The role of climate change modelling in Financial Services

BIEE

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The need

Global drivers of change for banks and investors

External change drivers

Global regulatory priority

- Recognition of climate change as a source of major systemic risk
- Regulatory requirements on firms to manage those risks

Investor pressure

- Recognition that climate change is a source of major financial risk
- Investor mandates reflecting appetite for sustainability and need to manage climate risk

Banks' and investors' response

Typical external commitments

- Develop and publish climate change risk management capability
- Align lending / assets under management to Paris / a below 2 degree outcome
- Net zero by 2050
- Halve financed emissions by 2030
- Publish 2025 targets aligned with these commitments

Financial services firms must assess climate risk across their portfolios

Transition risk: as society responds, what are the financial consequences for firms and property?

Physical risk: as the climate changes, what is the impact on buildings, property and economies?

Equities **Bonds**	Listed firms
Corporate loans	Unlisted firms
Collateralised loans **Mortgages** **Real estate**	Properties
Sovereign bonds	National Governments

Climate change modelling is required to answer key questions

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What is my climate change risk, and the value that could be lost from my balance sheet ?

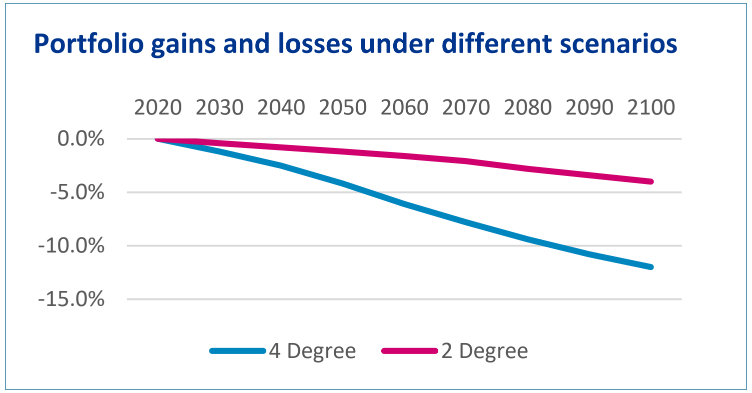
How will the value of my assets, and my clients assets, change over the next 30+ years due to Climate Change? How does this differ under different scenarios? How do I respond to the Regulators Stress Test requirements.

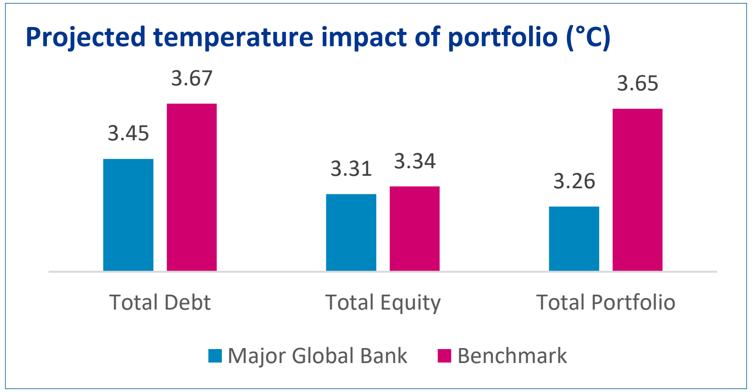
How are the investments we have made impacting the climate, and how does this compare with my peers?

Is this congruent with my values, and the values of my clients and investors?

Now we understand our position, what opportunities exist to reallocate capital to improve our impact on the climate at the same time as making commercial returns?

What is my strategy going forward? What opportunities are there to change what we invest in and fund? How will I engage the market and demonstrate that I am taking this seriously and having a positive impact on society as well as protecting my investors capital and making commercial returns?





