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Resource Efficiency and Opportunities for SDGs

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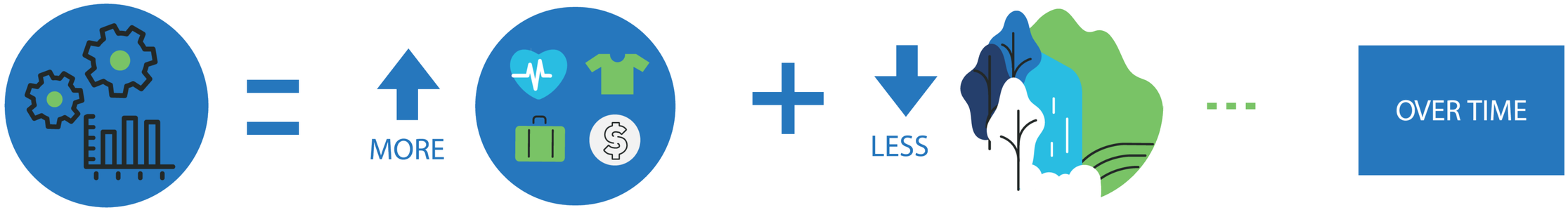
UNESCAP

What is Resource Efficiency (RE)?



Resource Efficiency Improvement

Goods & Well-being

Resources

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RE and the SDGs

↑ Sustainable management of resources

↓ Demand for natural resources

Strong link with HDI improvements

$ Savings can finance several SDGs (social protection)

↑ Green jobs

↓ GHG emissions

↓ Pollution

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Where does the region stand?

MORE THAN 50%

Resource consumption

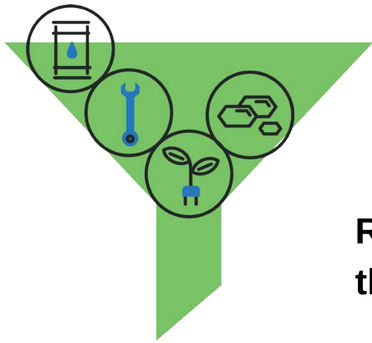
32%

Of world economic output

It takes approximately double the quantity of material resources as input to produce each dollar of GDP in the region, compared to the rest of the world

Asia and the Pacific

$1



Rest of the world

$ 1

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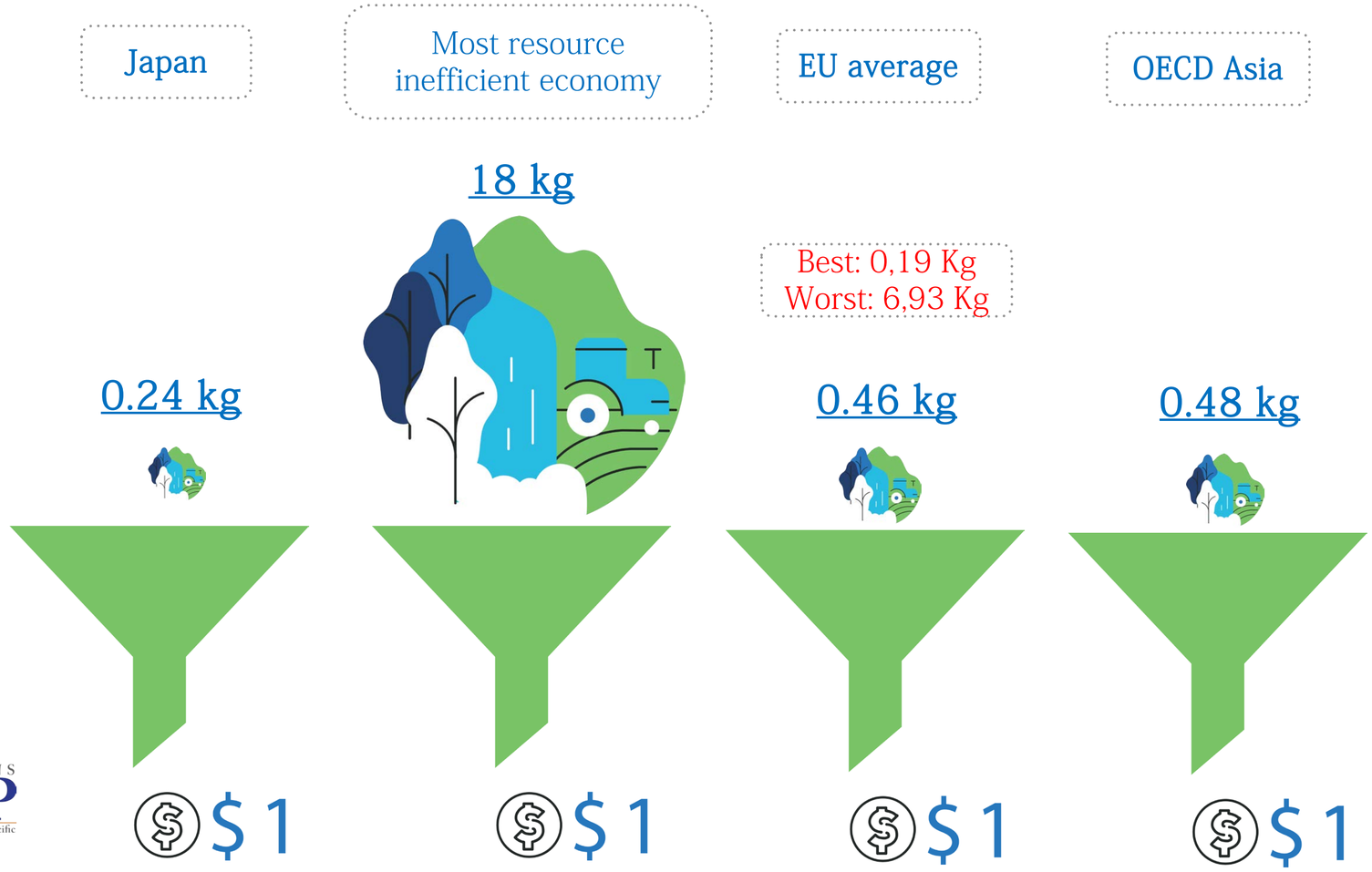
Where does the region stand?

