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The Structure, Scope, and Independence of Banking Supervision – Issues and International Evidence

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Motivation

- Many banking crises over the past 2 decades. Responses/Recommendations:
  - Greater emphasis on market economics, reduce emphasis on government ownership of banking, reduce barriers to foreign bank entry
  - Improve supervision, including restructuring/increase independence of supervisors.
- Restructuring supervision is a policy issue in:
  - EU member countries/trans-EU
  - U.S. – In light of growing complexity of financial service companies, especially post-GLBA.

Issues

- Structure of supervision:
  - Single or multiple banking supervisory authorities?
  - Should the Central Bank be a bank supervisor?
- Scope of bank supervisor's authority
  - A single consolidated supervisor for all financial services?
- Importance of supervisory independence

Our Research

- Summary of the conceptual arguments and empirical research on the issues.
- “Landscape” of bank supervisory systems around the world.
- Do the structure, scope, and independence of supervision affect bank performance?

Landscape: Our Cross-Country Data

- Banking system data from surveys by World Bank and OCC
  - WB: Supervisory/regulatory data for 118 countries (1999).
  - OCC: Banking system structure and performance data for 110 countries (1996-1999).
  - Overlapping database of 84 countries.
- For multivariate analysis, individual bank data from BankScope.
  - Combined country-level and bank-level data base of 55 countries
- Supplementary (***alternative***) supervisory data from Courtis.

Single banking supervisory authority predominates

Region	Single Banking Supervisory Authority	Multiple Banking Supervisory Authorities
Africa	Botswana Burundi Egypt Gambia Ghana Kenya Lesotho Malawi Morocco Namibia Nigeria South Africa Zambia	Rwanda
Americas	Bolivia Brazil Canada Chile El Salvador Guatemala Guyana Honduras Jamaica Mexico Panama Peru Trinidad and Tobago Venezuela	Argentina Puerto Rico United States
Asia/Pacific	Azerbajan Bangladesh Bhutan Cambodia China India Indonesia Israel Japan Jordan Kuwait Malaysia Maldives New Zealand Kazakhstan Kyrgyzstan Lebanon Nepal Philippines Qatar Saudi Arabia Singapore Sri Lanka Tajikistan Tonga Turkmenistan Vietnam	Australia Korea Taiwan Thailand
Europe	Albania Austria Belgium Bosnia-Herzegovina Bulgaria Croatia Cyprus Denmark Estonia Finland France Georgia Greece Iceland Ireland Italy Liechtenstein Lithuania Luxembourg Macedonia Moldova Netherlands Portugal Romania Slovakia Slovenia Spain Sweden Switzerland United Kingdom	Belarus Czech Republic Germany Hungary Latvia Poland Turkey Yugoslavia
Offshore Financial Centers	Aruba Bahrain British Virgin Islands Cayman Islands Guernsey Macau Malta Mauritius Oman Seychelles Solomon Islands St. Kitts and Nevis Turks and Caicos Islands Western Samoa	Gibraltar Vanuatu
Total 116 Countries	84 % of Countries	16% of Countries

Majority of Countries Rely on Central Bank as a Supervisory Authority

Region	Central Bank Only	Central Bank Among Multiple Supervisors	Central Bank Not a Bank Supervisor
Africa	Botswana Burundi Egypt Gambia Ghana Kenya Lesotho Malawi Morocco Nigeria South Africa Zambia	Rwanda	
Americas	Brazil Guatemala Guyana Jamaica Trinidad and Tobago	Argentina United States	Bolivia Canada Chile El Salvador Honduras Mexico Panama Peru Puerto Rico Venezuela
Asia/Pacific	Armenia Azerbaijan Bangladesh Bhutan Cambodia China India Indonesia Israel Jordan Kazakhstan Kuwait Kyrgyzstan Lebanon Malaysia Maldives Nepal New Zealand Philippines Qatar Saudi Arabia Singapore Sri Lanka Tajikistan Tonga Turkmenistan Vietnam	Taiwan Thailand	Australia Japan Korea
Europe	Albania Bosnia-Herzegovina Bulgaria Croatia Estonia Georgia Greece Cyprus Ireland Italy Lithuania Macedonia Moldova Netherlands Portugal Romania Russia Slovakia Slovenia Spain	Belarus Czech Republic Germany Hungary Latvia Poland Turkey Yugoslavia	Austria Belgium Denmark Finland France Iceland Liechtenstein Luxembourg Sweden Switzerland United Kingdom
Offshore Financial Centers	Aruba Bahrain Cayman Islands Macau Malta Mauritius Oman Seychelles St. Kitts and Nevis Solomon Islands Western Samoa	Vanuatu	British Virgin Islands Gibraltar Guernsey Turks and Caicos
Total 117 Countries	**64% of Countries**	**12% of Countries**	**24% of Countries**

Scope of Supervision for Bank Supervisors: International Comparison

Banks Only				Banks and Securities Firms		Banks and Insurance Firms		Banks, Securities, and Insurance Firms	
Argentina	Georgia	Latvia	Romania	Belgium	Ireland	Anguilla	Honduras	Australia	Korea
Albania	Germany	Liechtenstein	Russia	Bermuda	Isle of Man	Aruba	Lesotho	Bolivia	Malta
Armenia	Ghana	Lithuania	Seychelles	Cyprus	Luxembourg	Austria	Macau	China	Norway
Bahamas	Greece	Macedonia	Slovakia	Finland	Mexico	British Virgin Islands	Malaysia	Denmark	Singapore
Bahrain	Hong Kong	Maldives	Slovenia	France	Saudi Arabia	Canada	Malawi	Guernsey	Sweden
Bangladesh	India	Mauritius	South Africa	Guyana	Switzerland	Cayman Islands	Paraguay	Iceland	United Kingdom
Barbados	Indonesia	Mozambique	Spain	Hungary		Ecuador	Peru	Japan	Uruguay
Belarus	Israel	Nepal	Sri Lanka			El Salvador	Saudi Arabia	Jersey	Zambia
Bosnia-Herzegovina	Italy	Netherlands	Taiwan			Ethiopia	Sierra Leone		
Botswana	Jamaica	New Zealand	Thailand			Gambia	Suriname		
Brazil	Jordan	Nigeria	Trinidad and Tobago			Gibraltar	Turks and Caicos		
Bulgaria	Kazakhstan	Oman	Tunisia			Guatemala			
Cambodia	Kenya	Panama	Turkey						
Chile	Kuwait	Philippines	United States						
Croatia	Egypt	Poland	Vanuatu						
Czech Republic	Estonia	Portugal	Venezuela						
55% of Countries				**11% of Countries**		**20% of Countries**		**14% of Countries**	