Response of corporates

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1. Their climate risk profile

- Transition risk: Their business model, balance sheet, transition strategy, supply chain and product use strategies, and investors' and lenders' assessment of the credibility of that strategy
- Physical risk: Vulnerability of their physical assets to changing climate, and their mitigation and adaptation plans

2. Their temperature alignment

- The "fit" of their projected emissions within investors' and lenders' sustainability commitments

3. Their communications strategy

- The quality of their climate-related reporting and disclosures
- Their direct engagement with their major lenders and investors to enable them to adjust their "outside-in" view of them to reflect a more tailored perspective

The modelling

How our model works and can be used

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Baringa’s Climate Change Scenario Model

Scenario → A Sector-level → B Company-level → C Instrument-level

Pathways

- Emissions
- Temp Change

Transition risk

- Resource costs/prices
- Energy/tech market size
- Carbon price
- Revenues
- Costs
- Capex

Physical risk

- Asset data
- Hazard projections
- Revenue disruption
- Damage costs

Company-level

- Aggregate company-level impacts
- P&L
- Balance sheet

Impacts

- Equity and bond revaluation
- Loan losses
- Property revaluation

Use cases

Portfolio modelling & reporting

- Regulatory reporting (Stress Testing)
- Risk reporting & disclosure (TCFD)

Client reporting

- Client portfolio analysis
- Portfolio temperature alignment

Strategic reporting

- ESG / stakeholder relations
- Fund and portfolio optimisation

Commercial direction

- Business strategy
- Modelling financed emissions
- Commercial decisions

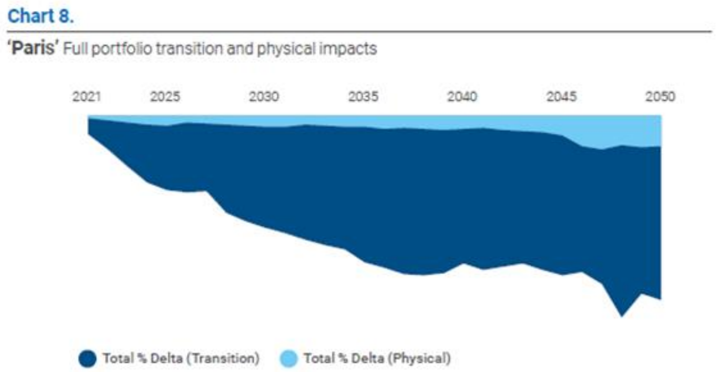
Instrument / asset level results

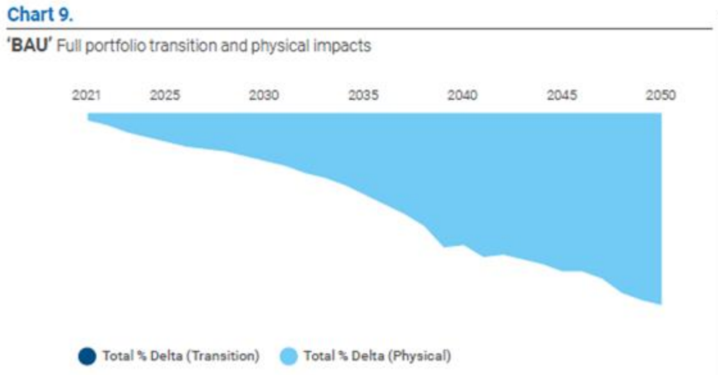
- Security valuation & credit scoring
- Loan / asset / mortgage pricing
- Transaction / asset due diligence

Illustrative outputs: Portfolio-level

1 Scenario analysis

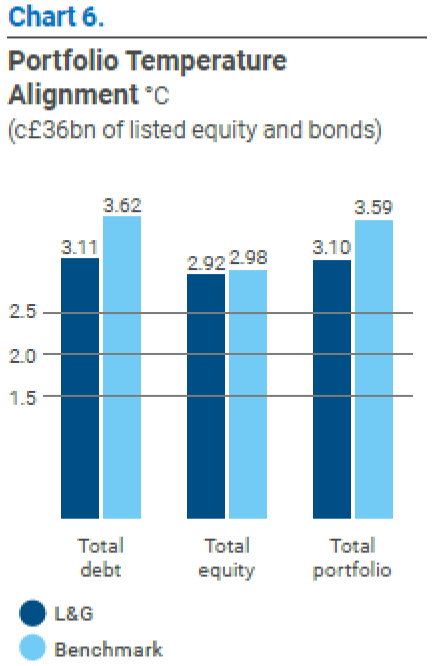
Our model quantifies both physical and transition Climate Change impacts on the valuation of your financial assets, including equities, bonds and the default rate of loans





