

Greenflation: Impacts on Public Policy and Economic Stability

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ABSTRACT

The study examined the phenomenon of greenflation and its implications for public policy and economic stability. Greenflation refers to the rising costs of goods and services due to environmental policies and green transitions. This study employed a qualitative research design, analyzing secondary data from academic articles, policy reports, and economic analyses. Findings indicate that greenflation, while promoting environmental sustainability, presents challenges such as increased production costs, inflationary pressures, and social inequality. These outcomes necessitate comprehensive public policies to mitigate adverse economic impacts and ensure equitable green transitions. The study underscores the need for policy frameworks that balance environmental goals with economic stability and social equity.

ABSTRAK

Studi ini mengkaji fenomena inflasi hijau dan implikasinya terhadap kebijakan publik dan stabilitas ekonomi. Greenflation mengacu pada kenaikan harga barang dan jasa akibat kebijakan lingkungan dan transisi ramah lingkungan. Penelitian ini menggunakan desain penelitian kualitatif, menganalisis data sekunder dari artikel akademis, laporan kebijakan, dan analisis ekonomi. Temuan menunjukkan bahwa inflasi hijau, meskipun mendorong kelestarian lingkungan, juga menghadirkan tantangan seperti peningkatan biaya produksi, tekanan inflasi, dan kesenjangan sosial. Hasil-hasil ini memerlukan kebijakan publik yang komprehensif untuk memitigasi dampak buruk terhadap perekonomian dan memastikan transisi ramah lingkungan yang adil. Studi ini menggarisbawahi perlunya kerangka kebijakan yang menyeimbangkan tujuan lingkungan hidup dengan stabilitas ekonomi dan keadilan sosial.

A. INTRODUCTION

Greenflation, the inflationary pressure resulting from the world adapting and implementing greener technologies and economies, is becoming increasingly relevant as countries and governments worldwide adopt stringent environmental policies. It is widely acknowledged that human activities, particularly the release of greenhouse gases into the atmosphere, significantly impact the climate and contribute to global warming (IPCC, 2021).

The described phenomenon, which encourages a transition toward renewable energy sources, simultaneously places substantial financial demands, particularly in the realms of infrastructure investments and technological advancements. As societies navigate this transformative shift, the need for robust funding and strategic allocation of resources becomes evident (Guild, 2023). Massive infrastructure investment requirements and technological progress emphasize the necessity for strategic policy signals. Such policies are crucial in facilitating the shift to a net-zero

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economy, impacting every aspect of the economy, including key macroeconomic indicators such as GDP and inflation (Keller & O'Neal, 2023).

In some regions, such as the European Union, the adoption of the European Union Emission Trading System (EU ETS), a “cap and trade” scheme that limits emissions within the EU, highlights one approach to addressing these challenges. Alternatively, shifting production toward low-carbon technologies, which emit fewer greenhouse gases, involves substantial investments and the use of costlier materials. These changes will increase short-term production costs and contribute to upward price pressures. Additionally, the ecological transition necessitates implementing measures such as carbon taxes, emission allowance markets, and regulatory frameworks to accurately reflect the true cost of fossil fuels (Baudchon, 2023).

The bloc's rising energy prices may persist due to climate policies. While higher carbon prices are beneficial for reducing emissions, challenges may arise if affordable and eco-friendly energy sources cannot rapidly meet increasing demand (Schnabel, 2022). The persistent rise in energy prices due to climate policies can have broader implications for global trade and economic competitiveness. Climate change policies may also cause energy prices to keep increasing; this could, therefore, affect global trade and economic competitiveness at large. In line with this, when stringent environmental regulations are imposed on regions such as the European Union (EU), it is likely that production costs will increase resulting in great shifts in global trade patterns (Societe Generale, 2023).

In this light, climatic measures must be harmonized globally to prevent adverse competitive positions and stave off trade asymmetries (Societe Generale, 2023). Furthermore, an uncontrolled movement towards a greener economy may give rise to market distortions due to disparate national policies encouraging carbon leakage which happens when industries relocate from countries that enforce strict policies on their emissions to those with lenient emissions standards (Nordhaus, 2007). To devise solutions to these problems requires not only strong local mandates but also cross-border agreements that generate aligned incentives for clean energy development (Stern, 2006). Therefore, as greenflation becomes a more pressing issue, policymakers must consider both the immediate economic impacts and the long-term benefits of fostering a resilient, low-carbon economy (Weitzman, 2009; Rogelj et al., 2018).