Independence of Banking Supervision

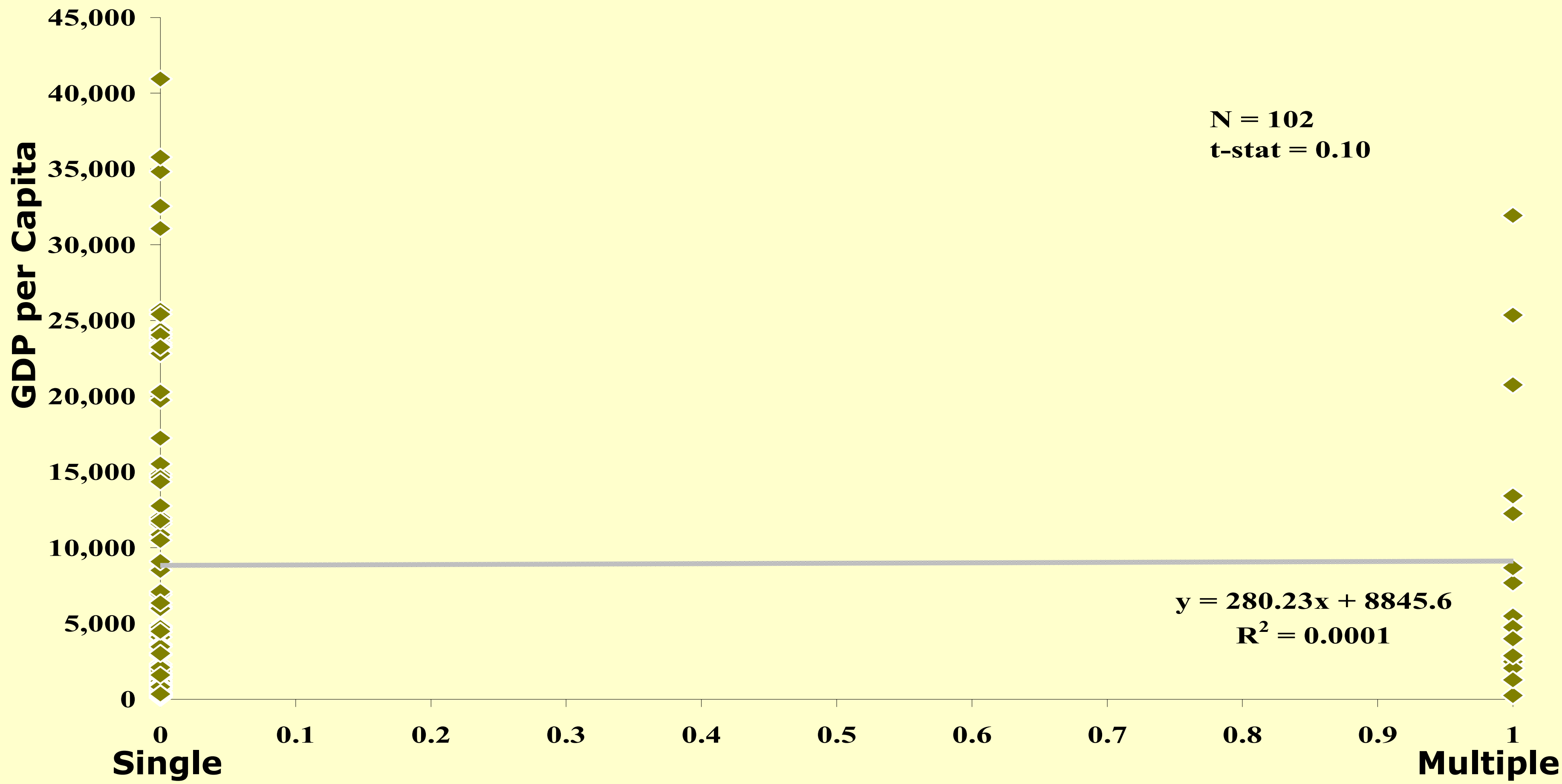
- Independence: An index from 1 (low independence) to 3 (high independence) based on responses to three questions on WB survey:
  - To whom are the supervisory bodies responsible or accountable?
  - How is the head of the supervisory agency (and other directors) appointed?
  - How is the head of the supervisory agency (and other directors) removed?

