Climate change and industrial transformation: Different approaches in Europe and the United States

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8 May 2024

A recent report on the future of the European Union (EU) single market highlights some of the advantages of tax credits as an industrial policy tool. Industrial policy has emerged to the forefront of efforts to tackle climate change and strengthen European industry in the face of increased geopolitical uncertainty. This is inherently important for Europe's resilience. A comparison of recent subsidy schemes in the EU and the United States (US) demonstrates the potential of using tax credits for promoting supply chain resilience, but it also shows that loans and grants can have important advantages when it comes to income distribution and economic stabilisation.

During the Covid-19 pandemic, the Next Generation EU (NGEU) programme was the EU's initial response to the economic challenges of the pandemic. Later, the two NGEU support facilities responsible for funding investments – the Recovery and Resilience [illegible] set up to aid in the transition to climate neutrality, the Green Deal Industrial Plan.

Similarly, the US Inflation Reduction Act (IRA) provides funds to aid in the decarbonisation of the economy. While both programmes pursue similar goals and have similar financial volumes, they differ in their choice of instruments. Whereas EU support is based on direct government investments in the form of loans and grants, the US approach explicitly focuses on indirect support through tax credits.

Both in Europe and the US, institutional and political constraints rather than cost-benefit analyses have long determined the choice of support instruments. In the EU, the absence of significant EU-wide competencies for tax policy meant that direct support in the form of loans and grants became the instrument of choice. In the US, however, narrow majorities

in the US Congress implied that the IRA could only be passed as a budget reconciliation bill, forcing legislators to use revenue measures and leaving tax credits as the preferred support instrument.

US approach provides powerful incentives to transform supply chains

According to the empirical literature, public grants and loans tend to stimulate the additionality of investment, while tax credits tend to boost the aggregate amount of investment and production.[1] Thus, in principle, the EU's NGEU programme offers stronger incentives for radical innovation, which can be an important element of successful economic transformation.

This advantage, however, is reduced to some extent by the large share of infrastructure projects financed by NGEU funds. The US' IRA, meanwhile, is designed to fully exploit its upscaling advantage, as tax credit amounts increase proportionally with the volume of additional investment and production. Moreover, some IRA rules require a relocation of production to the US, further boosting domestic production.

EU approach has stronger income distribution effects

Although income distribution is not the primary focus of either subsidy scheme, the protection of vulnerable parts of the population has been an important element of crisis [illegible] compared to the IRA.

The allocation mechanism for NGEU grants is more generous for EU countries with a relatively lower per capita income and elevated unemployment rates. Consequently, southern, and central-eastern European economies are the largest recipients of NGEU grants. These same countries also request the largest amounts of NGEU loan support because they benefit most from the lower rates applied by the EU relative to market rates.

For the IRA, the allocation of tax credits is market neutral and does not follow an allocation key that explicitly favours specific regions or income groups.[2]

EU approach better suited for stabilising economic growth

Another important element of any crisis response is the stabilisation of economic growth. Here too, NGEU seems more adept than the IRA despite the strong recent US growth performance.

While it is still too early to conduct ex-post studies on the impact of NGEU and the IRA on growth, preliminary estimates point to considerable differences in the ability to stabilise growth. Recent research indicates a significant positive impact of NGEU on EU gross domestic product (GDP), ranging from 1.2% to 3.0% in real terms, over the 2021–2026 period.[3] In contrast, studies expect only a modest growth impact from the IRA on US GDP, estimated between 0.0% and 0.8% over a ten-year period.[4]

The impact of subsidy schemes is likely affected by the regional allocation of funds. Since NGEU was designed to benefit regions with lower per capita incomes the most, this should increase the marginal return of capital as poorer regions tend to have a small initial capital stock.

In addition, NGEU disbursements are linked to the fulfilment of structural reform commitments and have a stronger focus on public infrastructure investments, for which fiscal multipliers are particularly large. The combination of these factors, and the fact that the IRA combines tax credits with revenue and deficit reduction measures, explains why NGEU will likely have a stronger growth impact – so long as absorption of allocated funds

Means of support matter for efficiency of subsidies

Direct and indirect support instruments have different advantages and disadvantages. The success of direct support schemes in the form of loans and grants importantly depends on the ability of public administrators to identify investment opportunities that generate a maximum impact in terms of industrial benefits and growth. Indirect support in the form of tax credits is considerably easier to administer but less targeted, which may make it better suited to upscaling the production of mature technologies.

In principle, the two instruments are complementary, considering them simultaneously could offer a chance to maximise the efficiency of public support schemes; it would give an additional opportunity to promote environmentally friendly production, diversify supply chains, and foster strategic autonomy.

Acknowledgements

The author would like to thank Nicola Gammacorta and Matjaž Sušec for the valuable discussions and contributions to this blog post, and Raquel Calero for the editorial review.

Further reading

Letta (2024), Much more than a market

Footnotes

[1] The empirical literature on government support indicates that direct funding and tax credits are not perfect substitutes. This literature has focused on subsidies for investments in research and development, but its insights can be adapted to investments in green and resilient production capacities.

[2] Progressive elements in the IRA are not related to investment or production tax credits, but rather to healthcare expenditure provisions, tax increases for large corporations, and

[3] Pfeiffer et al. (2021), Qualifying Spillovers of Next Generation EU Investment
European Commission (2024), Strengthening the EU through ambitious reforms and investments
Ba?kowski et al. (2022), The economic impact of Next Generation EU: a euro area perspective
Codogno and van den Noord (2021), Assessing Next Generation EU
Fitch, (2021), NGEU Fund Set to Boost Eurozone Growth
Barbero et al. (2022), The impact of the recovery fund on EU regions: a spatial general equilibrium analysis

[4] Mahajan et al. (2022), Updated Inflation Reduction Act, modeling using the energy policy simulator
Zandi et al. (2022), Assessing the macroeconomic consequences of the Inflation

Reduction Act of 2022
Huntley and Nguyen (2022), Inflation Reduction Act: preliminary estimates of budgetary and macroeconomic effects
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Rusch et al. (2023), Macroeconomic effects of the Inflation Reduction Act