TRACK 3: Policy Mixes and New Instruments for Transforming Innovation

Session Proposers:

Karoline Rogge
K.Rogge@sussex.ac.uk, University of Sussex

Florian Kern
F.Kern@sussex.ac.uk, University of Sussex

Eva Buchinger
eva.buchinger@ait.ac.at, AIT, Center for Innovation Systems & Policy

Mart Laatsit
mla.dbp@cbs.dk, Copenhagen Business School

Petra Wagner
petra.wagner@ait.ac.at, AIT, Center for Innovation Systems & Policy

Description:

Within innovation studies, there has recently been an increasing interest in policy mixes with several contributions published in Research Policy (Flanagan et al. 2011; Magro and Wilson 2013; Quitzow 2015; Kivimaa and Kern 2016) and other innovation studies journals (Borrás and Edquist 2013; Reichardt and Rogge 2016; Reichardt et al. 2016; Uyarra et al. 2016). Policy mixes can be understood as "complex arrangements of multiple goals and means which, in many cases, have developed incrementally over many years" (Kern and Howlett 2009: 395). While it has long been acknowledged that a combination of technology push and demand pull instruments is required for stimulating innovation (e.g. Freeman 1987, OECD 1999, EC 2003, Aho et al 2006, Aschhoff and Sofka 2009), how such instruments interact and form policy mixes has only recently become of interest to the STI community (e.g. Nauwelaers et al. 2009, Flanagan et al. 2011). There is also an emerging discussion on the need for systemic instruments to address grand societal challenges (Wieczorek and Hekkert 2012, OECD 2015a) or the need for novel STI policies to foster transformative innovation (Schot and Steinmueller 2016, Edler and Yeow 2016).

It has been increasingly pointed out that today's grand societal challenges, such as addressing health, climate change, and security, call for new approaches to design and combine policy instruments (Bason 2014, Carstenson and Bason 2012, Kimbell 2015, Tonurist, Kattel and Lember 2015). More specifically, it has been argued that policy mixes are required in order to address not only traditional market failures such as underinvestment in R&D or negative environmental externalities such as greenhouse gas emissions, but also structural and transformational system failures, such as institutional failures or failures regarding guiding the direction of a transformation process (Weber and Rohracher 2012). However, the majority of academic contributions so far focused on policy mixes as portfolios of instruments originating from various governance levels and policy fields, paying particular attention to interactions between instruments (del Rio 2014, Guerzoni and Raiteri 2016). Yet, in the context of transformations 2 (or what the OECD calls system innovation), a broader perspective on policy mixes has been proposed (Weber and Rohracher 2012; Flanagan et al 2011; Rogge and Reichardt 2016).

This has a number of implications for policy mix research in the context of transformative STI policy: First, the need for steering the direction of innovation is argued to require greater analytical attention to credible long-term policy strategies, such as the recent Paris Agreement on limiting global warming, and their role in redirecting corporate innovation strategies (Schmidt et al. 2012; Rogge et al 2011). Second, studies have argued for greater attention to the policy processes through which such policy strategies, targets and instruments come into being, both because of their explanatory power regarding the design of policy mixes and due to their direct influence on innovation processes (Boekholt 2010; Chung 2013; Williamson 2015). Third, attention has also shifted to the co-evolution of policy making and technological change and thus to dynamic changes in policy mixes (Hoppmann et al., 2014; Reichardt et al. 2016). Forth, there is also a critical appreciation that real-world policy mixes may never be completely consistent and coherent but that policy makers should strive for an increased coordination across policy levels and policy fields to improve the effectiveness of these mixes for stimulating innovation (Flanagan et al. 2011; Kern et al. 2017). Fifth, it has also been argued that in the context of grand societal challenges innovation policy mixes aiming at structural change within a sector such as energy, transport, and health may need to pursue simultaneously the 'creation' of new innovations as well as the 'destruction' of incumbent systems (Kivimaa and Kern 2016). Sixth, because of the inherently 'experimental' nature of STI policy new practices and models focusing on inclusive policy making and co-creation are seen as a promising new avenue to achieve robust innovation policy results for growth, jobs, and welfare (OECD 2015b; OECD 2016).

This research session aims to bring together papers which address such a broader policy mix perspective for transformative STI (including novel STI instruments) and as such specifically calls for contributions addressing the following topics:

- Conceptual improvements of policy mix thinking: How can we better conceptualise policy mixes for system innovation and go beyond an understanding which purely focusses on desired combinations of instruments?
- Policy mix characteristics: Which influence do broader characteristics of policy mixes, such as their consistency, comprehensiveness, credibility or coherence have on STI?
- Directionality of policy mixes: What is the role of long-term policy targets and their credibility for innovation processes? How can governments improve the perception of the credibility of policy signals by innovators? How do companies make sense of conflicting policy signals and how does this influence their innovation strategies?
- Co-evolutionary dynamics of policy mixes: How do policy mixes emerge over time, how do they impact on STI, and how do these impacts influence the further evolution of policy mixes?
- Next generation innovation policy instruments: Which new instruments could be utilized to consider the changing relationship between citizens, science, industry, and policy? What is the potential of demand-side measures such as innovation procurement, regulation and standards and how can demand-side and supply-side policies be integrated in an effective policy mix? How can co-creative and inclusive

mechanisms such as innovation policy labs, sandboxes and incubators facilitate the match between supply and demand for innovative ideas?

- Assessment of instrument interactions: How to analyze the effects of simultaneously existing policy instruments and the feed-back loops between them in innovation ecosystems? How do next generation innovation policy instruments interact with other measures within the policy mix?
- Policy processes and policy mixes: What can STI scholars interested in policy mixes learn from the policy studies literature? How can we analyse the politics of policy mixes aimed at addressing transformative change? Which implications can be drawn for managing resistance to change?
- Institutional implications of policy mixes: Which implications result from the complexities arising from policy mixes for innovation for institutional designs, administrative capacities, and policy learning across multiple jurisdictions?
- Policy mixes for creative destruction: Which role do policies aimed at phasing out undesired technologies or practises play for innovation in competing alternatives?
- Methodological novelty in analysing policy mixes: Which research designs, novel qualitative and quantitative methods, new data sources and operationalisations of policy mixes are best suited to studying policy mixes and their role in transformative innovation processes? Which are useful approaches for boundary setting and establishing causal relationships between policy mixes and innovation?

We invite conceptual as well as empirical papers which address any of the questions raised above.

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