2 Portfolio temp alignment

Portfolio temperature alignment is an powerful insight to set your strategy and future investment decisions, as well as to communicate your values to your stakeholders



Examples from L&G's 2019 TCFD report

Transition risk: Power generation illustration

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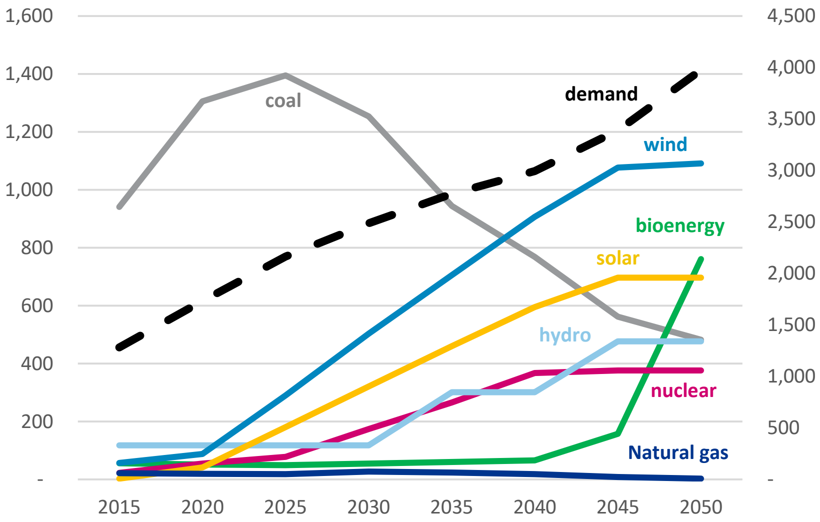
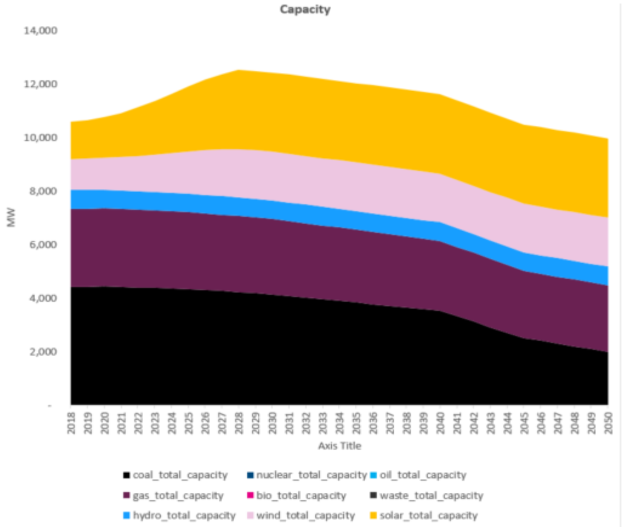
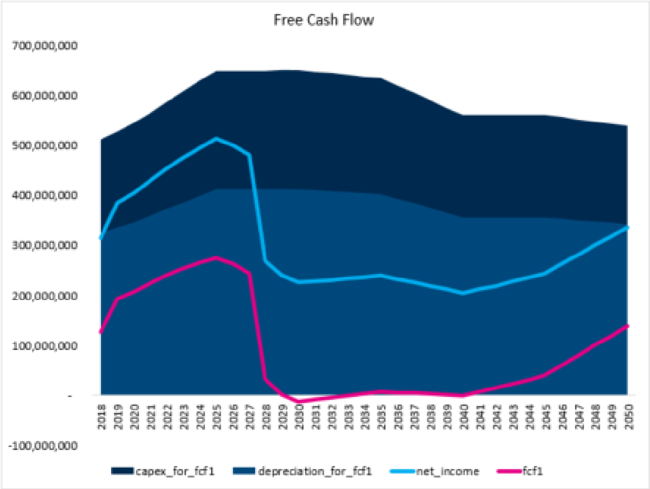
Based on regional scenario pathway…