The most efficient economy in Asia is performing

77 times better

than the least resource efficient economy!



In terms of energy efficiency, the Asia-Pacific region is the

least energy efficient region

compared to all other regions in the world

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Benefits of RE improvement: increasing the region's energy efficiency by 20%

20% increase in energy efficiency

ECONOMIC

Can deliver fuel saving that amounts to **100% of the total current annual FDI flows** to the region

SOCIAL

The fuel savings amount to employing **30 million people** at the average annual wages of the region

ENVIRONMENTAL

Reduction in GHG emissions by about **12% of the total emissions** of the region

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Benefits of RE improvement: increasing energy efficiency to regional best performer's level

Matching best performer

ECONOMIC

Can deliver fuel saving that amounts to as much as **370% of the total current annual FDI flows** into the whole region

SOCIAL

The fuel savings amount to employing over **100 million people** at the average annual wages of the region

ENVIRONMENTAL

Represents reduction in GHG emissions by about **45% of the current emissions** of the region

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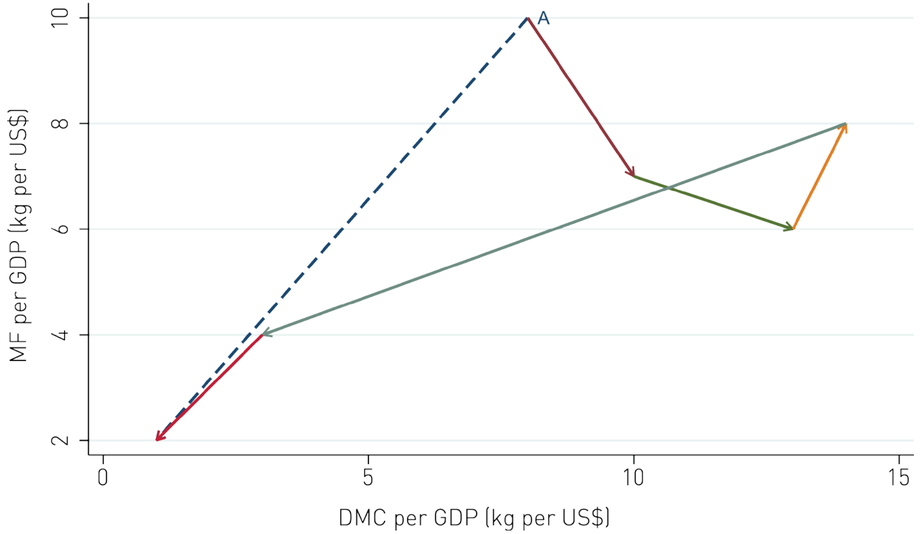
RE transition analysis: tracing non-linearities

Need to simultaneously monitor RE changes over multiple dimensions over time.