B. RESEARCH METHOD

While the concept of greenflation is gaining attention, there is limited empirical research on its direct impacts on public policy and economic stability. This study fills this gap by providing a comprehensive analysis of greenflation's implications, supported by existing literature and empirical data. This study aims to explore the impact of greenflation on public policy and economic stability. The primary area of focus in this study is the impacts caused by the greenflation, both in public policy and economic aspects. Objectives include analyzing the causes of greenflation, assessing its economic and social consequences and proposing policy recommendations to mitigate its adverse effects. In order to understand the phenomenon in advance, this study employs a qualitative method with a systematic literature review and secondary data analysis.

In light of these challenges that arise, this article will provide recommendations such as potential solutions and strategies to mitigate the adverse effects caused by greenflation. By delivering these impacts of greenflation through qualitative inquiry,

this study hopes to bring a new valuable insight to the stakeholders, scholars, and citizen that can better navigate the evolving economic and environmental landscape.

C. RESULTS AND DISCUSSION

Exploring The Emergence

The emergence of "greenflation" represents a significant economic challenge as societies transition to renewable energy sources. This phenomenon, which refers to the inflationary pressures driven by the green transition, is primarily caused by increased capital investments needed to meet climate objectives, rising demand for critical materials (such as cobalt, graphite, lithium, nickel, and manganese), and supply constraints exacerbated by geopolitical tensions and insufficient mining investments (Schnabel, 2022; Guild, 2023).

One of the major financial requirements of this transition is the significant investment in infrastructure and technological advancements. As economies move toward greener energy solutions, stable financial frameworks and resource allocation strategies become crucial (Barbier, 2010). The increased demand for critical materials, alongside the challenges of scaling up their production due to regulatory hurdles and environmental concerns, further heightens the greenflationary pressures (Fouquet, 2016; Acemoglu et al., 2012). Policymakers must navigate these dynamics carefully to create informed policies that can stabilize economies during this transition (Geels, 2012).

Policy-driven factors, such as carbon taxes and emissions trading schemes, also play a pivotal role in greenflation. While these policies are designed to reduce carbon emissions by making fossil fuels more expensive and promoting cleaner energy sources, they can lead to temporary increases in energy prices, contributing to inflation. These measures, while effective in steering economies toward sustainability, place additional operational costs on industries, which must comply with stricter environmental regulations (Hepburn, 2017). For example, regulations against greenwashing and requirements for sustainable operations further increase business expenses, contributing to the upward pressure on prices (Guild, 2023).

In conclusion, The economic challenges that greenflation presents arise from the demands for increased capital investments in order to effect the transition to a greener economy and increased use of certain critical materials, such as lithium and nickel. Understandably, these dynamics must be managed by policymakers; it has been noted that carbon taxes and emissions trading schemes can sometimes increase energy prices for a while and even lead to inflation, although they help in reducing emissions. Moreover, complying with regulatory requirements on sustainability adds to operational costs for firms which means policy, investment and innovation should be harmonized to address the issue of doing business sustainably while still achieving stability in the economy.

Unveiling The Impact

Greenflation, where costs go up due to green transition directly affects the economy by putting up prices of clean energy technologies and key materials like lithium, nickel and cobalt. This price hike is attributed to increased demand and short supply leading to higher production costs for renewable energy infrastructure such as batteries, wind turbines and solar cells. Consequently, there are inflationary pressures on economies that require huge financial outlays and prudent allocation of resources which may strain public budgets thereby complicating economic stability.

Clean energy technologies have become more popular in countries trying to make good on their climate obligations within the framework of various international agreements such as the Paris Agreement. With this change, huge quantities of strategic minerals including lithium, cobalt, nickel and copper are required for battery production, wind turbines and solar cells. However, it is difficult to find these metals in big amounts because the demand for them has exceeded supply hence causing higher prices. For example, lithium-ion batteries which are essential for electric vehicles have experienced huge growths on their raw material inputs that heavily weigh on their costs structures. From 40-50 % in 2017 it was from 50-70 % according to IEA (International Energy Agency). The increasing appetite coupled with inadequate production has resulted into skyrocketing clean technology prices resulting into greenflation (figure 1).

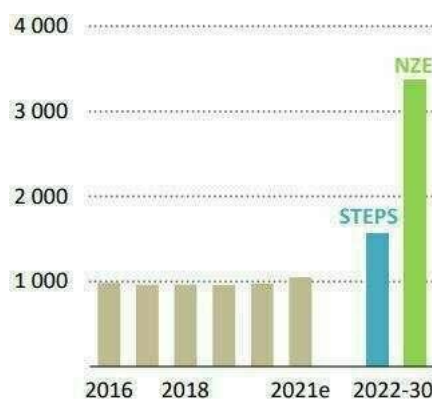


Figure 1. Demonstrating the urgent requirement for increased investment in clean technologies (with a minimum tripling by 2030 compared to 2021 levels) to align with the Paris Agreement goals under the IEA NZE scenario.