Independence of Bank Supervisory Authorities: International Comparison

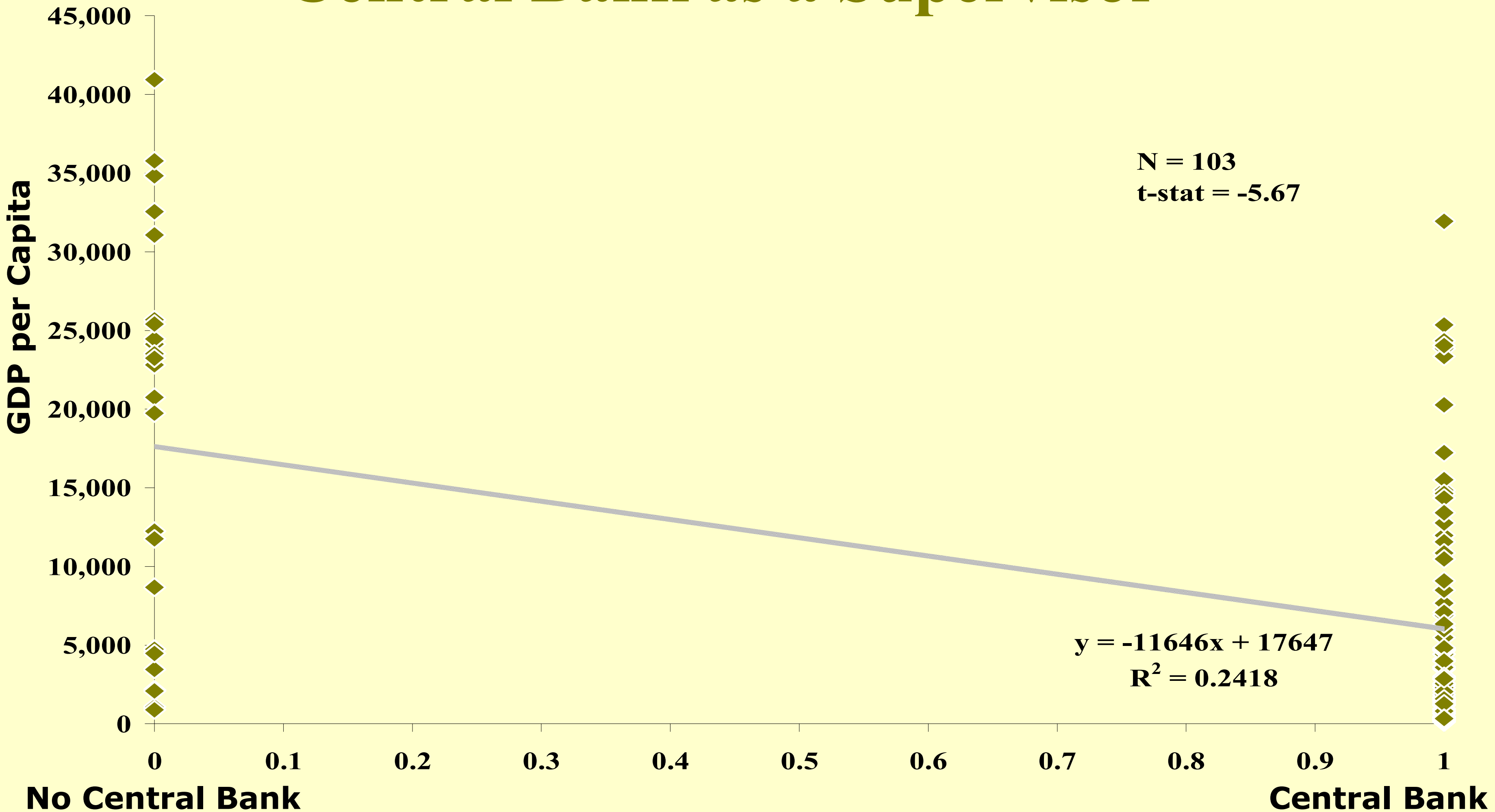
Region	Low Independence		Medium Independence		High Independence	
Africa	Botswana Burundi Gambia Kenya South Africa	Morocco Nigeria Rwanda Malawi Zambia			Egypt Ghana	Lesotho
Americas	Argentina Brazil Chile El Salvador Puerto Rico	Guyana Honduras Mexico Guatemala	Bolivia Trinidad and Tobago	Venezuela	Canada Jamaica Panama	Peru United States
Asia/Pacific	Bhutan Cambodia China Israel Korea Nepal	New Zealand Philippines Sri Lanka Taiwan Tajikistan Vietnam	Bahrain Bangladesh India Indonesia Japan Jordan	Kuwait Malaysia Maldives Singapore Thailand Tonga	Australia Lebanon	Qatar Saudi Arabia
Europe	Austria Czech Republic Denmark Estonia Finland Hungary	Greece Lithuania Macedonia Moldova Romania Russia	Belgium Croatia Cyprus Italy	Liechtenstein Sweden Switzerland	Belarus France Germany Ireland Luxembourg Netherlands	Poland Portugal Slovenia Spain Turkey United Kingdom
Offshore Financial Centers	Aruba British Virgin Islands Cayman Islands Gibraltar Macau Malta	Mauritius Oman St. Kitts and Nevis Islands Turks and Caicos Islands Vanuatu Western Samoa	Guernsey		Solomon Islands	
Total 103 Countries	53% of Countries		22% of Countries		24% of Countries	

Does the Structure of Supervision Matter? Preliminary Correlations

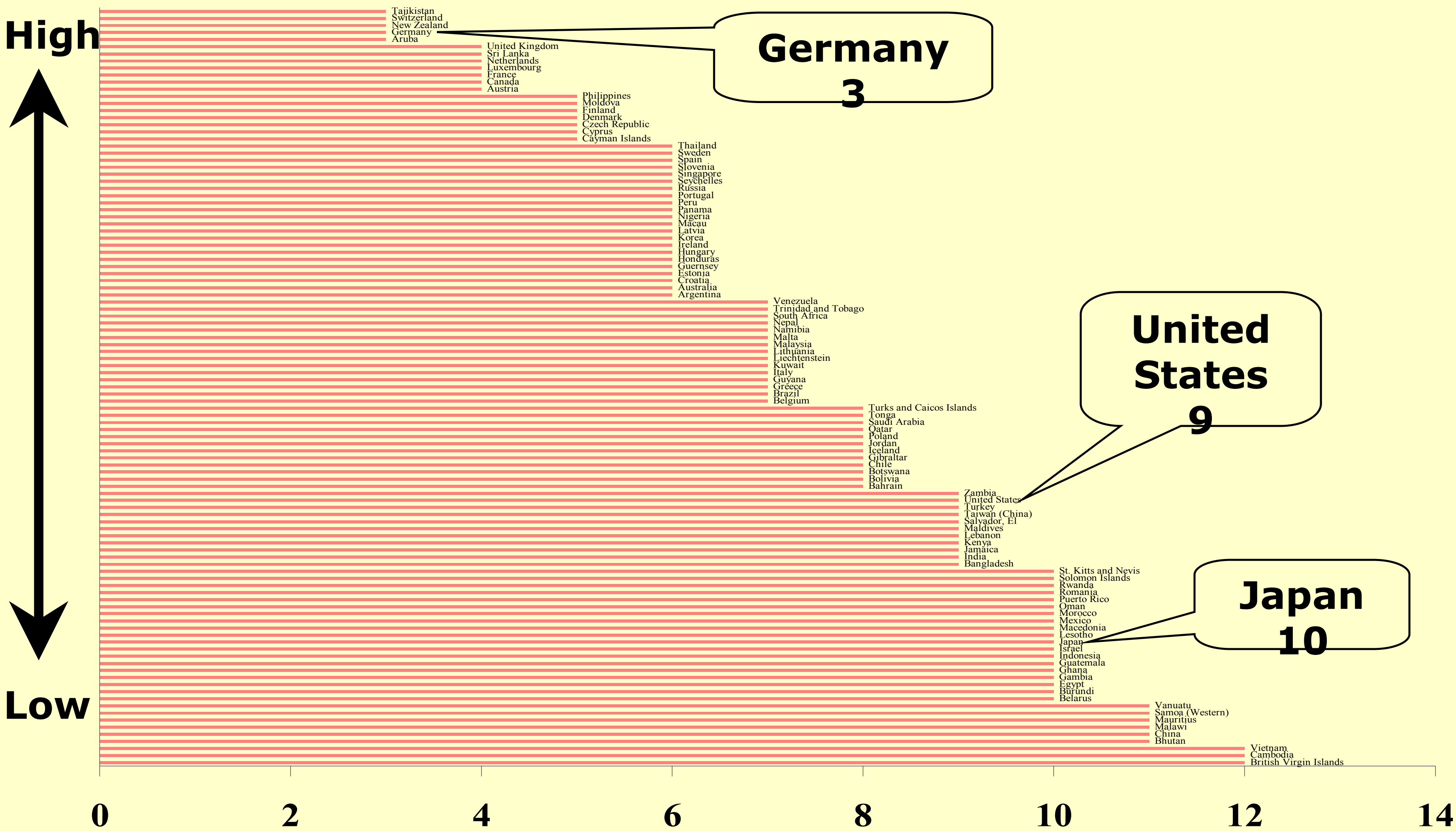
GDP per Capita Not Correlated with Single vs. Multiple Supervisory Authorities



