

Finance and Oil

Is there a natural resource curse in finance?

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Motivation

- Finance is important for growth and poverty alleviation
 - Cross-country, time-series, industry- and firm-level evidence show positive relationship, beyond correlation
 - Banks and markets matter, but not relative importance of either
 - Lowest income quintile benefits most!
- Does the same relationship hold for resource-based economies?
 - Policy implication in terms of priority areas
- Is there a natural resource curse in financial development?
 - Crowding out effects

How to measure resource-abundance and reliance?

- Natural resource (ores, metal and fuel) exports to GDP
 - Measure of dependence or reliance
 - Top in 2007:
 - Bahrain: 67.6%
 - UAE: 60.6%
 - Saudi Arabia: 55.3%
 - ...
 - Algeria: 43.5%
- Subsoil assets per capita:
 - Measure of abundance or wealth, estimated as of 1980
 - Top:
 - Kuwait: 173,313
 - UAE: 119,952
 - Saudi Arabia: 79,808
 - ...
 - Algeria: 11,670

Finance and growth - hypotheses

- Fewer finance-reliant sectors in the economy – finance less important for growth
- Counter-effect against Dutch disease phenomenon – finance more important for growth
- Financial system important as counter-effect against real exchange rate volatility in resource-based economies

Finance and growth – results (1)

	(1)	(2)	(3)	(4)	(5)	(6)
	GDP pc growth	GDP pc growth	GDP pc growth	GDP pc growth	Growth in Gini	Growth in Gini
Private Credit	0.00735**	0.00798***		0.0105***	-0.00521**	-0.00467*
Natural Resource Exports	-0.0284***	-0.0360**	-0.0368**		0.0212**	0.00453
Natural Resource Exports*		-0.00657				-0.0108
Private Credit						
Liquid Liabilities			0.0101***			
Natural Resource Exports*			-0.00912			
Liquid Liabilities						
Subsoil Assets				-0.00064		
Subsoil Assets*				-0.00033		
Private Credit						
Observations	104	104	102	102	64	64
R-squared	0.419	0.421	0.411	0.381	0.322	0.329

Data averaged over 1980 to 2007, controls: inflation, government consumption, trade openness, years of schooling, initial GDP pc

Finance and growth – results (2)

	Industry growth	Industry growth	Industry growth
Initial share	-0.936***	-1.080***	-1.111***
Private Credit*External dependence	0.0804**	0.0535	0.0766**
Private Credit*External dependence*	0.0408		
Natural resource exports			
External dependence*natural resource exports	0.111		
Private Credit*External dependence*		0.00922	
Subsoil assets			
External dependence*Subsoil Assets		-0.0046	
Private Credit*External dependence*			0.163*
Natural resource dummy			
External dependence*natural resource dummy			-0.0677
Observations	1,105	1,132	1,147
R-squared	0.302	0.277	0.281

Industry data averaged over 1980 to 1990, controls for country and industry dummies

Finance and growth – results (3)

- Same positive relationship between finance and growth in resource-based economies as in overall sample of countries
- Weak evidence that the relationship might be even stronger in resource-based economies when considering industry growth
- Same negative relationship between finance and changes in Gini in resource-based economies as in overall sample of countries

Resource curse in finance - hypotheses

Pro

- Crowding out of investment and skills in financial sector
- Resource curse in institutional development undermines financial development
- Lower savings rate in resource-based economies
- Lower demand for external finance in resource-based economies

Con

- Windfall gains from natural resources lead to higher demand for financial services

Resource curse in finance – results (1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Private Credit	Private Credit	Liquid Liabilities	Loan- deposit ratio	Stock market capitalization	Stock market turnover	Structure- Size	Structure- Efficiency
Inflation	-1.750***	-0.39	-1.976***	-0.032	0.106***	-0.0296	0.45	0.00762**
GDP per capita	0.181***	0.188***	0.178***	0.0349	0.256***	0.0911*	0.128**	-0.000205
Time to enforce contract	-0.000178	-0.000132	-6.72E-05	-0.000238	-0.000201	-0.000231	2.62E-05	-1.37E-05
Information sharing	0.00568	0.0197	-0.0602**	0.0654***	-0.043	0.0452*	-0.0226	0.00203*
Natural Resource Exports	-0.658***		-0.733***	0.384	0.0148	-0.704***	1.557***	-0.0251**
Subsoil Assets		-0.0145**						
Observations	142	149	140	152	106	106	102	103
R-squared	0.662	0.6	0.464	0.178	0.359	0.159	0.193	0.073

Data averaged over 2000 to 2007

Lower levels of financial development in resource-based economies, but not lower intermediation

Resource curse in finance – results

(2)

	(1)	(2)	(3)	(4)	(5)
	Private Credit	Private Credit	Private Credit	Private Credit	Private Credit
GDP per capita	0.902***	1.100***	1.304***	1.526***	1.544***
Inflation	-0.0538***	-0.0543***	-0.0481***	-0.0393***	-0.0477***
Natural Resource Exports	2.014***	1.655**		-4.034***	
Natural Resource Exports*	-0.418***	-0.375***		0.205	
GDP per capita					
Trade	0.194***	0.505***	1.116***	0.921***	0.924***
Trade *		-0.0433***	-0.132***	-0.112***	-0.122***
Natural Resource Exports*					
Real exchange rate				-0.000642***	-0.00279***
Real exchange rate*				0.00608***	
Natural Resource Exports					
Subsoil Assets*			0.0232***		0.000875
GDP per capita					
Subsoil Assets*					0.000601***
Real exchange rate					
Observations	3,428	3,428	4,315	1,803	1,770
R-squared	0.401	0.402	0.317	0.365	0.352
Number of countries	148	148	153	86	84

