

Policy Designs of a Just Transition in Austria - Testing potential outcomes with SFC Modeling

by Magdalena Maad & Julian Maukner

In current times of polycrisis the need for a transition towards a post carbon economy and more equitable society is evident and largely undisputed within current research agendas. A large body of research has been growing on the design of this transformation to achieve our common goal in a just manner. The claim for a just transition goes back to the 1960ies and originally stems from the labor unions in the US, (Stavis & Felli, 2020). At that time, just transition was understood as a way to remunerate workers in polluting industries for their service to society, while upholding their dignity (Abraham, 2017). A collaboration between workers' representatives, environmentalists as well as companies constructed reemployment plans focusing on job security, reinvestment, and development of afflicted communities.

Thereafter a debate sparked which was transcending national borders and the importance of a just transition occupied enough space to be incorporated into the Paris Climate Agreement in 2015 (Stavis & Felli, 2016). Nonetheless, circumspection is warranted since it may be construed predominantly as a symbolic act rather than as a practical undertaking.

As the body of research on just transition has developed, researchers discerned that they should attenuate/alleviate the prestige of jobs central to the concept to prevent the "job vs climate" frame (McCauley & Heffron, 2018). Even though jobs are of undoubted importance in a just transition and interrelated state interventions are clearly needed, decarbonizing policies go beyond the labor market. Thus, the field of knowledge started to utilize climate, energy and environmental justice research to foster the understanding and consequently embellish an equitable and fair transitional process away from fossil fuels and towards a post carbon economy and society.

The comprehensive definition of a just transition will constitute our point of departure for our proposed research paper, where we aim to interlink potential policy implications with different outcome scenarios by employing SFC modeling.

Following a review on the literature we will likewise give an overview on different methodological approaches used in the past to model questions regarding the effect of ecological economic policies on the economy in a broader sense and the labor market in concrete terms. What these models have in common is that they reject the mainstream notion of macroeconomic models having to be micro-founded and instead start with aggregate national accounts data and then disaggregate them to describe and model macroeconomic processes (Storm, 2021). We will cover research based on macroeconometric VAR modeling, as for example applied by Onaran & Oyvat (2023) but mainly focus on (ecological) stock-flow consistent models (E-SFC).

An introduction into this promising type of macroeconomic models is provided by Nikiforos and Zezza (2017). They identify the four core principles of SFC models. Every monetary flow has to come from somewhere and go somewhere (flow consistency), the assets of one agent have to be the liabilities of another sector (stock consistency), every flow has to imply a change in one or more stocks (stock-flow consistency) and every financial transaction necessitates a quadruple accounting entry. SFC models are fundamentally post-Keynesian and demand-driven. They integrate the real and the financial economy in one model and can be useful to analyze the effect of different policies and macroeconomic scenarios. SFC models exist both on a global level as well as for specific regions and countries. A model for Austria is currently being constructed by Schmelzer and Miess (2018).

Recently, SFC models have also been increasingly used in the field of ecological economics to model the interaction of the economy and the environment. Dafermos and Nikolaidi (2022) use their DEFINE model, which integrates monetary flows and stocks with their physical counterparts, to simulate the effect of different climate policies. While the DEFINE model works on a global scale, George and Dafermos (2023) provide a modeling approach specifically for the simulation of climate policy effects in the United Kingdom. In the course of our research we want to put the emphasis on the following research questions:

- What effects do different possible transition scenarios have on employment in various economic sectors?
- What geographical implications does this have and what's the role of the state in this transformation process to guarantee a just transition?

To answer our research question, our methodology will be based on national accounts data provided by Eurostat (2024), similar to Schmelzer and Miess (2018). Our goal is then to construct a SFC model that distinguishes between “green” and “non-green” sectors and explicitly tries to model what role the care and educational sector can play in offsetting potential job losses in “non-green” sectors. Using this SFC model, we will simulate different climate policy scenarios, observing the trajectory of the different sectors especially with respect to employment. Subsequently, we aim to identify regions in Austria that are particularly affected due to the structural importance of sectors with high job losses following our simulations that would require particular attention by policymakers to guarantee a just transition.

References:

- Abraham, J. (2017). Just Transitions for the Miners: Labor Environmentalism in the Ruhr and Appalachian Coalfields. *New Political Science*, 39(2), 218–240.
<https://doi.org/10.1080/07393148.2017.1301313>
- Dafermos, Y., & Nikolaidi, M. (2022). Assessing climate policies: An ecological stock–flow consistent perspective. *European Journal of Economics and Economic Policies*, 19(3), 338–356. <https://doi.org/10.4337/ejeep.2022.0095>
- Eurostat. (2024). *European system of accounts (esa) 2010* [dataset].
- George, A., & Dafermos, Y. (2023). *Green fiscal policy in an empirical UK E-SFC model*. FMM Conference.
- McCauley, D., & Heffron, R. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy*, 119, 1–7.
<https://doi.org/10.1016/j.enpol.2018.04.014>
- Nikiforos, M., & Zezza, G. (2017). Stock-flow Consistent Macroeconomic Models: A Survey. *Levy Economics Institute Working Paper Collection*, 891.
- Onaran, O., & Oyvat, C. (2023). *The Effects of Public Spending in the Green and the Care Economy: The Case of South Korea*. <https://doi.org/10.2139/ssrn.4528510>
- Schmelzer, S., & Miess, M. (2018). *Update: Extension of the Empirical Stock-Flow Consistent (SFC) Model for Austria*.
<https://irihs.ihs.ac.at/id/eprint/6455/1/ihs-report-2018-schmelzer-miess-update-extension-sfc-model-austria.pdf>
- Stavis, D., & Felli, R. (2016). Green Transitions, Just Transitions? *Kurswechsel*, 3, 35–45.
- Stavis, D., & Felli, R. (2020). Planetary just transition? How inclusive and how just? *Earth System Governance*, 6, 100065. <https://doi.org/10.1016/j.esg.2020.100065>
- Storm, S. (2021). Cordon of Conformity: Why DSGE models Are Not the Future of Macroeconomics. *Institute for New Economic Thinking Working Paper Series*, 148, 1–24. <https://doi.org/10.36687/inetwp148>