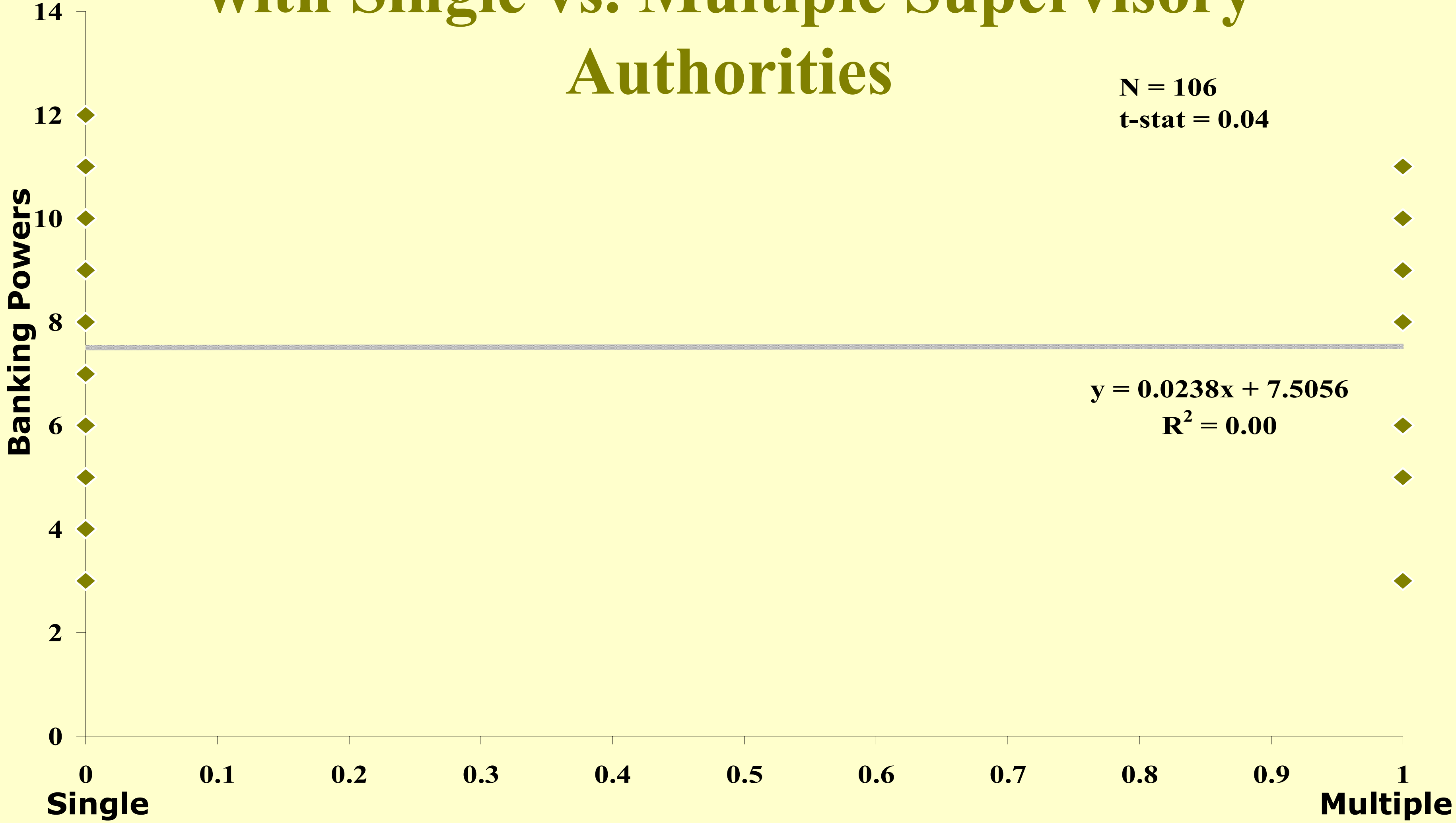
GDP per Capita Negatively Correlated with Central Bank as a Supervisor



Banking Powers Vary Widely Across Countries



Extent of Banking Powers Not Correlated with Single vs. Multiple Supervisory Authorities



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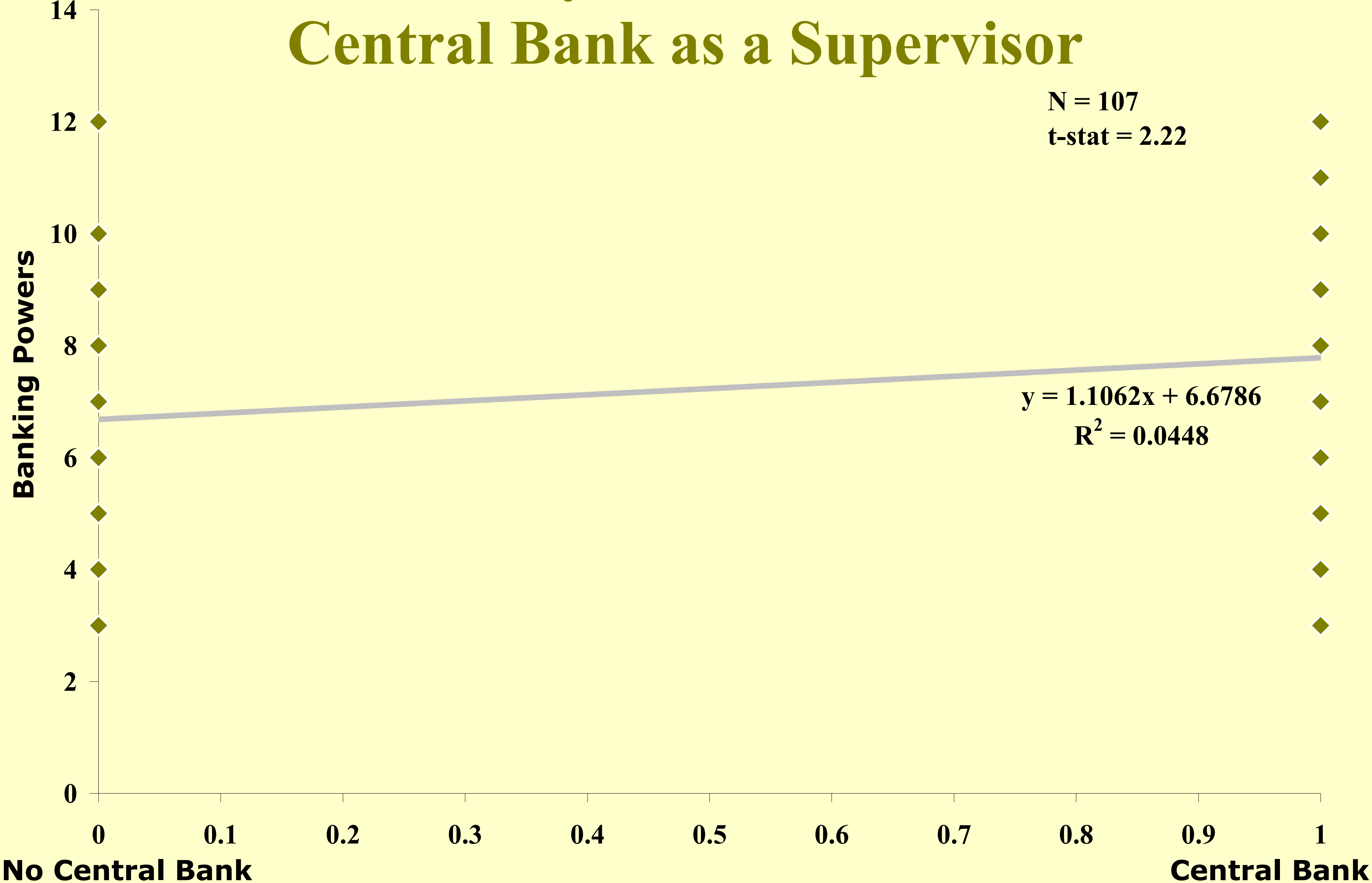
Restrictive Banking Powers Positively Correlated with Central Bank as a Supervisor



