	-6.03***

Conclusion and Policy implications

- Higher industry diversification:
 - higher financial development
 - higher growth, less volatility
- Industry diversification: -externality
-growth (directly/indirectly)
- Government subsidy good for growth, especially horizontal innovation (new industries)
- Govt. Policy: credit policy, fiscal policy, education and R&D policy, coordination of innovation policy, etc.