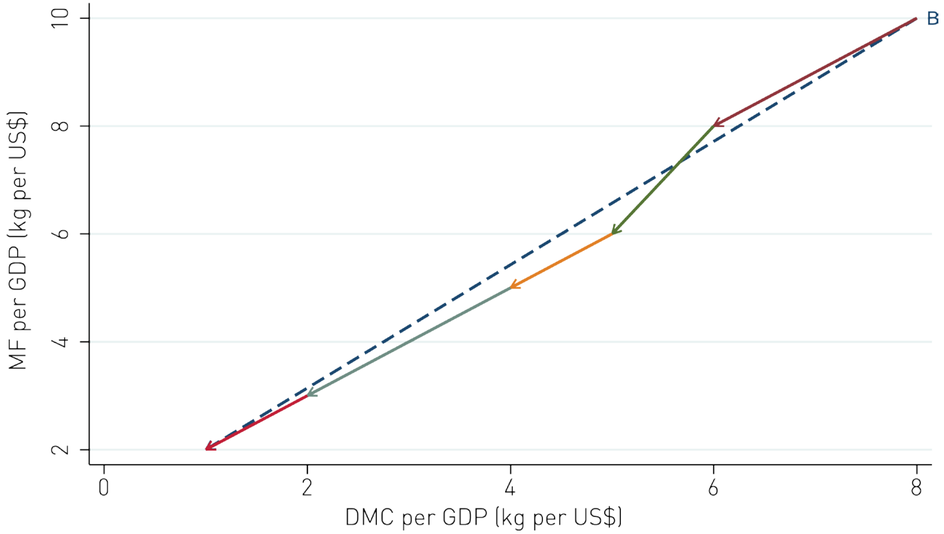
Different transition paths available for countries. But did they choose the least resource intensive pathway ?

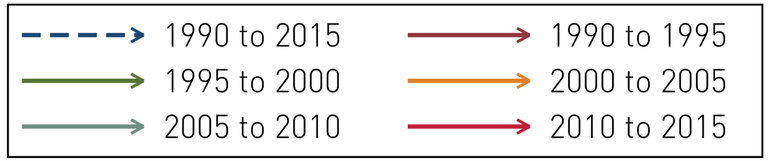
The more linear a country's actual transition path is more optimal it is.

