

ESG Investment in Chinese Firms

September 25, 2012

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Objective

- The **first research** of the **link** between **ESG risk** and **financial performance** in **Chinese stock markets**.
- **RepRisk data** makes this possible:
 - ✓ 1806 Chinese companies on local and international listings over the period from 2006 to 2011.
 - ✓ 143 Chinese companies involved in 1219 issues matched with stock return data.



RepRisk Scope of ESG Issues






RepRisk® Categories	Environmental Footprint	Community Relations	Employee Relations	Corporate Governance	Product-Portfolio Related Risks	
Controversial Issues	Global Pollution (including Climate Change)	Human Rights Abuses, Corporate Complicity	Forced Labor	Corruption, Bribery, Extortion, Money Laundering	Products (Health and Environmental Issues)	
	Local Pollution	Impacts on Communities	Child Labor	Executive Compensation	Controversial Products and Services	
	Impacts on Ecosystems and Landscapes	Local Participation Issues	Freedom of Association and Collective Bargaining	Misleading Communication, e.g. "Green washing"		
	Overuse and Wasting of Resources	Social Discrimination	Discrimination in Employment	Fraud		
	Waste Issues		Health and Safety Issues	Tax Evasion		
	Animal Mistreatment		Poor Employment Conditions	Anti-competitive Practices		
	Violation of International Standards					
	Violation of National Legislation					
	Supply Chain (Environmental, Social, and Legal Issues)					

Note: In particular, all principles of the UN Global Compact are addressed.



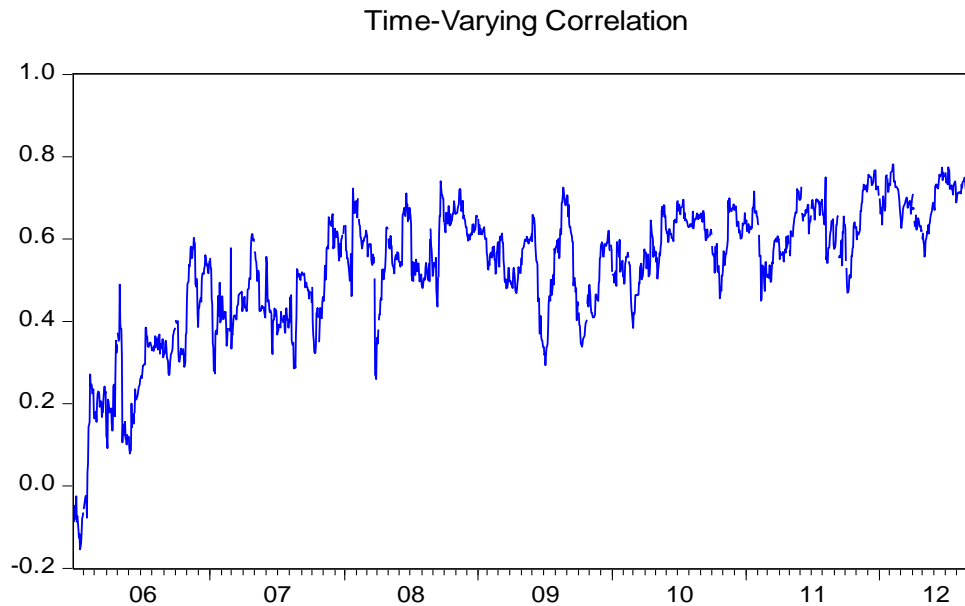
Listings Of Chinese Firms Around The World

Share Name	Numbers	Main Investors	Descriptions	Exchanges
A Share	1632	Mainland Chinese nationals and QFII participants	Shares denominated in RMB and listed on either the Shenzhen or Shanghai stock exchange	 
B Share	100	International investors and Mainland Chinese nationals	Shares denominated in foreign currencies but traded on either the Shenzhen or Shanghai stock exchange	 
H Share	159	Hong Kong residents, international investors and QDII participants	Mainland Chinese incorporated companies listed on the Hong Kong stock exchange	
Other Shares	553	International investors	Mainland Chinese incorporated companies listed elsewhere	Other Exchanges all over the world



Relationship between Dual-listed A- and H-shares

The time-varying return correlation between the Hang Seng China AH (A) index and (H) index for the period 2006-2012, estimated using BEKK-GARCH method:



The correlation has increased gradually since the introduction of QDII in April 2006.