…what happens to a firms' capacity and generation…



…and what are the financial implications?



Physical risk: oil and gas illustration

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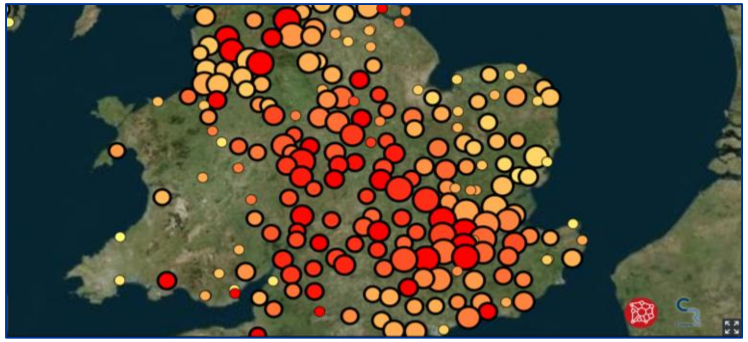
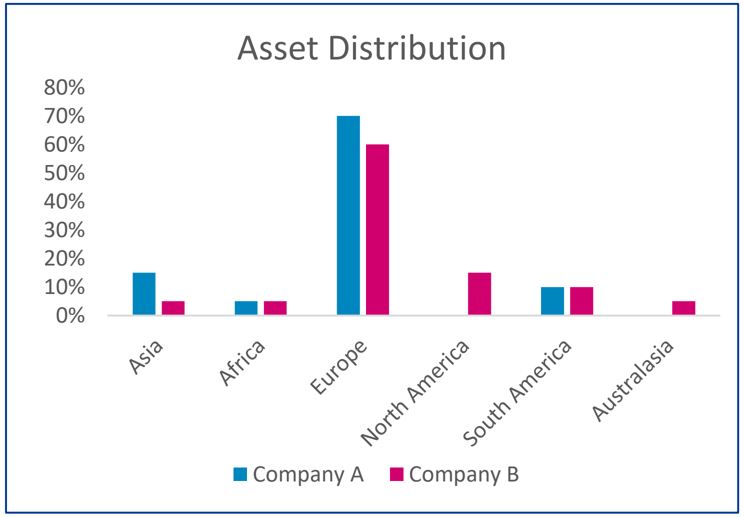
Identify physical assets…