Resource efficiency transition paths of country A, 1990-2015



Resource efficiency transition paths of country B, 1990-2015





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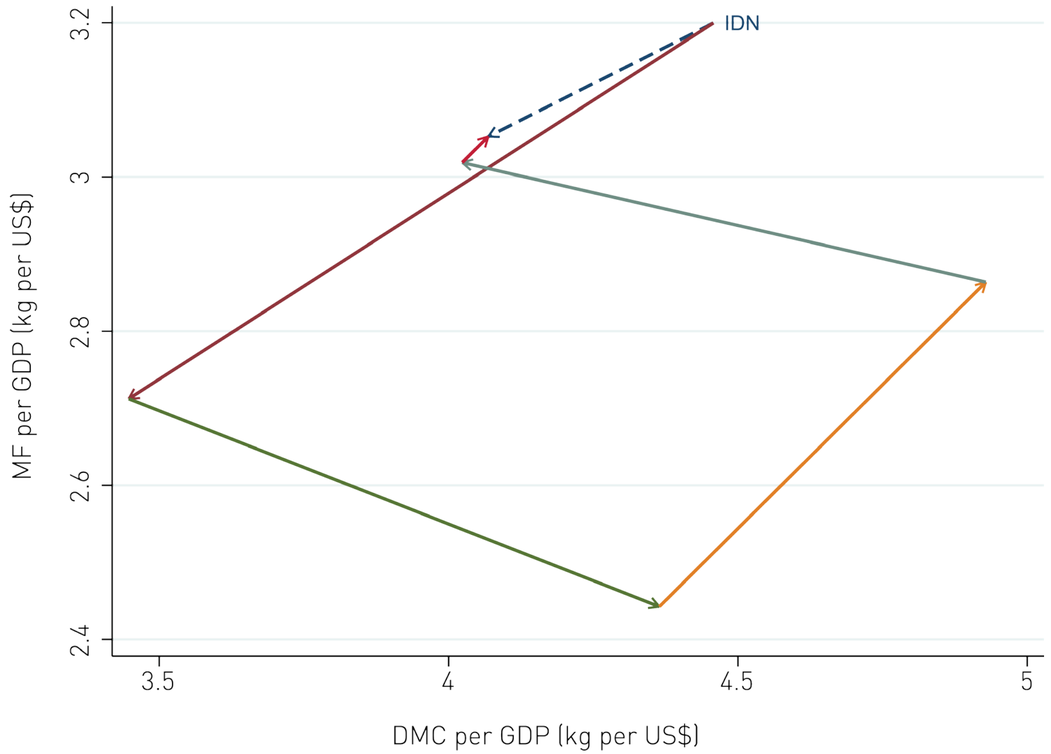
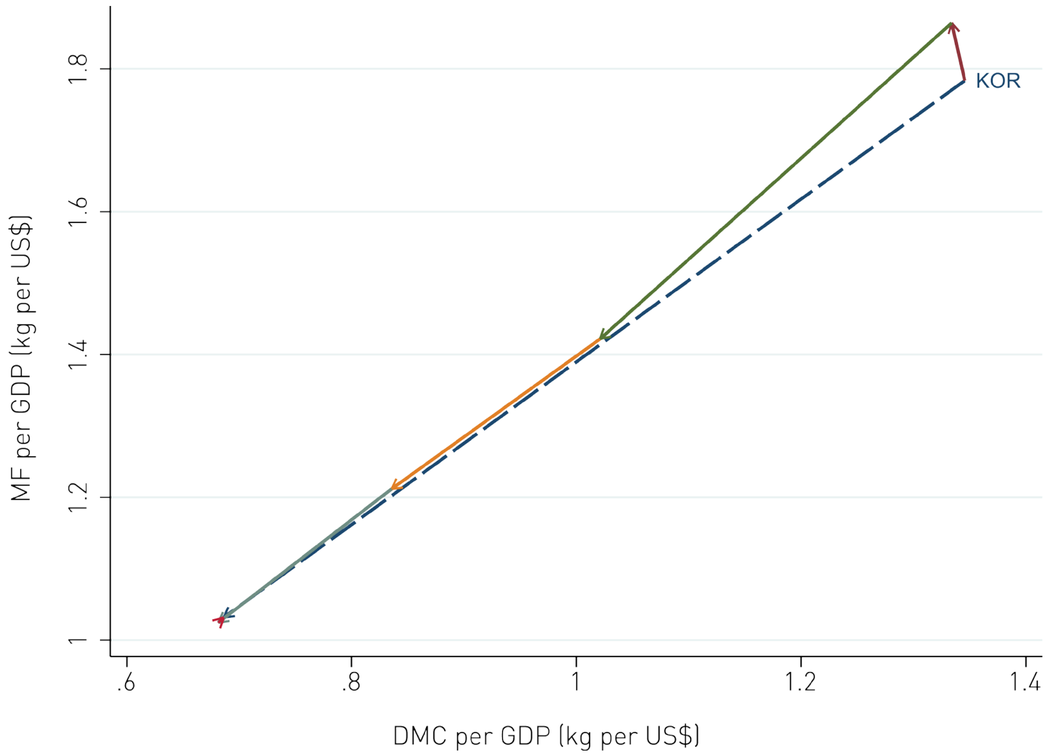
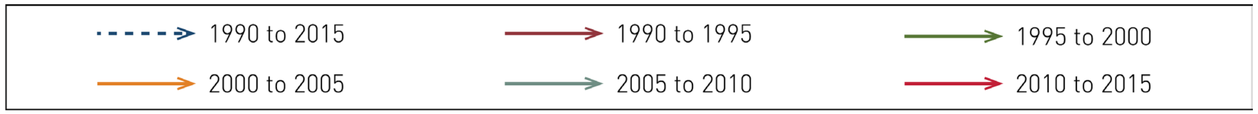
RE transitions: examples