Resource curse in finance – results (3)

- “Income elasticity” of financial deepening lower in countries with higher natural resource reliance
 - Not driven by overall trade
- “Income elasticity” of financial deepening higher in countries with higher natural resource wealth
- Real exchange appreciation results in lower financial development in countries with high natural resource reliance and wealth, more important than the differential income effect

Are banks different in resource-based economies?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Fee income	Non deposit funding	Loan-deposit ratio	Liquid assets	Cost-income ratio	Overhead costs	Net interest margin	Z-score	Equity-asset ratio	ROA
Fixed Assets	1.444**	-0.0316	-0.0594**	-0.257	3.549***	0.597***	0.00270**	-0.563*	0.277**	-0.0289
Nonloan earning assets	0.192***	0.00139	-0.0159**	0.542***	0.0378	0.00114	-0.000186	-0.0603**	0.0108	0.000852
Size	-0.375	0.555**	-0.0482**	-1.667***	-1.695***	-0.406***	-0.00284*	-0.43	-1.988***	-0.0496**
GDP per capita	0.903	-0.32	0.0245	-0.0552	2.045***	-0.0176	-0.00363*	2.299***	0.462**	-0.0988***
Natural Resource Export	2.447	-1.589	0.223	16.47***	-24.73***	0.366	0.0162	-1.027	6.302***	2.276***
Observations	2,169	3,519	3,447	3,571	3,435	3,460	3,450	3,541	3,570	3,563
R-squared	0.061	0.014	0.136	0.523	0.154	0.408	0.268	0.075	0.341	0.132
Number of countries	115	116	116	116	116	116	116	116	116	116

- Banks in resource-based economies are more liquid, more profitable and better capitalized
- They do NOT have a different business model, are NOT more stable, are NOT more efficient

Firms' access to finance in resource-based economies

	Resource Based Economies	Non-resource based economies	Difference	p-value T-stat
		Small enterprises		
External finance in working capital	23.70	30.74	-7.042	0.0272
External finance in investment	28.06	37.48	-9.424	0.0122
Share of firms with loan	23.32	33.02	-9.709	0.0059
Share of firms with severe financing obstacles	16.31	16.84	-0.525	0.8047
		Medium-size enterprises		
External finance in working capital	30.13	39.51	-9.377	0.0034
External finance in investment	30.29	41.90	-11.613	0.0004
Share of firms with loan	36.69	49.00	-12.317	0.003
Share of firms with severe financing obstacles	13.55	12.90	0.654	0.7031
		Large enterprises		
External finance in working capital	33.05	42.82	-9.773	0.0095
External finance in investment	34.83	43.40	-8.571	0.0216
Share of firms with loan	49.59	59.83	-10.243	0.0243
Share of firms with severe financing obstacles	12.14	11.16	0.983	0.6147

Firms of all sizes get less external finance in resource-based economies, but do NOT report higher

obstacles

Finance in resource-based economies – the firms' view

	Resource Based Economies	Non-resource based economies	Difference	p-value T-stat
Do you have a loan?	30.783	42.079	-11.296	0.007
If you do not have a loan, did you apply for a loan?	13.271	13.395	-0.124	0.933
Why did you not apply for a loan				
No need for a loan - establishment has sufficient capital	47.288	61.363	-14.075	0.001
Application procedures for loans or lines of credit are complex	15.561	8.152	7.409	0.000
Interest rates are not favorable	14.262	13.003	1.260	0.510
Collateral requirements are too high	6.865	6.342	0.523	0.646
Did not think it would be approved	7.364	6.488	0.877	0.562

- Fewer firms have loans, but NOT due to a lack of demand
- Higher burden to accessing external finance

Banking sector outreach in resource-based economies

	(1)	(2)	(3)	(4)
VARIABLES	Branches per capita	Accounts per capita	Branches per capita	Accounts per capita
Inflation	-0.668	-180.6***	-1.093	-128.8*
GDP per capita	5.175***	546.8***	5.387***	532.9***
Time to enforce contract	0.000966	-0.243	0.000662	-0.137
Information sharing	0.0824	-130.8**	-0.0671	-113.6**
Natural Resource Exports	-5.528	-1,267**		
Subsoil Assets			-0.0532	-29.82
Observations	114	82	114	83
R-squared	0.283	0.504	0.302	0.483

- Weak evidence for natural resource curse in banking sector outreach

Summary

- Finance as important for growth and poverty reduction in resource-based economies
- Financial development is lower in resource-based economies, though natural resource abundance can help over time!
- Banks are more liquid, more profitable and better capitalized, but give fewer loans
- Firms suffer most from lower level of financial development, across all size classes!

Policy conclusions

- There is a premium on financial sector policy in resource-based economies
 - As important for growth as in other countries, but lower levels of financial development
- Which policies
 - Usual: macro-stability, contractual framework etc.
 - Competition!
 - Incentives for lending