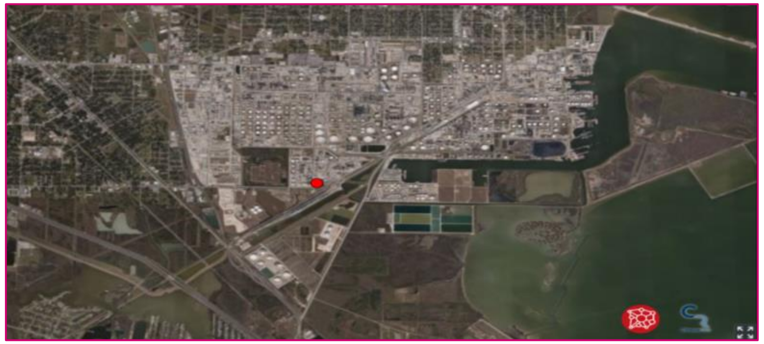
1 Asset Locations

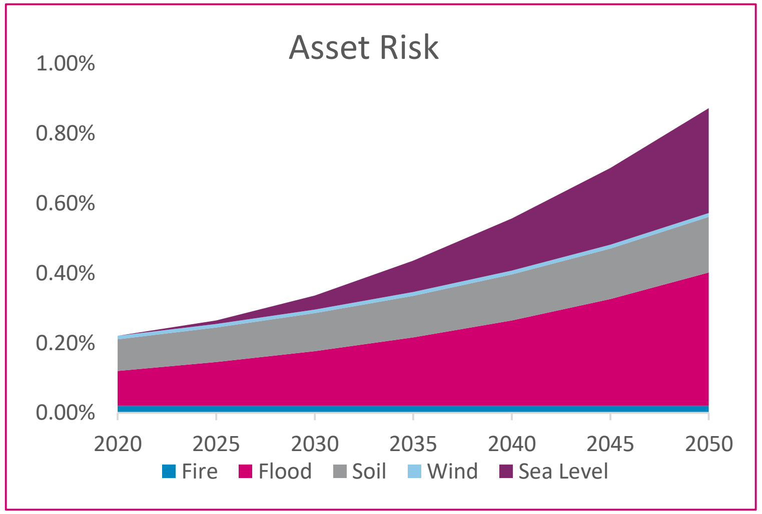




…analyse changing hazards…

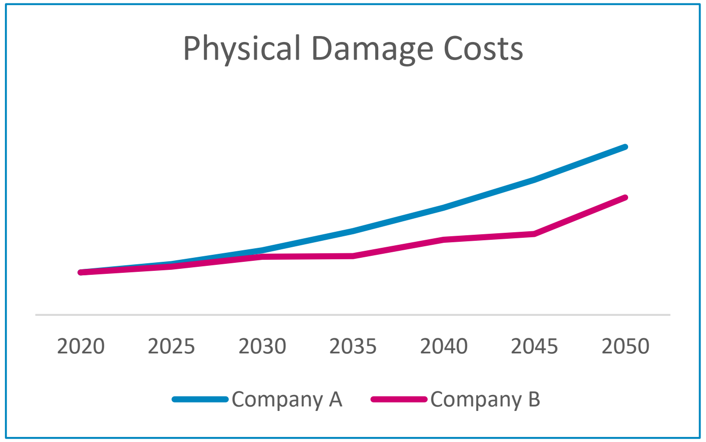
2 Asset Risk Analysis

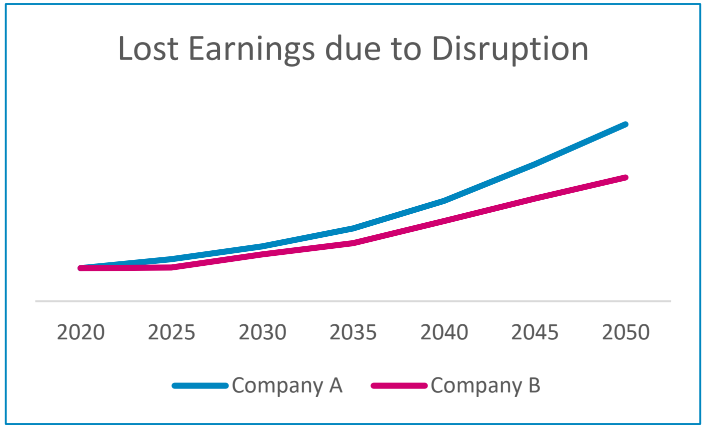