ESG Data in Western and Chinese view

Views	Portfolios	Issues
Western Views	Environmental footprint	Global pollution and climate change; local pollution; impacts on ecosystems and landscapes; overuse and wasting of resources; waste issues; animal mistreatment
	Social	Forced labour; child labour; freedom of association and collective bargaining; discrimination in employment; health and safety issues; poor employment conditions; human rights abuses; corporate complicity; impacts on communities; local participation issues; social discrimination
	Corporate governance	Corruption; bribery; extortion; money laundering; executive compensation; misleading communication; fraud; tax evasion; anti-competitive practices
	Community relations	Human rights abuses; corporate complicity; impacts on communities; local participation issues; social discrimination
	Employee relations	Forced labour; child labour; freedom of association and collect bargaining; discrimination in employment; health and safety issues; poor employment conditions
	Product-portfolio related risk	Controversial products and services; product related health and environmental issues
	Violation of codes	Violation of national legislation and international standards
Chinese Views	Supply chain	Supply chain related environmental; social and legal issues
	China strict *	Violation of national legislation; corruption; bribery; extortion; money laundering; health and safety issues; fraud
	China very strict *	Violation of national legislation; corruption; bribery; extortion; money laundering; health and safety issues; fraud; misleading communication; controversial products and services



Research Questions

Data Analysis

How do **Western** ESG criteria affect Chinese **A share** companies?

How do **Chinese** ESG criteria affect Chinese **A share** companies?



How do **Western** ESG criteria affect Chinese **non-A share** companies?

How do **Chinese** ESG criteria affect Chinese **non-A share** companies?



Econometric Model

- Extended Carhart (1997) Four-Factor Model

$$r_{xp,t} = \alpha_p + \beta_{nat,p} r_{xnat,t} + \beta_{reg,p} r_{xreg,t} + \beta_{xglo,p} r_{glo,t} + \gamma_{nat,p} SMB_{nat,t} + \delta_{nat,p} HML_{nat,t} + \lambda_{nat,p} MOM_{nat,t} + \varepsilon_{p,t}$$

$r_{xp,t}$ = portfolio's excess return

α_p = Jensen's (1968) alpha

$\beta_{nat,p}, \beta_{reg,p}, \beta_{glo,p}$ = portfolio's systematic exposure to the broad market portfolio on national, regional and global level, respectively.

$r_{nat,t}$ = market benchmark's excess return on national level

γ, δ, λ = the exposure of a portfolio to the small cap, value, and momentum investment styles.

SMB, HML, MOM = the return of a portfolio investing long in small stocks and short selling large stocks, investing long in high book to market value stocks and short selling low book to market value stocks, and investing long in winner stocks and short selling loser stocks, respectively.

This 3-level Carhart Four-Factor model captures the designated portfolios' exposures to regional and global equity markets (if any).



Results: Chinese A share

Chinese A share

ESG Issues Category	α	β_{nat}	β_{reg}	β_{glo}	γ_{nat}	δ_{nat}	λ_{nat}	Adj. R ²
Environmental footprint	-0.0099***	1.0526***	-0.5557***	0.4733	0.5033***	0.3081***	-0.0527	0.9282
Social	-0.0119**	1.0775***	-0.4138***	0.0717	0.4698***	0.3624***	-0.0442	0.8850
Corporate governance	-0.0061	0.8510***	-0.0302	-0.1259	0.4852***	0.2773	0.0992	0.8838
Community relations	-0.0185**	0.9949***	-0.3101*	0.0021	0.6191***	0.4977***	-0.1122	0.7560
Employee relations	-0.0063	1.1621***	-0.2228	-0.4272	0.5794***	0.1283	0.0922	0.8100
Product-portfolio related risks	-0.0230**	0.8804***	0.0218	-0.8167*	0.8224***	0.6874***	0.1069	0.6543
Violation of codes	-0.0159***	1.0571***	-0.2700*	-0.1064	0.6230***	0.4890***	0.0580	0.9082
Supply chain	-0.0221**	1.1075***	0.1081	0.9826	0.7432***	0.1979	0.2072	0.6183
China strict	-0.0145***	1.0472***	-0.3192***	-0.0167	0.5807***	0.4496***	0.0854	0.9338
China very strict	-0.0241***	1.0023***	-0.1616	-0.4728	0.7397***	0.6151***	0.0361	0.8371