Indonesia
RETS: .06



Republic of Korea
RETS: .57





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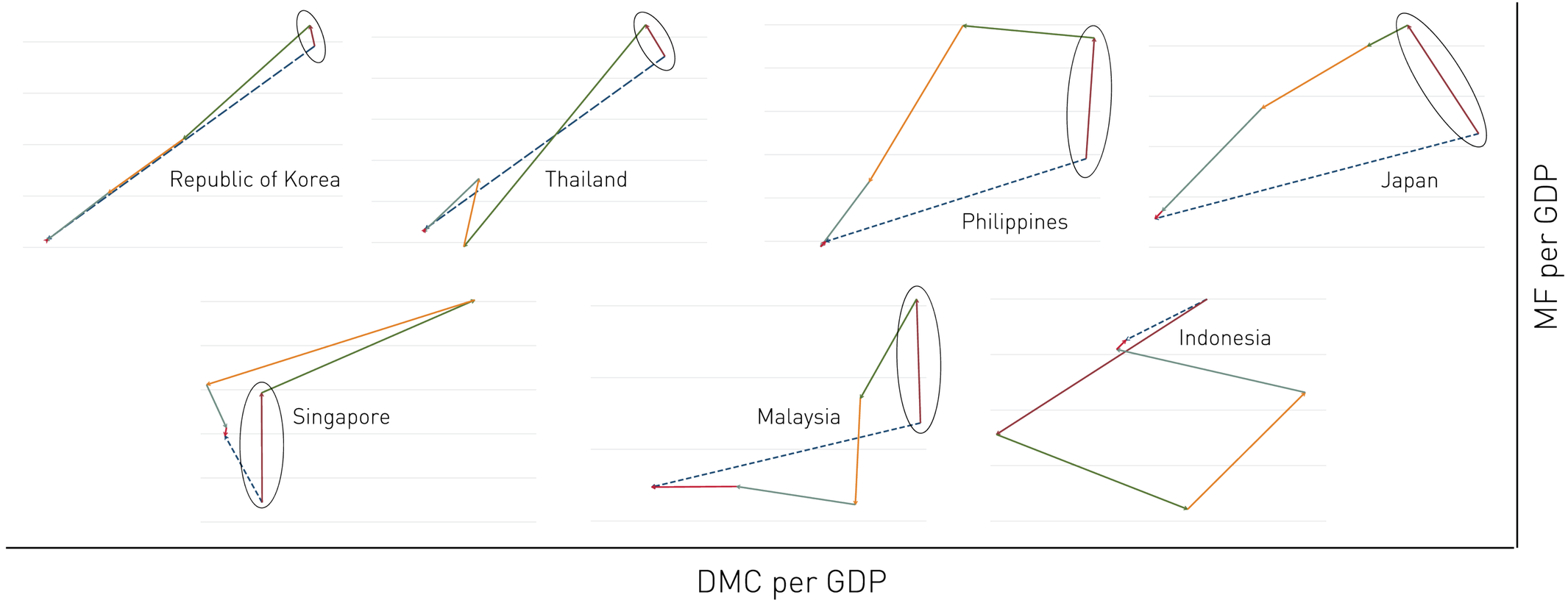
Does aberration in RE paths indicate looming economic bubbles?



Note: The red arrow in the circles indicates the resource efficiency transition for 1990 – 1995. MF=material footprint; DMC=domestic material consumption.

Macro-level policy pathways to promote RE

1.

Integrate resource efficiency targets within development agendas

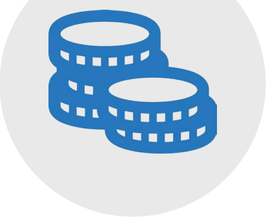
2.

Establish legal and regulatory measures to enforce resource efficiency standards and to promote awareness

3.

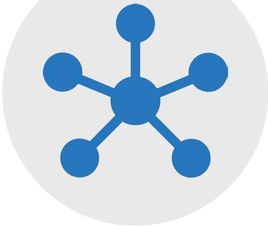
Create an overarching macroeconomic policy framework that promotes resource efficiency

4.



Promote an enabling financing framework

5.



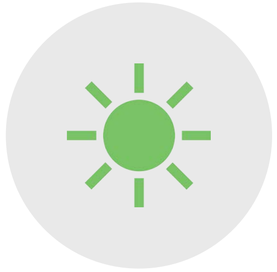
Re-evaluate trade portfolios and their implications for resource efficiency

Sectoral-level policy pathways to promote RE

1.

Mainstream resource efficiency targets within sectoral policies

2.



Leapfrog to efficient technologies and improving innovation capacity

3.

Prioritize life-cycle approaches and effective waste management

4.