…and assess financial impact

3 Aggregate P&L Impact





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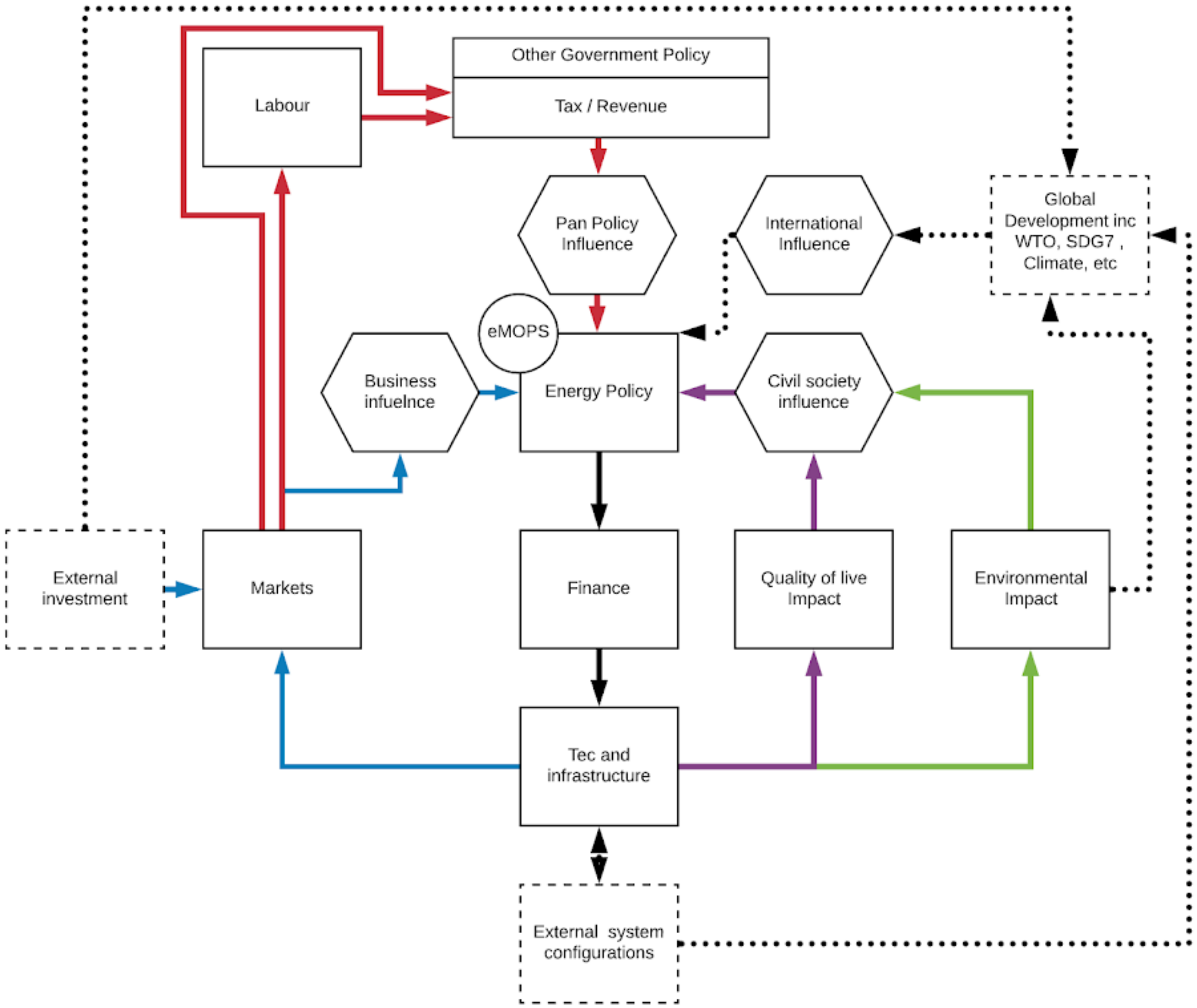
The impact

Mark's diagram



What impact will the changes in finance have?

