

# Formal institutions, culture, and initial coin offerings: A cross-country analysis

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# Introduction

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## To remember at the end

1. ICOs from countries with stronger institutional background have a greater likelihood of success, raising more funds, and experiencing lower price volatility in the secondary market.
2. Institutional background is more relevant when regulations concerning ICOs are absent.
3. The positive relationship between institutional background and investors' contribution decision is moderated by cultural dimensions of uncertainty avoidance and collectivism.

# What is an ICO?

ICOs are a decentralized method of financing, whereby an entity calls for funding by issuing coins/tokens to online investors.

- Disintermediated – Distributed Ledger Technology
- Highly Liquid
- Flexibility – Functional Forms of Issued Coins

FINTech MAY 10, 2018 / 1:28 PM / A YEAR AGO

## Kodak blockchain project seeks to raise \$50 million in token offering

Gertrude Chavez-Dreyfus

3 MIN READ



NEW YORK (Reuters) - Wenn Digital, the developer of an image protection blockchain platform licensed by Eastman Kodak Co (KODK.N), said on Thursday it intends to raise up to \$50 million in a combined public and private token offering.



FILE PHOTO: The Kodak logo is shown on a booth during the 2017 CES in Las Vegas, Nevada, U.S., January 6, 2017. REUTERS/Steve Mares

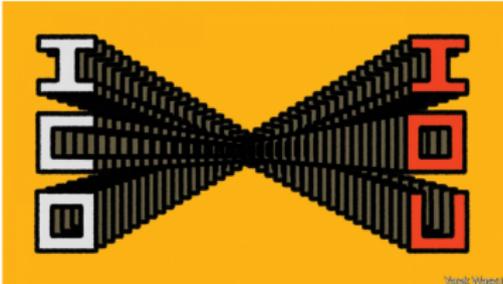
# What is an ICO?

The Economist Topics Current edition More

Token efforts

## Initial coin offerings have become big business

*Fundraising with cryptocurrencies is booming, but is that a good thing?*



Print edition | Technology Quarterly >  
Aug 30th 2018

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## Increasing popularity

- 966 ICOs in 2017 → 2,284 in 2018
- EOS raised \$4 billion
- SingularityNet raised about \$36 million in under 60 seconds
- Mainstream adoption of ICO, Cryptocurrency and Blockchain (e.g. Facebook 'Libra')

# A digital 'Wild West'

*"At least 235 ICOs were launched in 2017, [...] Many of these offerings were based not on established business models or proven products, but on little more than a white paper expressing an idea and a few lines of sample code. All of this was done without a single registration statement being filed with the SEC, and largely without private placement memoranda or other common securities disclosures."*

Robinson [2018]



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CYBER RISK OCTOBER 18, 2018 / 7:07 AM / A YEAR AGO

## Hacked, scammed and on your own: navigating cryptocurrency 'wild west'

Gertrude Chavez-Dreyfuss

7 MIN READ



# Regulations?

The Economist Topics ▾ Current edition More ▾

Token resistance

## Regulators begin to tackle the craze for initial coin offerings

*They raise difficult legal questions*



The illustration depicts a large, dark bull, a symbol of a bull market, composed of a network of nodes and lines. Several blue figures are shown at the bottom, holding red ropes that are attached to the bull, suggesting an attempt to control or restrain the market. The background is a warm, orange-yellow gradient.

Print edition | Finance and economics >  
Nov 11th 2017 | NEW YORK

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## Heterogeneous Regulations

- **Warnings** to investors from regulatory bodies (SEC, ESMA,...)
- **Regulations/Guidelines** – Taxation, Anti-Money Laundering, Disclosure, Registration (enforceability? legal status?)
- Some issued complete **bans** (e.g. China)

**We test whether the strength of the formal institution of the ICO's country-of-origin substitutes the lack of regulation by inferring trustworthiness to investors.**

# Hypothesis 1

## Impact of Institutional Background

Institutions define the choice set, determine transaction and production costs, and help establish trust → influence economic activity.

