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Resilience of Financial portfolios; ESG investment

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Section 1. Background

Joint research project World Bank/ GPIF

- Research on incorporation of ESG into fixed income portfolios
- Interviews with key stakeholders
- Extensive literature review
- Report due at World Bank spring meetings in April

- World Bank is a leading sustainable/ impact investor
- Believe this is necessary to achieve Twin Goal
  - End extreme poverty
  - Promote shared prosperity

- Believe the financial system as a whole has a role to play
- Integrating sustainability considerations into operations – including costing positive and negative externalities - can reorientate resources to inclusive and sustainable activities

Section 1. Research Findings

1.1 Main findings from academic research

Academic research….

Performance corporate bonds	
Key findings	**Supporting research**
Bonds with high ESG ratings have modestly outperformed their lower rated peers	• **S. Polbenikov, A. Desclee, L. Dynkin, and A. Maitra (…). ESG Ratings and Performance of Corporate Bonds.** The authors study the historical relationship between ESG ratings and corporate bond spread and performance, finding that corporate bonds with high composite ESG ratings have slightly lower spreads, all else being equal. They also find that bonds with high ESG ratings have modestly outperformed their low rated peers when controlling for various risk exposures. They provide details on the effects of individual E, S, and G scores on performance. The outperformance of flow-ESG issuers by their high ESG peers through the past eight years has not been accompanied by increasing relative valuation. This suggests that the ESG performance gain is not a consequence of buying pressure and therefore might be retained.
In fixed income, ESG issues are mostly about risk	• **Environmental, Social, and Governance Issues in Investing: A Guide for Investment.** ESG analysis in fixed income considers how such issues as carbon emissions, labor relations and corruption might affect issuers' creditworthiness. A useful reminder is the case of the mining company Lonmin. After violent labor conflicts in Marikana, South Africa, in 2012, the company was forced to issue a warning regarding the servicing of its debt. Thus, risk pertaining to social issues, which could easily be overlooked in a traditional financial analysis, could also prove costly for fixed-income investors. • **Hau and Chen (2015).** Socially responsible firms usually perform better in terms of their credit ratings and have lower credit risk. The findings demonstrate the importance of considering both positive and negative ESG performance. Positive ESG ratings are associated with reduced financial risk while negative ESG performance scores lead to increased financial distress. Investors respond to positive ESG ratings. • **Freide, Bush, Bassen (2015).** Extensive literature review of 2200 individual studies of ESG in all asset classes and …

Performance sovereign bonds	
Key findings	**Supporting research**
E, S, G components correlation with sovereign credit strength defaults	• **Goss (2009).** Finds a significant negative relationship between ESG scores (KLD STATS) and financial distress as measured by probability of default. • **Oikonomou (2014).** Higher levels of ESG lead to default risk. Higher ESG strengths lead to higher S&P bond ratings and lower credit spreads. • PRI (2013). In contrast to ESG analysis for listed equities, social factors tend to be given greater weight than environmental factors because of links between political stability, governance and countries ability to raise taxes or make reforms. Corporate governance fators can have strong links to credit strength. Corporate scandals linked to fraud and bribery frequently lead to punitive fines, loss of licence to operate and greater scrutiny from regulators. Conversely, well-managed companies tend to be more aligned with bondholder interests, while corporate transparency keeps bondholders better informed of exposures. • **Union Investment (2014)** assess corruption as a key indicator of souvereign credit strength because of the relationship between fraud, tax avoidance, financial management and an issuer's ability to repay its debt obligations. There are strong correlations between corruption and the number of sovereign defaults. • **Lazard (2012). Giving Credit Where It's Due ESG Factors in EM Souvereign Debt.** The study verifies a clear correlation between a country's bond performance and the strength of its institutions and governance and goes further to quantify the impact of ESG factors on a country's credit spread. High institutional quality is associated with a low frequency of sovereign default and polarized governments tend to default more frequently. • **IMF.** Determined that structural reformes aimed at enhancing date transparency resulted in more reliable macroeconomic and financial data, which in turn improved access to international capital markets and lowered spreads for emerging markets countries. The IMF also found that countries that subscribed to its data standards experienced a 15% reduction in spreads one year after the implementation of these reforms. • **The Asian Development Bank.** Found that good governance is associated with both a higher level of per capita GDP and higher GDP growth over time • …