Note: ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, respectively.



Results: Chinese non-A share

Chinese non-A share

ESG Issues Category	α	β_{nat}	β_{reg}	β_{glo}	γ_{nat}	δ_{nat}	λ_{nat}	Adj. R ²
Environmental footprint	0.0027	0.9481***	1.0347***	0.4231	-0.2710***	-0.1082	0.0651	0.8741
Social	-0.0001	0.9818***	0.9924***	0.1841	-0.2280***	-0.1425**	0.0095	0.8856
Corporate governance	0.0080	0.9899***	0.6275***	0.1950	-0.4704***	-0.3479***	0.0586	0.8610
Community relations	-0.0020	0.9648***	1.1373***	0.1700	-0.2447***	-0.1502**	0.0397	0.8751
Employee relations	0.0115*	0.9803***	0.8148***	0.0321	-0.3923***	-0.1138	0.1106*	0.8378
Product-portfolio related risks	-0.0018	0.9774***	1.1649***	-0.2489	-0.2548	-0.0801	-0.0480	0.7578
Violation of codes	-0.0018	1.0440***	0.9649***	0.1269	-0.1353	-0.0959	0.0706	0.8767
Supply chain	-0.0071	0.8210***	1.6748***	2.0650***	-0.2501	-0.5243	0.2380	0.7217
China strict	0.0039	1.0695***	0.6563***	0.2456	-0.2859**	-0.1152	0.0486	0.8520
China very strict	-0.0042	1.0747***	0.7858***	0.1032	-0.1801**	-0.1023	0.0085	0.8021

Note: ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, respectively.



Conclusion

1. How do *Western* ESG criteria do in Chinese *A share* companies?

- Six out of eight portfolios generate significant negative returns at either the 1% or 5% level.
- Specifically, the product-portfolio related risks portfolio presents the worst performance.
- **Some Western ESG criteria matter for Chinese investors**

2. How do *Chinese* ESG criteria do in Chinese *A share* companies?

- Both portfolios generate significant negative returns at the 1% level.
- Specifically, the China very strict issues portfolio presents the worst performance among all.
- **Chinese ESG criteria matter strongly for Chinese investors**

3. How do *Western* ESG criteria do in Chinese *non-A share* companies?

- Only one out of eight portfolios generates a marginally significant alpha at the 10% level.
- **Western ESG issues of Chinese firms listed outside China do not matter.**

4. How do *Chinese* ESG criteria do in Chinese *non-A share* companies?

- No significant alphas are observed.
- **Chinese ESG issues of Chinese firms listed outside China do not matter.**



Why this is important?

- Chinese investors interpret ESG issues differently owing to the socio-political context of the country.
- Western responsible investors and those of emerging markets are different in their perceptions of and reactions to various ESG issues.
- **RepRisk data** is very interesting:
 - ✓ Focuses on intangible assets (e.g., reputational risks) which are difficult to evaluate.
 - ✓ It allows us to examine different investment contexts (e.g., other countries, regions, etc).



***Thank you for your
attention.***





The RepRisk Index (RRI)

- ❑ Quantifies the exposure of environmental, social and governance risks
- ❑ Identifies controversial companies to avoid financial, compliance and enterprise reputational risks
- ❑ Allows comparison to peers and avoidance of controversial investments and risky business relationships
- ❑ Calculation based on source, severity and novelty of data as well as frequency and timing of data