Generate better data and indicators on resource efficiency

Conclusion

1

RE and CE are highly inter-linked with strong complementarities

2

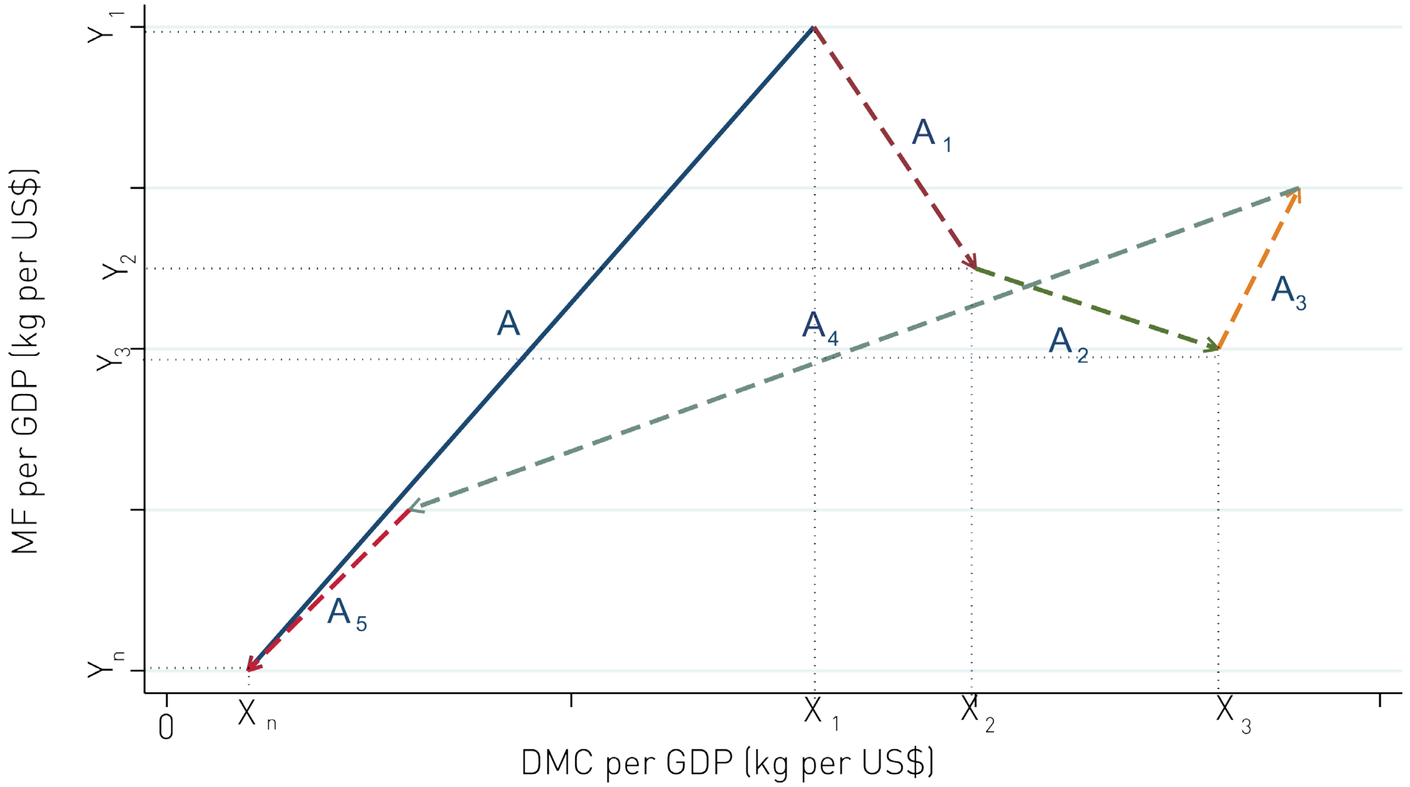
Need policy support as well as citizen action

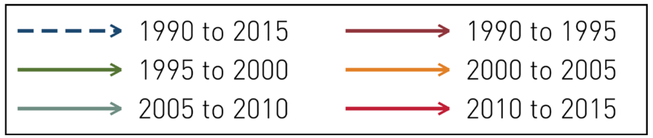
3

Huge potential for both CE and RE to boost SDGs, especially in the region

THANK YOU
Twitter @stefanosfotiou

Illustrative example of a RE transition path of a country, 1990–2015





$$RETS = \frac{\|A\|}{\sum_{i=1}^{n-1} \|A_i\|}$$ where $\|A\|$ represents the Euclidean norm of each path

$$\|A\| = \sqrt{(X_1 - X_n)^2 + (Y_1 - Y_n)^2}$$

$$\|A_i\| = \sqrt{(X_i - X_{i+1})^2 + (Y_i - Y_{i+1})^2}$$

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