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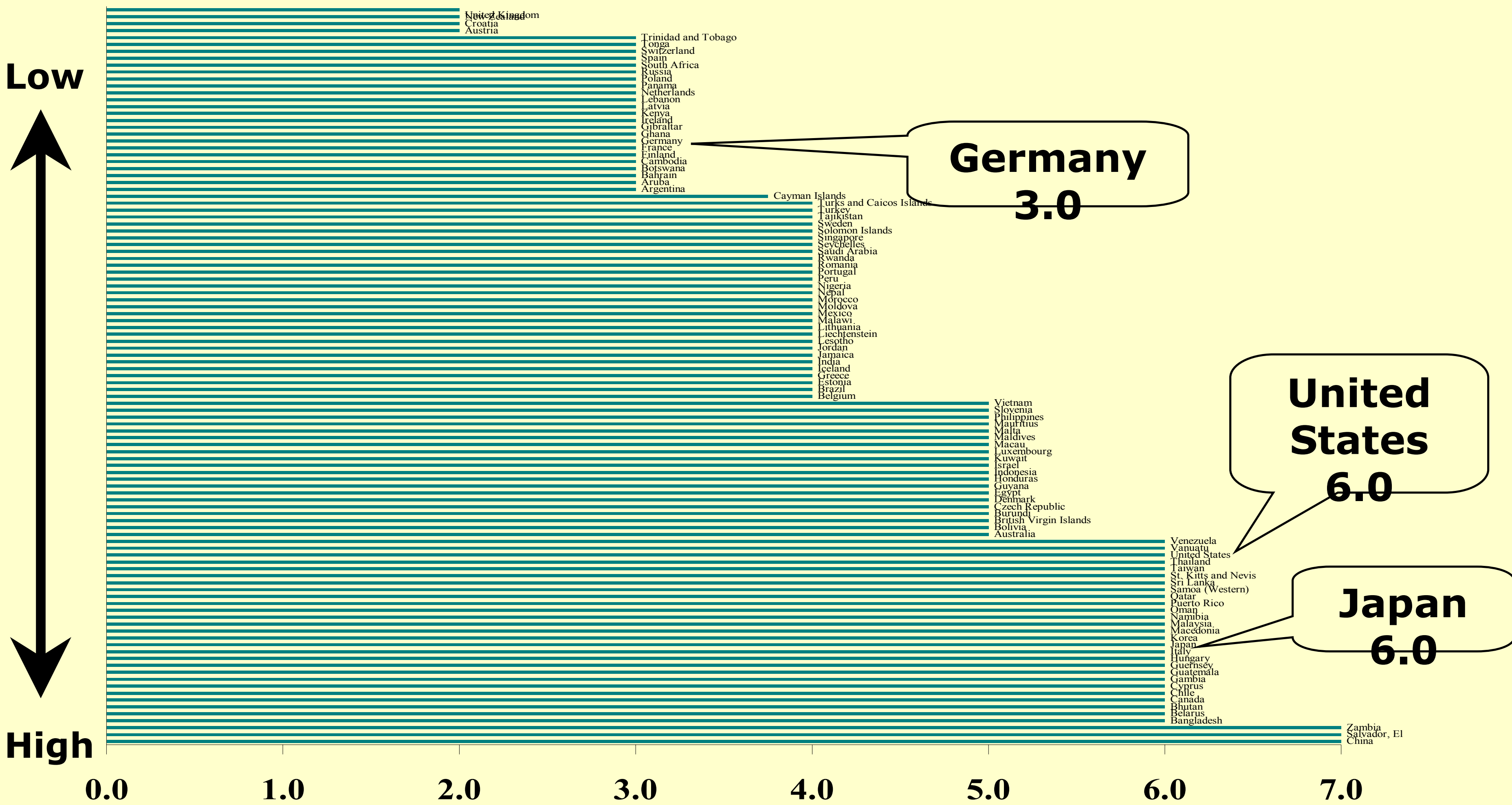
Restrictions on Mixing of Banking and Commerce Vary Widely Across Countries