Source: World Energy Outlook, 2021, (Oct. 2021) IEA.

In production of electricity, it is the demand for indispensable metals that is mainly driven by wind then comes metal-intensive offshore capacities and solar PV. Figure 2 reveals that generation accounts for only a fraction of the overall mineral requirement in clean energy technologies. Majority of this demand however continues to be propelled through battery storage to offset intermittency posed by renewables, enable electric vehicles and extend electricity networks to decentralized generation points.

The realm of greenflation in the public policy field poses numerous and complex challenges for lawmakers. Consequently, carbon taxes and emission trading schemes, which are aimed at lowering carbon footprints, inadvertently result in short-run energy price rises that aggravate inflation further. These swell the cost of fossil fuels thereby favoring the switch to cleaner types of energy but causing momentary surges in prices. Furthermore, other policies meant to curb greenwashing as well as enhance sustainability like regulations put on firms end up increasing their prices hence contributing to inflation pressures. There is a difficult choice for policymakers between their overambitious environment targets and economic realities. Temporary rise in energy prices due to carbon taxes and emission trading schemes that mop out carbon footprints can also intensify inflation rates. Additionally, other guidelines that hinder false advertising about environmental precautions and encourage sustainable business approaches create more operating costs leading to upward pressure on inflation.

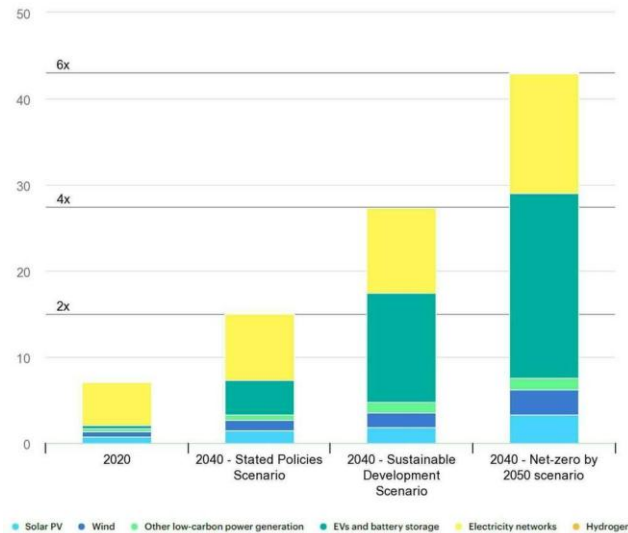


Figure 2. The demand for minerals in clean energy technologies (in Mt)

Source: World Energy Outlook, 2021, (Oct 2021) IEA.

A real-life example shows the dilemma that governments face with dealing with greenflation. Greenflation, driven by the costs of transitioning to sustainable practices and stricter environmental regulations, impacts the economy and public policy significantly. The Netherlands' nitrogen emission reduction policies, for instance, illustrate these impacts well. The Dutch government has implemented regulations to cut nitrogen emissions, particularly in agriculture, which require farmers to adopt expensive new technologies and practices. This has led to higher production costs and, consequently, increased prices for agricultural products, contributing to food inflation. These policies, while essential for environmental protection, also necessitate substantial public and private investments and careful resource allocation to mitigate the economic burden and ensure successful implementation.

When we take a plunge into the world of greenflation, we can see how it greatly affects both the economy and policy. The shift to clean energy technologies has created serious inflationary pressures due to soaring prices for key materials such as lithium, nickel, cobalt that have led to huge financial investments and careful resource allocation demanding public budgets' capabilities. Also policies geared towards cutting carbon emissions like carbon taxes, emission trading schemes are important for environmental reasons but may contribute temporarily higher power prices which could worsen the situation as seen in nitrogen emission reduction policies in Netherlands that led to increased production costs and more expensive food.

D. CONCLUSION

Greenflation, which is an increase in the costs of goods and services due to environmental policies and green transitions, creates a significant challenge involving increased production costs, inflationary pressures, social inequality among others. These issues can be addressed through striking a fine balance between meeting environmental objectives and ensuring economic stability as well as social equality. The comprehensive public policies are crucial in mitigating negative economic consequences and making sure that this transition towards a greener economy is efficient and fair.

To mitigate the negative impacts of greenflation, policymakers should put in place various measures. These strategies include giving subsidies or tax breaks to encourage the use of eco-friendly technologies thereby reducing production costs among others; establishing safety nets for vulnerable populations who may be affected by inflation; investing in education as well as training programs aimed at equipping workers with skills required for green jobs. Moreover, fostering international cooperation will help spread out the burden of greening economies while enhancing global economic stability. In this way, policy makers can avoid making the shift to sustainable economics more unequal or economically unstable than before.

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