Other	
Key findings	**Supporting research**
Duration of ESG bonds	• **PRI (2014).** Different ESG factors will present greater risks over different time periods. In the short term investors face a greater threat from the fallout of low-frequency, high impact events such as extreme weather or industrial disasters. Beyond 15 years, ESG trends, such as demographic changes and climate change, are likely to have a significant impact on bond yields, but the extent of this is not yet clear. While there may be little difference between ESG analysis for three- and five-year bonds, there is a stronger argument for duration-weithed ESG analysis between two- and ten-year bonds
Examples of emerging market debt investors	• **Neuberger Berman (2013). ESG factors in sovereign debt investment.** Neuberger Berman's team eveluateing ESG scores for emerging market started with a list of 40 or 50 indicators and shortened that to 15. It back-tested all of them looking at a pool of 65 issuers over a 10-year period to find out which were most effective. The model includes 40% of ESG factors score and the remaining 60% consists of macroeconomic factors for a country. Thus the model can monitor these factors consistently and on a standardized basis within the investment process. For example, if they see corruption, rule of law, political stability going south, wwhile movement in the macroeconomic indicators was either neutral or positive, then they adjusted the exposure.

…provides rationale for taking ESG into account

Incorporating ESG factors does not mean sacrificing return

ESG factors are material credit risk

1.2 Main findings from academic research

- Many studies researching the empirical link between ESG and financial indicators

- Previously much research focused on equities (Dimson et at. 2013 summary)

- Recently more studies on fixed income published

- (Friede et al. 2015) – comprehensive study of 2,200 studies
    - 90% find non-negative relation between ESG and corporate financial performance
    - Bond studies (36) almost 2/3 positive 1/3 neutral or mixed

1.3 Corporate Bonds

- Barclays (2016) small steady tilt ESG US investment-grade corporate bonds G dominates S does not hurt
- Hermes (2017) proprietary measures of ESG risk – QESG score – lowest score widest CDS
- Insight (2016) + Allianz (2017) broad ethical negative screening minimum effect long-term returns, focused screens could have more
- Bauer + Hann (2010) E factors link to higher cost of debt financing + lower credit ratings
- Oikonomou et al (2017) / Hsu + Chang (2015) CSR links to bond yield spreads + ratings
- Amirasiani et al (2017) no link 2005-2013 – but in 2008-2009 GFC high CSR firms benefited from lower bond spreads

- Several papers note that ESG issues are not fully reflected in pricing

- Cantino et al (2017) some consensus on positive effect of ESG on cost of equity – but “ results concerning the relationship between ESG sutainability and debt financing are ambiguous”

1.4 Sovereign Bonds

- Capelle-Blanchard et al. (2017) OECD countries with good ESG performance tend to have less default risk/ lower bond spreads – G then S then E

- Allianz (2017b) ESG risk factors are not fully reflected in sovereign credit ratings

- Sustainalytics (2017b) positive correlation between countries ESG and credit ratings

- Lazard (2017) strong link country's ESG standards and creditworthiness

- Union Investments (2014) correlations between corruption + number of sovereign defaults

- Qian (2012) strong institutions associated with fewer sovereign default crises

- Choi + Hashimoto (2017) IMF's Data Standards Initiatives links to spreads of emerging market sovereign bonds

1.5 UN PRI (2017) Summary

- Both academic and market research supports clear link between ESG factors and credit risk

- Most academic research is based on credit ratings to measure credit risk – very few papers use alternative measures (such as credit default swaps)

- Anecdotal observation of corporate defaults (particularly investment-grade) show strong G link – E + S harder to capture

- Academic research linking ESG factors + sovereign credit worthiness less well supported – but is much evidence that ESG factors impact macroeconomic variables and potential growth – which in turn impact sovereign credit ratings