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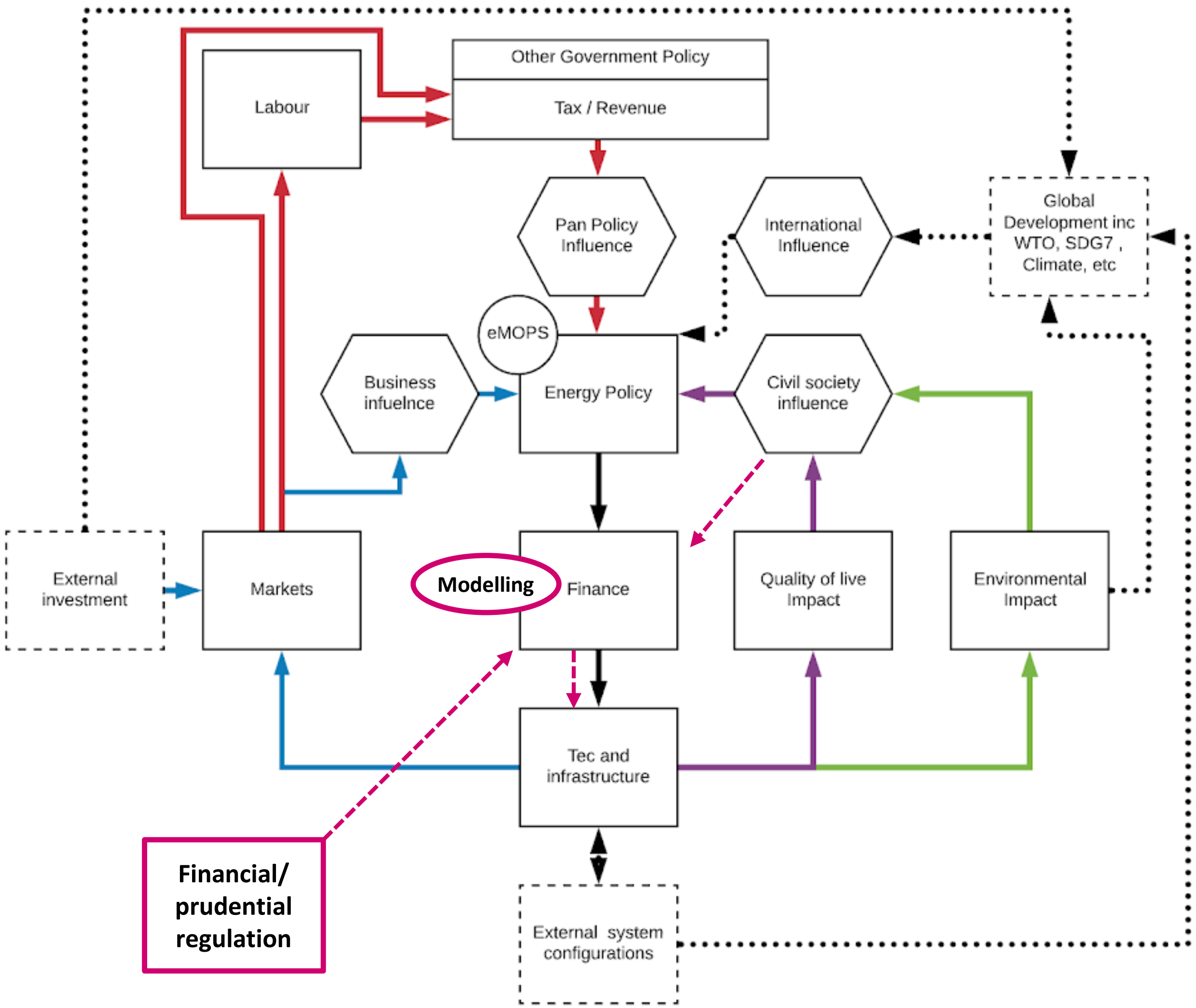

Does finance start influencing energy and decarbonisation policy?