## Relevance of Institution-based Trust

- Between great geographical distance
- At the onset of a relationship
- Amidst the lack of avenues of interpersonal trust building

*Hypothesis 1a: Favorable institutional background of ICO projects has a significantly positive impact on ICO success, amount raised and token price volatility.*

*Hypothesis 1b: The impact of favorable institutional background of ICO projects on funding outcome is diminished among projects based in locations with ICO-related regulations.*

## Hypothesis 2

A successful formal institutional framework involves interaction with informal institutions. Informal institutions are conventions, codes of conduct, and norms of behavior that come from socially transmitted information and as such are part of a country's cultural heritage.

[North, 1990]

- **Uncertainty avoidance** – apprehension to uncertain and unknown situations.
- **Collectivism** – dependence on informal connections.

*Hypothesis 2a: Greater uncertainty avoidance weakens the positive relationship between formal institution and ICO outcomes.*

*Hypothesis 2b: Higher level of collectivism weakens the positive relationship between formal institution and ICO outcomes.*

# Data & Methodology

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# Sample construction

- No official entity that collects ICO information
- Collecting the complete population of ICOs practically unfeasible

**Sample of 2,200 ICOs launched between April, 2015 and September, 2018 [icobench.com]**

**We supplement this dataset with post-ICO prices of the issued tokens [coinmarketcap.com]**

**[Amsden and Schweizer 2018;  
Howell, Niessner, and Yermack 2018]**

# Dependent Variables

We test the impact of country-of-origin regulatory strength on:

- \$ amount raised during the coin offering period (**AMOUNT**) [see Fisch, 2019]
- Whether or not the token is traded ex-post on a currency exchange (**SUCCESS**) [see Amsden and Schweizer, 2018]
- ICO ex-post performance (coin volatility): **GARCH Vol**

# Independent Variables

## Formal Institutions

World Bank Governance Indicators

[Kaufmann, Kraay, and Mastruzzi 2010]

Develop a composite Institution Index using principal component analysis.-

[Li and Zahra, 2012]

$$\begin{aligned} \text{INSTITUTION} = & \text{RuleOfLaw} * 0.4430 + \text{GovernmentEffectiveness} * 0.4306 \\ & + \text{ControlOfCorruption} * 0.4397 + \text{RegulatoryQuality} * 0.4382 \\ & + \text{PoliticalStability} * 0.3698 + \text{VoiceAccountability} * 0.3102. \end{aligned}$$

## Informal Institutions (Culture)

GLOBE (Global Leadership & Organizational Behavior Effectiveness)  
Culture Measures

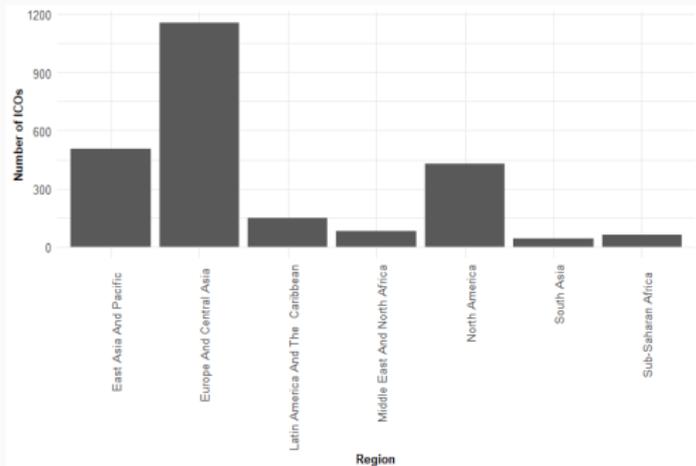
# Control Variables

We further control for:

- Tax Haven status (*TAX\_HAVEN*) [Hines, 2010]
- Quality of ICO-related regulations [Pinsent Masons, 2017].
- ICOBench Rating (*RATING*)
- pre-ICO sale (*PRE\_ICO*)
- Bonus (*BONUS*)
- Caps present (*CAPS\_PRESENT*)
- Ethereum Platform (*ETHEREUM*)
- Whitelist+KYC (*WHITELIST\_KYC*)
- Currencies Accepting (*NUM\_OF\_CURR*)
- Fiat Accepting (*FIAT*)
- Team Count (*TEAM\_COUNT*)
- Average Ether Price (*PRICE\_ETH*)