1.6 ESG + Emojiis

- Arjalies, D-L, Bansal, P., (2018), ‘How Investment Managers Accommodate Societal Issues in Financial Decisions’

- *Fixed income managers incorporate ESG via financial data*

- *Equity managers did not financialize ESG, used emojiis etc – causing more integration of E+S factors*

1.7 Qualifying Factors

- Most ESG research use past data – may not hold in future
- May be (selection and other) biases in research
- Structure of economies and markets change over time, as do policies – investors need to make forward looking decisions
- Research on ESG in fixed income is still very limited – most focused on credit risks
- Still little analysis of ESG factors + market risks, inflation, liquidity and other risks/ opportunities
- Investors are advised to apply their own additional research and insights

Section 3.

Outstanding Challenges

3.1 Outstanding challenges

Despite evidence and will, implementation challenges remain

- Many different definitions of ESG (particularly S)… leads to many implementation strategies / methodologies

- Data is improving (corporate reporting) + lots of innovative sources (satellite data / artificial intelligence)… BUT still lacking in smaller markets and rests on surprising small number of specialists

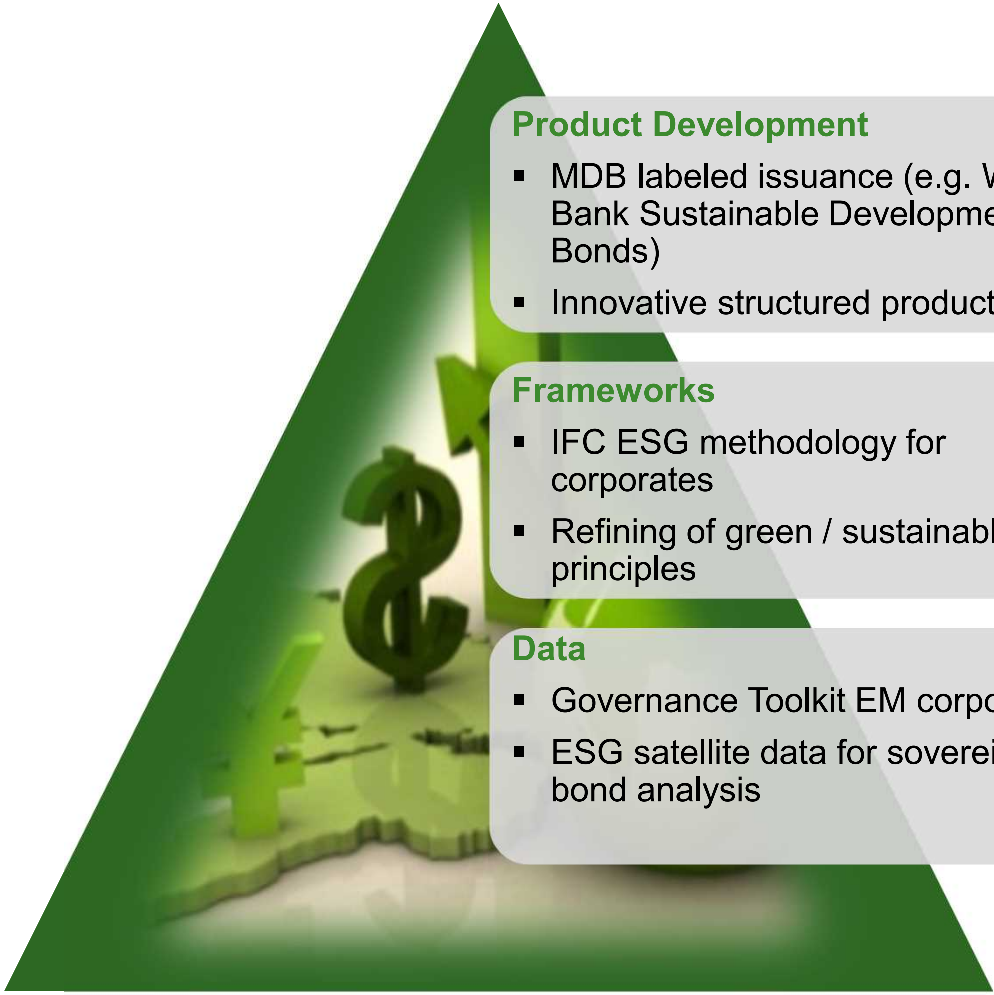
- Lack of investment instruments which meet needs / intentions