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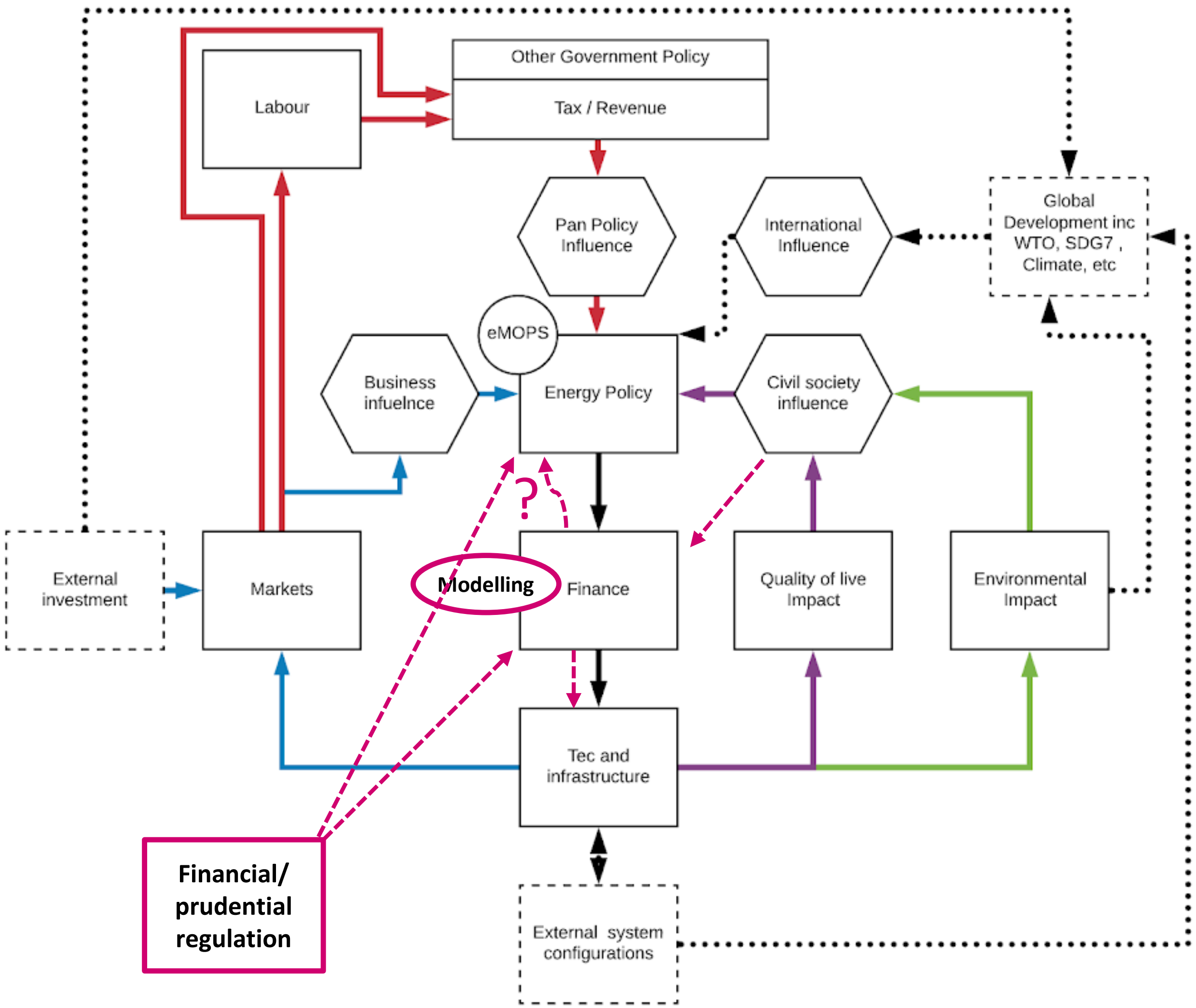

About Baringa Partners

Baringa Partners is an independent business and technology consultancy. We help businesses run more effectively, navigate industry shifts and reach new markets.

We use our industry insights, ideas and pragmatism to help each client improve their business.

Collaboration is central to our strategy and culture ensuring we attract the brightest and the best. And it's why clients love working with us.

Baringa. Brighter together.

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