



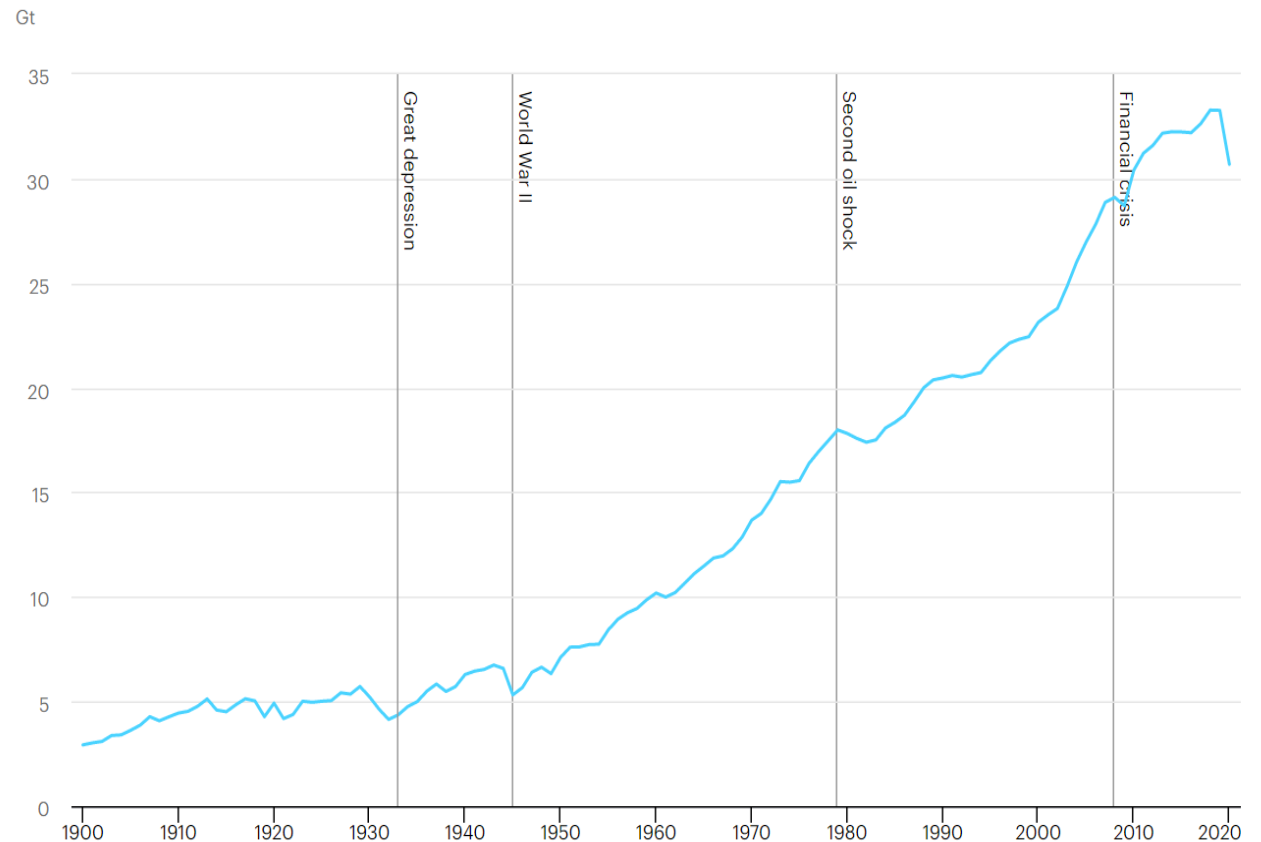
GREEN RECOVERY: SOME LESSONS FROM THE PAST

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Crises reduce emissions, but not climate change

- Emissions will likely decline by about **8%** in **2020** relative to 2019 (IEA, 2020)
- The temporary drop in emissions is **inconsequential** for climate change
 - The stock and composition of GHGs in the atmosphere matter – not short-term flows
 - Emissions have always bounced back (and risen even stronger) in past economic crises
- To limit average warming to 1.5°C, **annual** emission reductions of 7.6% are necessary from 2020-2030 (UNEP, 2019).
 - Persisting behavioral changes may help reducing emissions beyond the crisis, but uncertain: **ambitious action needed**