Breakdown ESG components

Institution	E	S	G
CFA Institute	Climate change and carbon emissions	Customer satisfaction	Board composition
	Air and water pollution	Data protection and privacy	Audit committee structure
	Biodiversity	Gender diversity	Bribery and corruption
	Deforestation	Employee engagement	Executive compensation
	Energy efficiency	Community relations	Lobbying
	Waste management	Human rights	Political contributions
	Water scarcity	Labor standards	Whistleblower schemes
MSCI	Carbon emissions	Labor management	Corporate governance
	Energy efficiency	Diversity and discrimination	Business ethics
	Natural resource use	Working conditions	Anti-competitive practices
	Hazardous waste management	Employee safety	Corruption and instability
	Recycle material use	Product safety	Anti-bribery policy
	Clean technology	Fair trade products	Anti-money laundering policy
	Green buildings	Advertising ethics	Compensation disclosure
	Biodiversity programs	Human rights policy	Gender diversity of board
PRI Principles for Responsible Investment	Carbon intensity	Demographics	Institutional strength
	Water stress	Education and human capital	Corruption
	Energy resources and management	Health levels	Regime stability
	Natural disasters	Political and press freedoms	Rule of low
	Biocapacity and ecosystem quality	Human rights	Financial reporting
	Pollution	Labor standards	Regulatory effectiveness
	Biodiversity	Social exclusion	Adherence to conventions
	Agriculture	Income inequality	International relations

Section 4.
What is the World Bank doing to help?

4.1 How can World Bank help to catalyze mainstreaming of ESG into Fixed Income Portfolios?



Product Development

- MDB labeled issuance (e.g. World Bank Sustainable Development Bonds)
- Innovative structured products

Frameworks

- IFC ESG methodology for corporates
- Refining of green / sustainable bond principles

Data

- Governance Toolkit EM corporates
- ESG satellite data for sovereign bond analysis

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World Bank: Paving the Way in Sustainable Investing

- 2008: The first IBRD green bond catalyzed the green bond market and spearheaded disclosure and impact reporting standards for green and other sustainable assets.
- Today: The World Bank is promoting sustainable investment products and capital markets globally.

- ✓ Women's and Girls' Empowerment Awareness Bond
- ✓ Green Growth Bonds
- ✓ Index Linked Notes for Climate Awareness
- ✓ Nikko World Bank Green Fund

- ✓ SDG Equity index-linked bonds
- ✓ ECO3+ Bonds
- ✓ Green Growth Bonds
- ✓ SRI/ESG Emerging Market Currency Program
- ✓ Green Growth Bonds

- ✓ Cool Bond
- ✓ Nikko World Supporter Fund
- ✓ Nikko-World Bank Green Fund
- ✓ Green Growth Bonds

Bonds for Sustainable Development

• Linking World Bank Development Activities to SDGs

- Examples of World Bank sustainable development impacts contributing to four selected SDGs

3 GOOD HEALTH AND WELL-BEING

LAUNCHED PANDEMIC EMERGENCY FINANCING FACILITY THAT WILL RELEASE UP TO $500 MILLION QUICKLY WHERE OUTBREAKS OCCUR TO PREVENT PANDEMICS

5 GENDER EQUALITY

PROVIDE $2.5 BILLION OVER FIVE YEARS IN EDUCATION PROGRAMS THAT WILL DIRECTLY BENEFIT ADOLESCENT GIRLS.