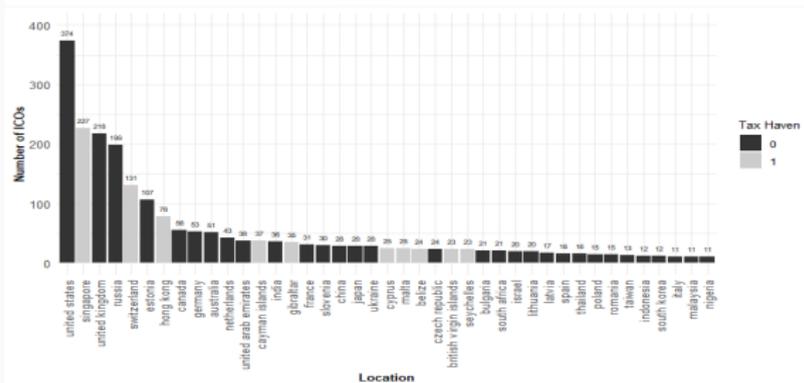
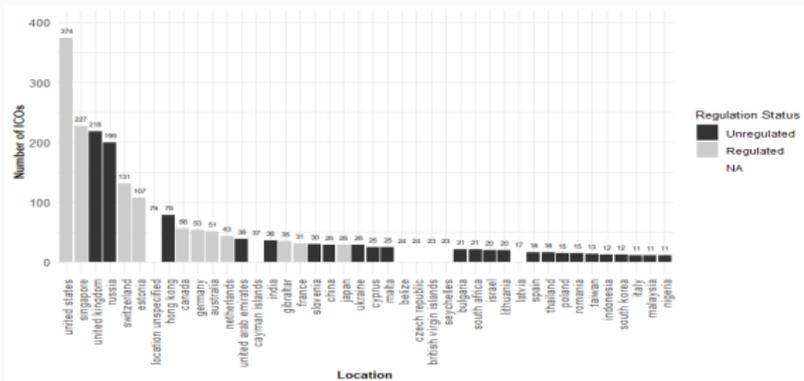
# Summary statistics

About 15% of our sample are ICOs originating from the U.S., followed by Singapore (9.15%), U.K. (8.7%), Russia (8%) and Switzerland (5.2%)



Predominantly located in Europe and Central Asia, East Asia and Pacific, and North America.

# Summary statistics



- Most ICOs are located in countries and jurisdictions with relevant regulations.
- High ICO frequency in Tax Havens

## Summary statistics

**We find that about 24% of our ICOs are 'successful', that is they are ex-post traded on a cryptocurrency exchange.**

**We find that the average ICO raises about \$ 4,9 million USD**

Furthermore:

- about 27% of our ICOs are located in a Tax Haven
- about 44% of our ICOs held a pre-ICO
- about 43% of our ICOs offered a bonus
- about 66% of our ICOs reported a soft- and/or hardcap
- about 35% of our ICOs practice KYC
- On average, our ICOs accept 2 different currencies
- Only 2% accept fiat currencies

# Results

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**Table 1:** Impact of Institutional Background on ICO Outcome

	<i>Dependent variable:</i>		
	<i>Success (Traded)</i> GLM (Binomial) (1)	<i>Amount Raised</i> GLM (Log Gamma) (2)	<i>GARCH Vol</i> GLM (Log Gamma) (3)
<i>INSTITUTIONS</i>	<b>0.100***</b> (0.032)	<b>0.068***</b> (0.021)	<b>-0.125**</b> (0.050)
Control Variables	Yes	Yes	Yes
Num. obs.	2167	1106	527
Log Likelihood	-1012.678	-18816.479	-35.148

**Table 2: Separate institutional dimensions**

	<i>Dependent variable:</i>		
	<i>Success (Traded)</i>	<i>Amount Raised</i>	<i>GARCH Vol</i>
	GLM (Binomial) (1)	GLM (Log Gamma) (2)	GLM (log Gamma) (3)
<i>COST_OF_CORRUPTION</i>	<b>0.180***</b> (0.062)	<b>0.122***</b> (0.042)	<b>-0.232**</b> (0.097)
<i>GOVERNANCE_EFFECTIVENESS</i>	<b>0.287***</b> (0.080)	<b>0.178***</b> (0.054)	<b>-0.263**</b> (0.122)
<i>POLITICAL_STABILITY</i>	<b>0.294***</b> (0.101)	0.096 (0.069)	-0.276 (0.168)
<i>REGULATORY_QUALITY</i>	<b>0.202***</b> (0.068)	<b>0.137***</b> (0.046)	<b>-0.231**</b> (0.106)
<i>RULE_OF_LAW</i>	<b>0.229***</b> (0.066)	<b>0.159***</b> (0.044)	<b>-0.250**</b> (0.101)
<i>VOICE_AND_ACCOUNTABILITY</i>	0.082 (0.066)	<b>0.106**</b> (0.044)	<b>-0.221**</b> (0.098)
<i>Controls</i>	Yes	Yes	Yes
Observations	2,167	1,106	527
Log Likelihood	-1,016.970	-18,819.690	-37.240