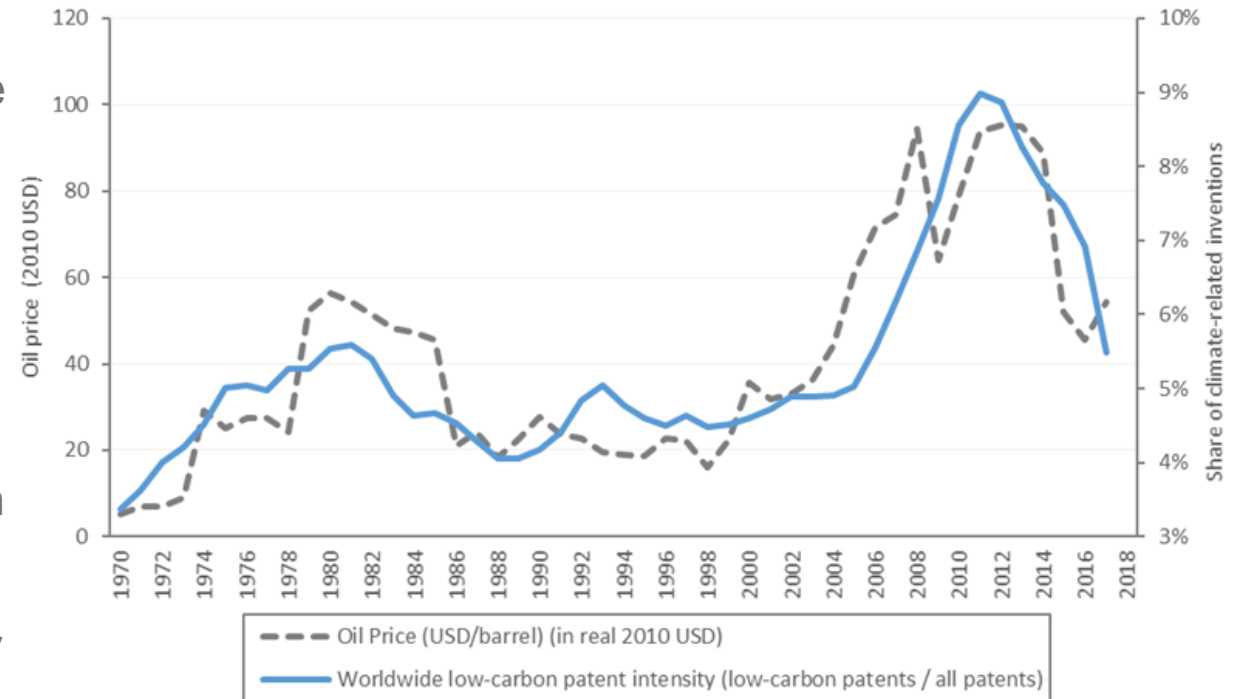


Source: IEA, 2020



The low-carbon transition is at risk

- Low fossil-fuel energy prices **reduce incentives** for investments in low-carbon technologies
 - The double **shock** from the **demand side** and the **supply** side have caused oil prices to decline by as much as 70%
- **Young and small firms** drive radically new innovation, but are **disproportionally impacted** by the crisis
- **Economic uncertainty** particularly bad in sectors with long time horizon like energy
- **Calls for weakening environmental policies** already heard in several countries (e.g. NLD, USA)
- → Meeting the targets of the Paris Agreement may therefore be even more difficult now





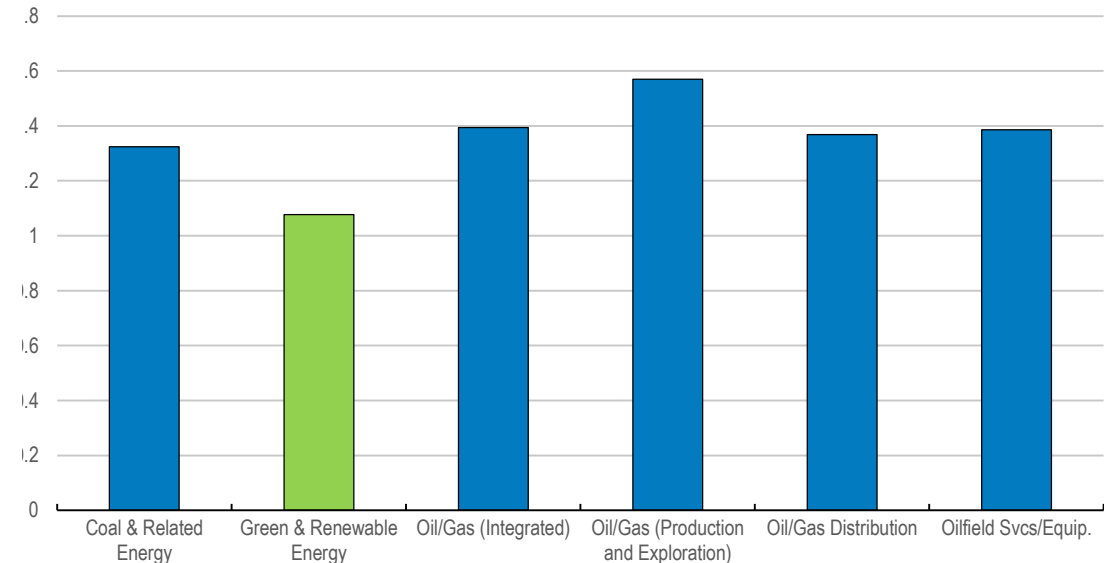
The fossil fuel industry is also under stress