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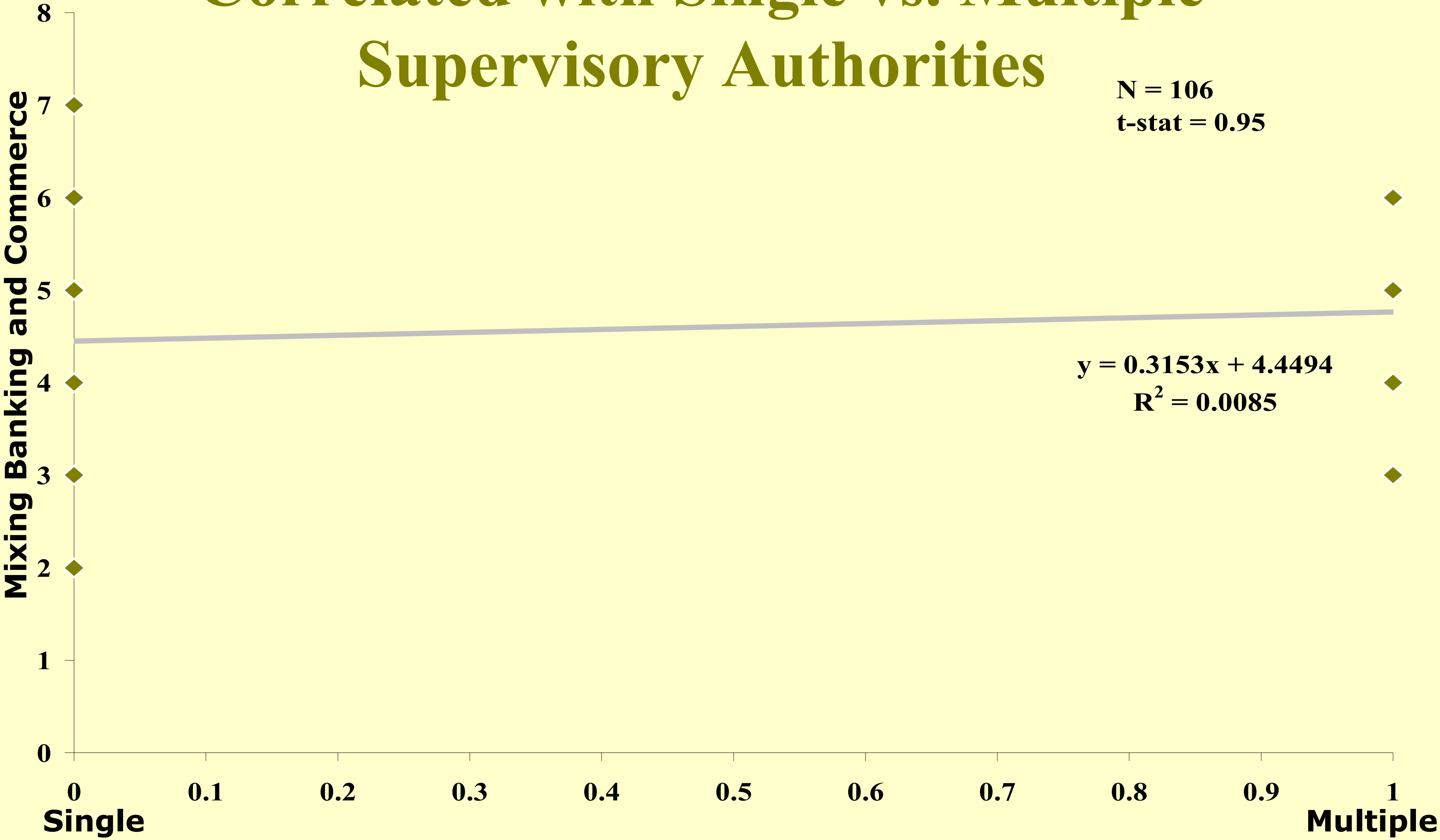
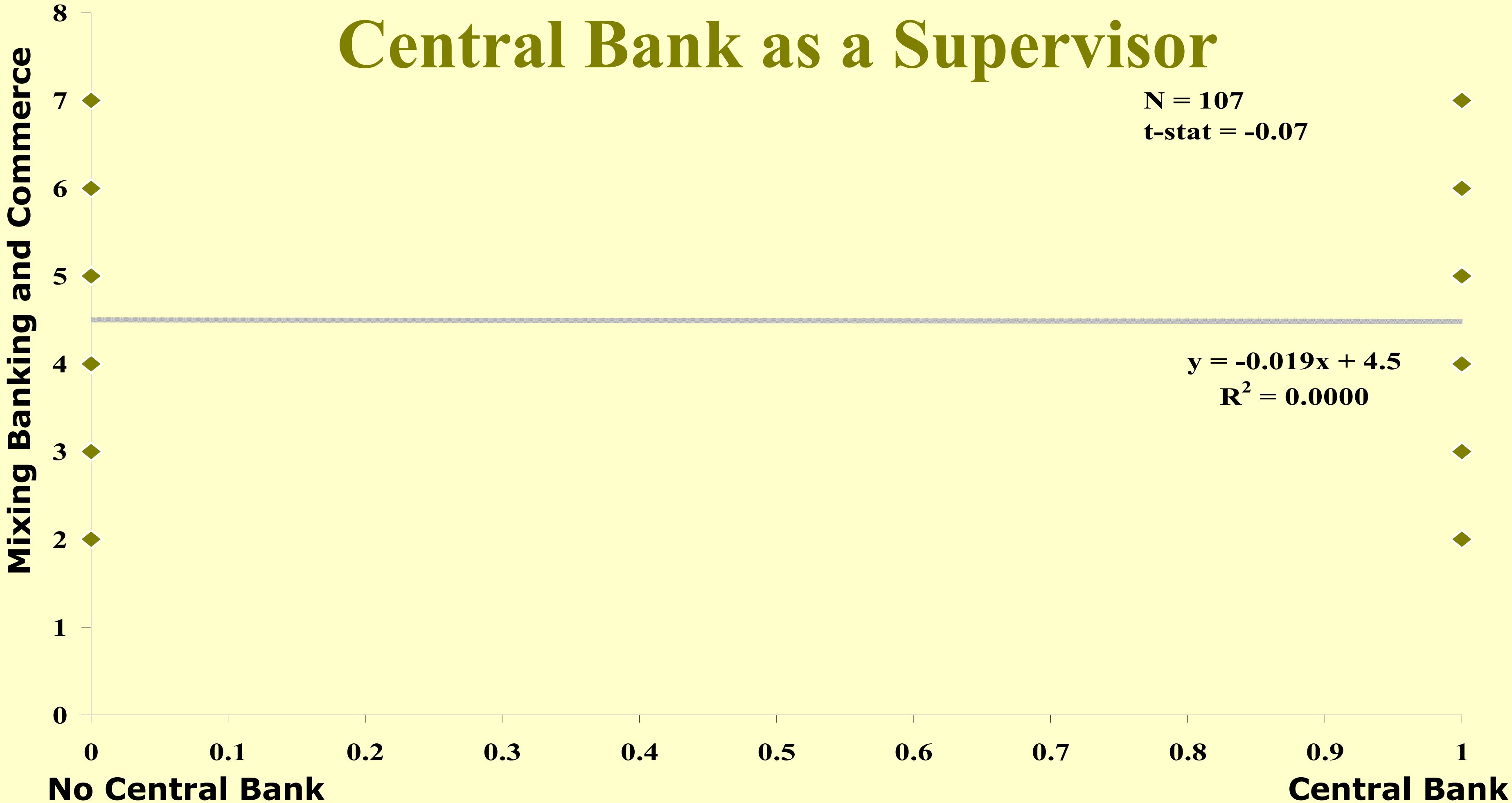
Mixing Banking and Commerce Not Correlated with Single vs. Multiple Supervisory Authorities