**Table 3:** Distinction in Impact of Institutional Background based on ICO Regulation Status

	Dependent variable:					
	Panel A: Unregulated			Panel B: Regulated		
	Success (Traded) GLM (Binomial) (1)	Amount Raised GLM (Log Gamma) (2)	GARCH Vol GLM (Log Gamma) (3)	Success (Traded) GLM (Binomial) (4)	Amount Raised GLM (Log Gamma) (5)	GARCH Vol GLM (Log Gamma) (6)
<i>INSTITUTIONS</i>	<b>0.081*</b> (0.046)	<b>0.123***</b> (0.043)	<b>-0.144**</b> (0.072)	-0.024 (0.240)	-0.164 (0.162)	-0.141 (0.359)
<i>Controls</i>	Yes	Yes	Yes	Yes	Yes	Yes
Num. obs.	936	462	194	994	518	281
Log Likelihood	-409.043	-7791.545	-31.199	-488.586	-8886.235	19.768

Overall we find a **positive** association between institutional power and ICO success as measured by (i) tradeability and (ii) amount raised. In addition, we find a **lower ex-post token volatility** for coins stemming from ICOs with stronger home institutions

We further find that **the effect of institutional strength** is more prevalent for ICOs located in countries with no regulatory framework in terms of ICOs.

# Results – Informal institutions

**Table 4:** Impact of Institutional Background and Culture on ICO Outcome

	<i>Dependent variable:</i>					
	<i>Success (Traded)</i>	<i>Amount Raised</i>	<i>GARCH Vol</i>	<i>Success (Traded)</i>	<i>Amount Raised</i>	<i>GARCH Vol</i>
	GLM (Binomial)	GLM (Log Gamma)	GLM (Log Gamma)	GLM (Binomial)	GLM (Log Gamma)	GLM (Log Gamma)
	(1)	(2)	(3)	(4)	(5)	(6)
<i>INSTITUTIONS</i>	<b>0.376*</b> (0.202)	<b>0.462***</b> (0.133)	-0.037 (0.299)	0.601 (0.444)	<b>1.002***</b> (0.306)	0.406 (0.729)
<i>UNCERTAINTY_AVOIDANCE</i>	0.228 (0.179)	<b>0.322***</b> (0.112)	0.223 (0.250)			
<i>UNCERTAINTY_AVOIDANCE : INSTITUTIONS</i>	-0.081 (0.051)	<b>-0.110***</b> (0.033)	-0.036 (0.074)			
<i>COLLECTIVISM</i>				-0.097 (0.224)	<b>0.342**</b> (0.152)	0.243 (0.373)
<i>INSTITUTION : COLLECTIVISM</i>				-0.120 (0.104)	<b>-0.220***</b> (0.072)	-0.129 (0.172)
<i>Controls</i>	Yes	Yes	Yes	Yes	Yes	Yes
Num. obs.	1688	844	431	1688	844	431
Log Likelihood	-793.513	-14370.972	-20.842	-793.891	-14373.673	-20.968

We find that the formal institutions (i.e. culture) somewhat mitigates the impact of formal institutions on ICO success

More specifically, the more **uncertainty avoidant** or **collectivist** the society is, the more the ICO raises, but the lower the relationship of **formal institutions** on the raised amount

# Conclusion

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# Conclusion

Our paper shows that the heterogeneity in ICO success in the dimensions of *tradeability*, *raised amount*, and *token volatility*, can be explained by institutional strength of the ICO's home country

We further find that **when ICO regulations are present in the home country**, the influence of institutional strength diminishes

As **informal** (*cultural*) **institutions** become stronger, the impact of formal institutions diminishes

**Thank you!**