- The **future for energy markets is uncertain** with pressures on oil prices
- Over the **past five years**, the **fossil-fuel industry** has, on average, **performed worse** and been considered more risky by investors

Long-run stock performance of fossil-fuel stock indices vs. other market indices



Relative sector risk to overall market risk (average 2013-2019)



➤ **With both low-carbon and fossil industries at risk, a key role for policy-making to tilt the balance towards sustainable energy sources**

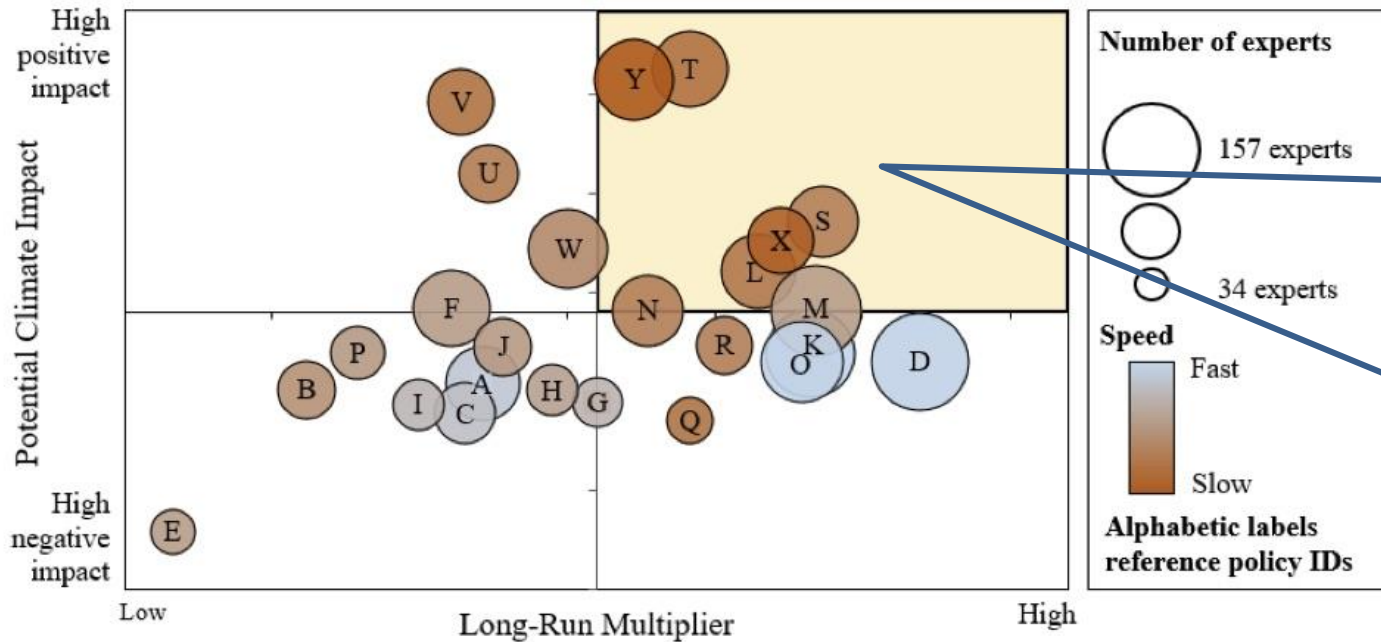


Green fiscal recovery packages

- Objective: using expansionary policy to reignite growth while reducing emissions
- Examples of currently attractive options:
 - Energy efficient retrofitting of buildings : jobs in affected construction sector (low-skill), LT emissions reductions, co-benefits (energy poverty, health)
 - Support to innovation & adoption of GPT (storage) or enabling technologies (e.g. AI, communication networks): LR productivity; benefits for health tech, behavioural changes from covid
 - Renewable energy infrastructure: jobs SR, lower cost
- A win-win policy?
 - Trade-offs: impact on jobs vs emissions; Speed of effect; short and long-run multiplier



Assessing the trade-offs (Hepburn et al. 2020)



A	Temporary waiver of interest payments	N	Worker retraining
B	Assisted bankruptcy (super Chapter 11)	O	Targeted direct cash transfers or temporary wage increases
C	Liquidity support for large corporations	P	Rural support policies
D	Liquidity support for households, start-ups and SME's	Q	Traditional transport infrastructure investment
E	Airline bailouts	R	Project-based local infrastructure grants
F	Not for profits, education, research, health inst. bailouts	S	Connectivity infrastructure investment
G	Reduction in VAT and other goods and services taxes	T	Clean energy infrastructure investment
H	Income tax cuts	U	Buildings upgrades (energy efficiency)
I	Business tax deferrals	V	Green spaces and natural infrastructure investment
J	Business tax relief for strategic and structural adj.	W	Disaster preparedness, capacity building
K	Direct provision of basic needs	X	General R&D spending
L	Education investment	Y	Clean R&D spending
M	Healthcare investment		