Mixing of Banking and Commerce Not Correlated with Central Bank as a Supervisor



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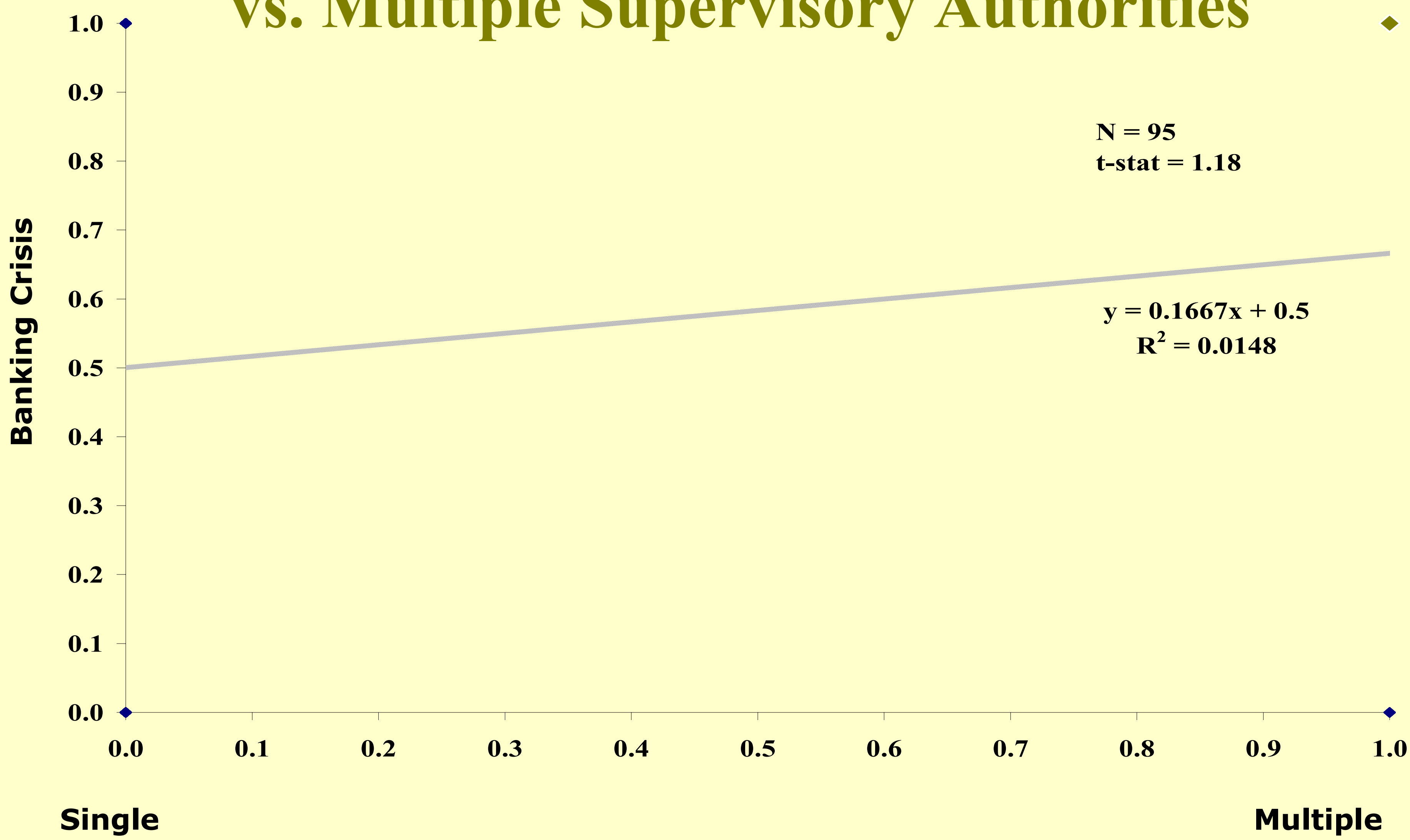
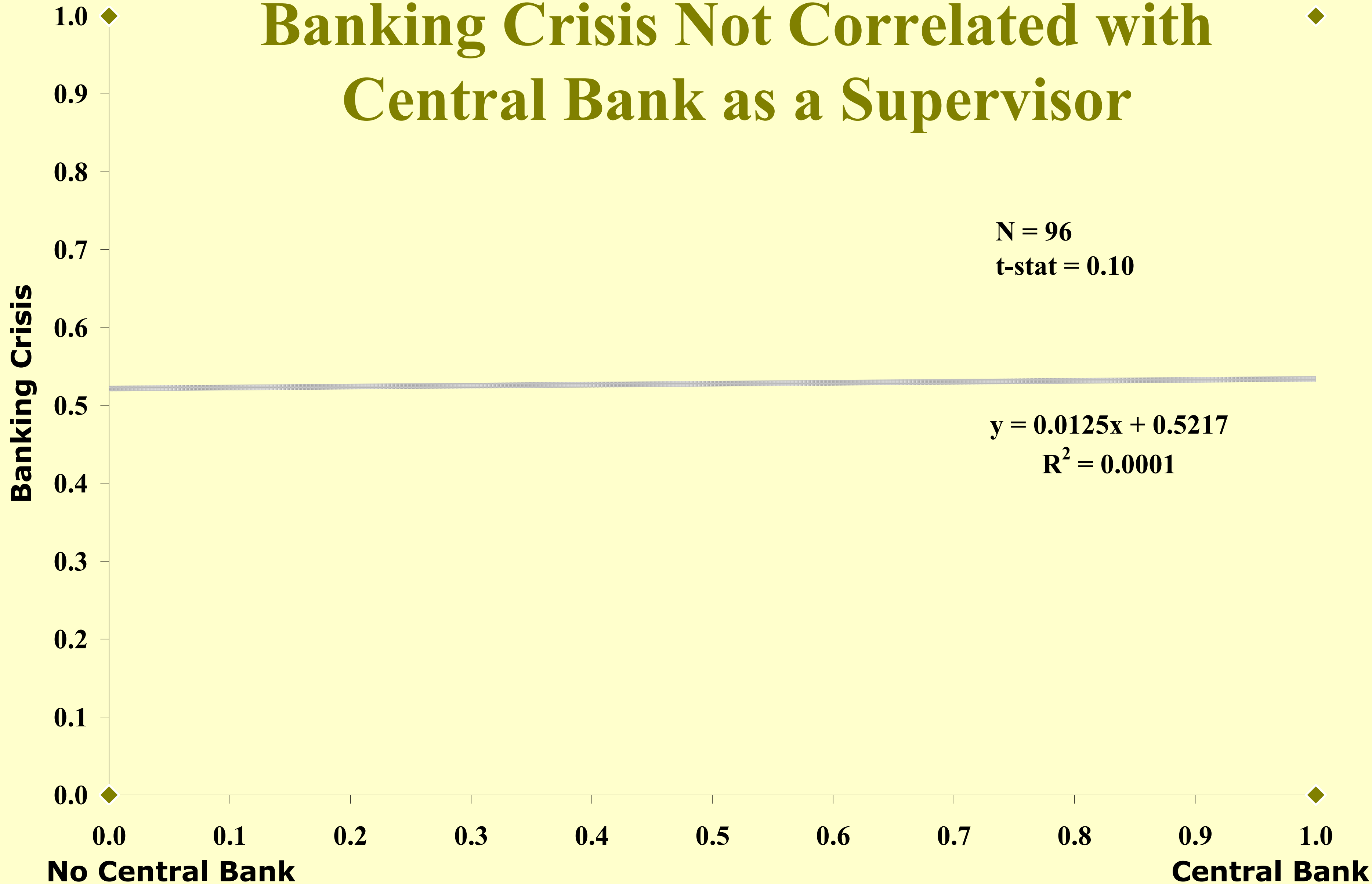
Banking Crisis Not Correlated with Single vs. Multiple Supervisory Authorities