11 SUSTAINABLE CITIES AND COMMUNITIES

LAUNCHED FACILITY TO PROVIDE $800 MILLION IN CONCESSIONAL LOANS TO REFUGEE AND HOST COMMUNITIES

13 CLIMATE ACTION

CLIMATE ACTION PLAN INCLUDES 30+ GIGAWATTS OF RENEWABLE ENERGY; EARLY WARNING SYSTEMS FOR 100+ MILLION PEOPLE; AND CLIMATE-SMART AGRICULTURE INVESTMENT PLANS FOR 40+ COUNTRIES

Data based on World Bank's 2016 annual report

Bonds for Sustainable Development
Impact Reporting

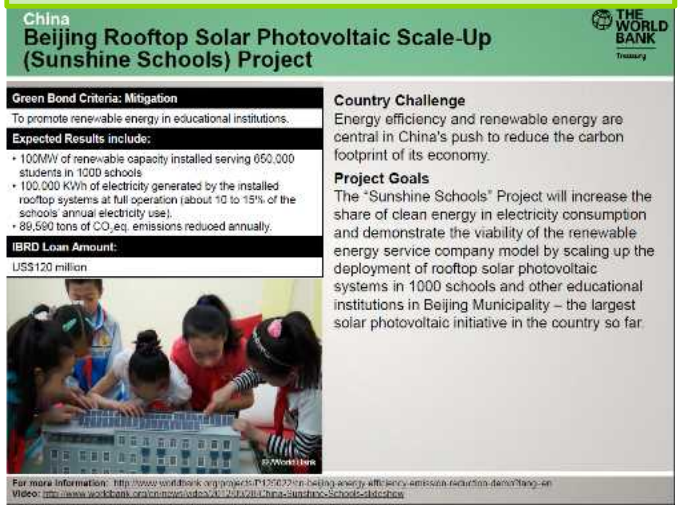
Various stages of impact reporting for investors

1

Individual project documentation:
http://www.worldbank.org/projects

2

Summary project slides:
http://treasury.worldbank.org/cmd/htm/MoreGreenProjects.html



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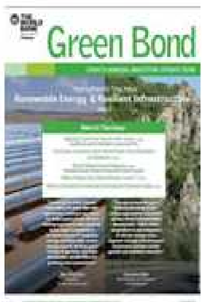
Annual **Newsletters**:
http://treasury.worldbank.org/cmd/htm/WorldBankGreenBondNewsletters.html and http://treasury.worldbank.org/cmd/htm/World-Bank-Investor-Newsletters.html



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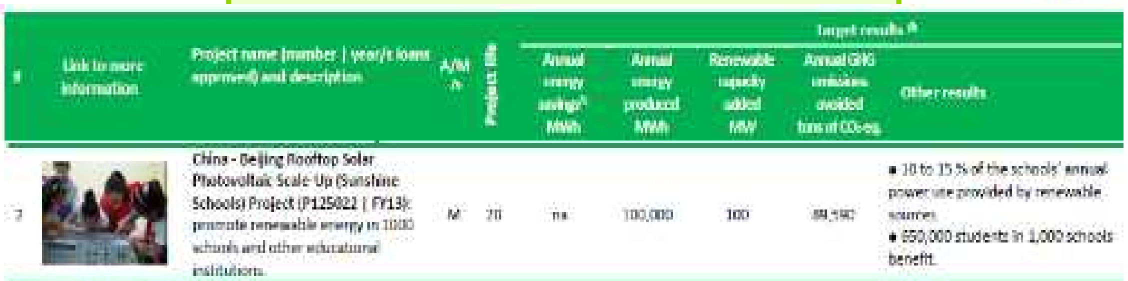
Comprehensive **Impact Report**:
http://treasury.worldbank.org/cmd/pdf/WorldBankGreenBondImpactReport.pdf



#	Link to more information	Project name (number | year/s loans approved) and description	A/M	Project title	Annual energy savings MWh	Annual energy produced MWh	Renewable capacity added MW	Annual GHG emissions avoided tons of CO2-eq	Other results
7		China - Beijing Rooftop Solar Photovoltaic Scale-Up (Sunshine Schools) Project (P125022 | FY13): promote renewable energy in 1000 schools and other educational institutions	M	20	na	100,000	100	89,590	• 10 to 15 % of the schools' annual power use provided by renewable sources • 650,000 students in 1,000 schools benefit