T: clean energy infrastructure

Y: clean energy R&D

S: connectivity infrastructure

X: general R&D spending

L: education

N: worker retraining



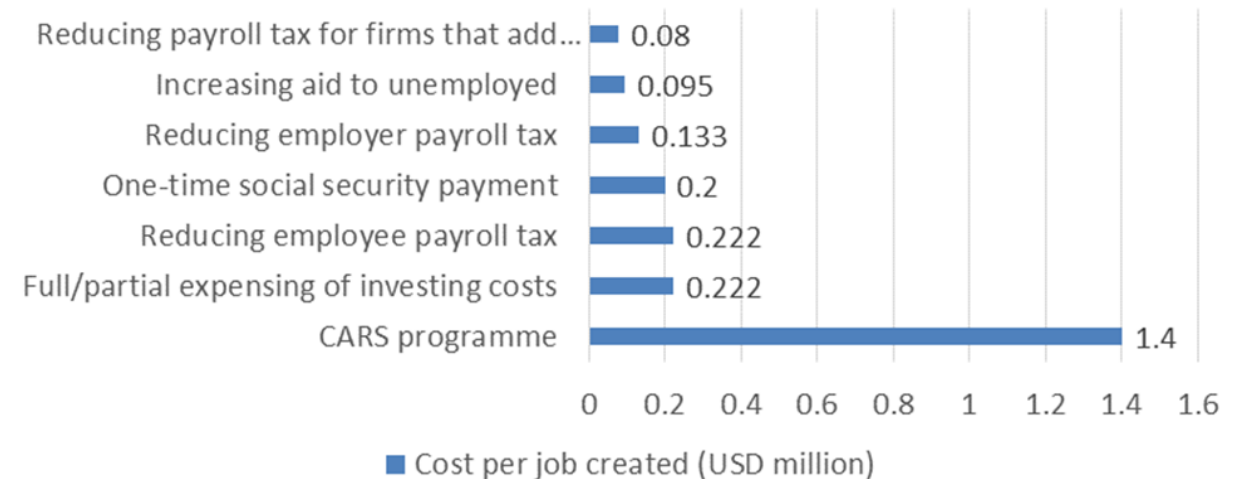
What to expect? Learning from the GFC

- Different crises
 - Public debt, fiscal space
 - Precautionary behavior (saving)
 - Uncertainty around consumption (travel, social activities)
 - Health risks
- But the best available experience
 - GFC: 16% of fiscal stimuli toward green (\$500bn)
 - Some ex-post analyses (surveyed in Agrawala et al 2020)



Two birds with one stone?

- Clear environmental benefits
 - Green American Recovery and Reinvestment Act (ARRA): 8.6Mt CO₂ saved annually for renewables, 9-28Mt for cars
- Modest job effects
 - Popp et al (2020): green ARRA \$1 million for 15 jobs
 - Gayer and Parker (2013): CARS or cash for clunkers programme: \$1.4 million per job



Source: Gayer and Parker (2013)



Why so few jobs? Paying attention to the supply side

- Domestic talents, firms, infrastructure
 - GFC: focus on demand side (e.g. FITs for wind/solar, rebates for cars)
 - Popp et al 2020 = pre-existing level of green skills matters. Matching green investments to the skill base of the local economy
 - Complement GS packages with training programmes
- International dimension
 - Global supply chains: after GFC, renewables subsidies ended up with Chinese PV firms (few jobs, although lower costs for consumers). Political economy
 - Knowledge spillovers



Increasing the environmental benefits: Investment support is not enough

- Investment support needs to be complemented with price signals
 - Ex: 2009 ARRA, USD 2 bn for CCS to coal-fired power plants; 2009 European Energy Programme for Recovery (EEPR), EUR 1 bn to CCS. All CCS projects later abandoned because of low carbon prices
- Carbon pricing policies (incl. reducing fossil fuel subsidies) and other instruments (standards) to provide incentives & long-term stability for low-carbon activities
 - Could also contribute to restoring public finances, but not urgent (low interest rates) and compensatory and complementary measures should accompany these efforts (and can't have both)



Take-home messages

- Some recovery policies can deliver both economic and climate benefits, but there are clear trade-offs
 - Few win-wins
 - Green recovery packages better at *reshaping* the economy than at *restarting* it
- Focus on co-benefits
 - air pollution (increased risk from covid), health, productivity, inequality
- Green recovery as part of a policy package
 - Complementary policies (environmental, training)



THANK YOU



References

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