Banking Crisis Not Correlated with Central Bank as a Supervisor



Banking Supervisory Structure: Key Findings

- Most countries have a single banking supervisor.
- Overall, not much correlation between the number of supervisory authorities and banking structure, powers, mixing of banking and commerce, stability, or economic development.

Banking Supervisory Structure: Key Findings

- Overall, whether the Central Bank is a supervisor IS significant:
- Economic development is lower when the Central Bank is a supervisor.
- Banking systems without the Central Bank as a supervisor on average allow wider powers.

Banking Supervisory Structure: Key Findings

- Banking systems with greater government ownership are more likely to have the Central Bank as a bank supervisor.
- A greater percentage of banks are likely to be foreign owned when the Central Bank is NOT a supervisor.
- A greater percentage of entry applications are denied when the Central Bank is a supervisor.

Multivariate Analysis

- Our Main Question: Do the structure, scope, and independence of bank supervision have any effect on bank performance (as measured by profitability)?
- Secondary Question: If there is an impact, what's the direction of the impact?

Possible Channels of Influence

- Single vs. multiple supervisors system:
  - Single supervisor: Positive impact on bank performance: without “competition in laxity”, bank risk management might be better, and hence profitability better.
  - Single supervisor: Lower regulatory burden with a single supervisor could reduce costs and boost performance.
  - Multiple supervisor: May result in greater responsiveness by regulators to industry innovation, lowering costs and/or increasing revenue.
  - *A priori* sign expectation ambiguous.

Possible Channels of Influence

- Central Bank as a Bank Supervisor: *A priori* ambiguous impact on bank performance, due to possible outcomes when there is a conflict of interest between monetary policy and banking supervision:
  - If during a downturn CB eases up on banks, banks may grow out of credit quality problems.
  - If easing up on banks encourages poor credit extension, bank profitability could decline.

Possible Channels of Influence

- Scope:
  - Consolidated supervision may foster better risk management by banks, and hence result in better performance.
  - Consolidate supervisor may be less attuned to banking industry, and its innovations, resulting in poorer bank performance.
  - *A priori*, sign expectation is ambiguous.
- Independence: With an independent supervisor, banks more likely to make decisions on the basis of market forces, rather than political factors.
  - Hence, bank performance should be better.

Empirical Model

- Bank Performance = f (B, M, O, S)
- Where existing models include:
  - Bank Performance = Pre-tax profits/total assets for bank i in country j.
  - B = Bank-specific variables for bank i in country j.
  - M = Macroeconomic variables for country j.
  - O = Other control variables for country j.
- Our addition is:
  - **S = Supervisory structure, scope, and independence in country j.**

Banking Supervisory Variables and Expected Impact on Bank Performance

Supervisory Variable	Definition	Expected Impact
SINGLE	1 if there is a single bank supervisor	?
CBANK	1 if central bank is a bank supervisor	?
SCOPE	1 if bank supervisor has responsibility for securities firms, insurers, or both	?
INDPSUP	1 = low, 2 = medium, 3 = high independence	+

OLS Estimation Results
Impact of Bank Supervisory Variables on Bank Profitability

SINGLE	**0.0083**** (0.028)		**0.0090**** (0.028)			**0.0090**** (0.031)
CBANK		-0.0020 (0.366)	0.0014 (0.550)			-0.0021 (0.561)
SCOPE				0.0009 (0.650)		-0.0051 (0.177)
INDPSUP					-0.0027 (0.199)	-0.0025 (0.262)
Adj. R^2	0.1922	0.1906	0.1923	0.1910	0.1910	0.1933
F-Statistic	27.92	27.64	26.59	27.54	27.70	24.27
No. of obs.	2368	2368	2368	2354	2368	2354
No. of countries	55	55	55	53	55	53

***, **, * significant at the 1%, 5%, 10% level respectively; p-values in parentheses.

Empirical Model - Other Results

- Bank-specific and Macroeconomic variables results in line with previous research by Demurgic-Kunt and others (including negative impact for explicit deposit insurance system).
- “Regulatory” variables of significance throughout:
  - Greater liberalization toward foreign bank entry has positive effect on bank profitability.
  - The greater the restrictiveness on mixing banking and commerce, the lower is bank profitability.
  - Allowing subdebt as a component of capital improves bank profitability (better market discipline?)

Empirical Model
"Robustness"

- Repeated main specifications, but with alternative data on supervisory structure:
  - Data from Courtis.
  - Basically in accord with the WB supervisory structure data, but for 9 countries there are "judgment call" differences in either the number of bank supervisors and/or the supervisory role of the central bank.
- Same results, EXCEPT significance of SINGLE disappeared.

Conclusions

- Not much support for an impact of the structure, scope, or independence of bank supervision on banking industry performance.
- Research – and policy debate – can best turn to the importance of supervisory structure, scope, and independence on banking system safety and soundness.
  - Not much force to the argument that a change in supervisory structure one way or the other will help/hurt bank performance.

Country	World Bank Supervisory Structure Data	Courtis Supervisory Structure Data
Argentina	Multiple Bank Supervisors	Single Bank Supervisor
Korea	Multiple Bank Supervisors	Single Bank Supervisor
Thailand	Multiple Bank Supervisors	Single Bank Supervisor
Czech Republic	Multiple Bank Supervisors	Single Bank Supervisor
Poland	Multiple Bank Supervisors	Single Bank Supervisor
Turkey	Multiple Bank Supervisors	Single Bank Supervisor
Canada	Single Bank Supervisor	Multiple Bank Supervisors
Japan	Single Bank Supervisor	Multiple Bank Supervisors
France	Single Bank Supervisor	Multiple Bank Supervisors; Central Bank is a Bank Supervisor