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The Janus Face of Inflation Targeting: How Governing Market Expectations of the Future Imprisons Monetary Policy in a Normalized Present

Abstract: Modern 'inflation targeting' is widely praised as having achieved a level of technical sophistication and efficacy unprecedented by previous modes of monetary policy. Building on the Rational Expectation Hypothesis, it is premised on the idea that it is possible to influence *future* outcomes (inflation) by shaping and conducting economic expectations in the *present*. Monetary authorities thus rely on the structure of market expectations as the *medium* that transmits their intended policy into the future, allowing them to focus on fine-tuning the 'communicability' (credibility and transparency) of their *signals*. However, even among practitioners the precise nature and functioning of this inter-temporal link remains contested, despite its seeming effectiveness and the lack of a practical alternative. In this chapter, I want to deploy some concepts and analytics from a recent literature in sociology and anthropology on the coordination of social futures to query the link between present and future on which inflation targeting is premised. My objective is to uncover the social and organizational preconditions of this form of economic temporality, in order to better understand what limitations they place on central banks' ability to 'govern the future'. To this end, I look at the so-called Volcker experiment in which the fundamental procedures for governing the future were developed – although their significance only became clear later. The gist of my argument is that the consensus view of 'modern' monetary policy insufficiently distinguishes between the *present future* (the future as it is imagined and projected from the present) and the *future present* (as it materializes at a later point in time). Inflation targeting rests on procedures which set up what, sociologically speaking, amounts to a tightly integrated and formalized 'interaction order' between central bank and financial markets. This interaction order enables a fine-tuning of expectational reactions by markets to policy signals – but at the price of decoupling monetary policy from the economic structures required for securing a congruence between present future and future present.

Keywords: Central banks, monetary policy, expectations, futurity, economic coordination, indicators, inflation targeting

1. Introduction: Monetary Policy and the Problems of 'Knowing the Future'

Over the decade starting in the mid-1980s, central banking underwent a "Quiet Revolution" and "went modern" (Blinder 2004). By the mid-1990s, ongoing changes cohered enough to begin giving them a more formal codification and a name: *inflation targeting* had been born (Bernanke and Mishkin 1997; Bernanke and Woodford 2006; Cobham 2010). Where the 'old' view of monetary policy (implementation) attempted to shift the hydraulics of macroeconomic aggregates (commonly, by seeking to control various *monetary* aggregates), the 'new' view's "key proposition … is that the appropriate operational target of monetary policy implementation is the short-term interest rate, and that this is the case independently of the characteristics of financial markets and independently of the monetary policy strategy" (Bindseil 2004, 5). Inspired by the "Rational Expectations Revolution" (Muth 1961; Lucas 1972; Sargent and Wallace 1976; Phelbs and Taylor 1977; see also Miller 1994), central banks worldwide have stopped attempting to push policy signals heavy-handedly through the cumbrous hydraulic machinery of monetary quantities and macroeconomic variables of yore. Instead, they have shifted towards attempting to *directly* 'conduct the conduct' (Foucault et al. 1991, 48) of market actors "whose activities propel the transmission mechanism of monetary policy" (Braun 2015, 369).

Since then, it has become conventional wisdom that this new channel of policy transmission by *directly* influencing the structures of expectations of economic actors greatly improves monetary policy's efficacy in achieving its primary objective of controlling inflation. By disentangling the technical procedures of monetary policy *implementation* from the problem of the transmission or propagation of the signals thus generated, central banks are capable of signaling their policy stance far more clearly than in the 'old' system, when the causalities on which implementation relied were tightly entwined with macroeconomic aggregates and dynamics. Thanks to this improvement in the *communicability* (Stinchcombe 2001, chap. 2) of its intended purposes, monetary policy can now shape inflation expectations (more or less) *directly* through alterations in its key policy instrument, the short-term interest rate, in such a way that they materialize into the desired inflation rate (of course, with a lag).

Modern monetary policy thus is *performative* in the sense developed by a growing literature in the field of economic sociology and the so-called 'Social studies of finance' (Callon 2007; MacKenzie, Muniesa, and Siu 2007). As Mann (2018, 18) has put it, "if [monetary policy] is believable enough to shape (rational) expectations, it will work itself out like a self-fulfilling prophecy" –at least, that is, "to the extent that economic actors adjust their practices to fit the narrative" (Beckert 2016, 116) or state of the (economic) world that the policy intended. This also means that monetary policy has become inherently *forward-looking*, as it seeks to govern (through) the future, or more accurately: govern the future *in* the present *through expectations about* the future. To ensure that policy signals emitted in the present indeed produce their desired effects in the future, central banks have heavily invested in their forecasting apparatus. This has allowed them to focus their operating procedures on keeping track of the (shifting) *expectations about the future* held by the actors "whose activities propel the transmission mechanism of monetary policy" (Braun 2015, 369). Investments in central banks' economic modeling capacities have helped improve the sophistication of their forecasts, which have been integrated more tightly with the decision-making process (see, e.g. Smart 2006). Better forecasting then allows for more fine-tuned policy signals, as well as increasing the transparency of those signals to the observers whose behavior and calculations it is meant to influence, especially when the reasons for the policy stance are openly communicated (Guthrie and Wright 2000; Geraats 2002; Issing 2005; Demertzis and Hughes Hallett 2007).

By making such "investments in forms" (Thévenot 1984), which help in mapping (market) expectations, and tracking the effects of their policy interventions, central banks thus have been able to construct highly standardized and formalized shared "frames," creating "an expectations environment that can be managed" (Morgan 2013, 744 – cited in Braun 2015). Within such a joint(ly generated) *frame,* the signals sent through central banks' manipulation of the *short-term interest rate* are translated into *long-term interest rate(s) and asset prices*, providing monetary policy with control over shaping the trajectory of inflation over time (cf. the account given by Braun 2015).

Practitioners take immense pride in this technical arrangement, a view often shared not only by academic economists but also adopted by many

observers in the social sciences who have studied this 'communicative turn' in monetary policy as an exemplar of a more general trend towards "future-oriented" or anticipatory modes of social coordination and governance (Holmes 2014; Braun 2015; on the sociology of the future, see Tavory and Eliasoph 2013; Beckert 2016). There is, however, astonishingly little sustained reflection within expert circles (both practitioners and their academic observers and interlocutors) about the forms of temporality that underpin this technical arrangement, or about the tricky epistemological and theoretical problems involved in, first, *knowing the future* and, second, of using it as an instrument for shaping expectations. Beckert has put the problem in a nutshell when he points out that (present) expectations are necessarily (only) "*pretended* representations of a future state of affairs" (Beckert 2013, 226). Whether these representations turn out to be true, and thus whether the expectations based on them turn out to have been "fictional" or "rational", will only be revealed in the future once it arrives.

The importance that contemporary accounts of monetary policy attach to the somewhat elusive concept of its *credibility* illustrates this problem. Credibility necessarily lies in the eye of the beholder: for monetary policy signals to be *credible* to (present) market actors, they need to align with these actors' *present* "pretended representations of a future state of affairs" (long) *before* it can be decided whether they were, in fact, true. Whether credibility in terms of a two-way alignment between intended signals and expectations *in the present* actually extends to a three-way alignment *with the future* is a question that has received (too) little systematic attention. In aligning its signals to the structure of those beliefs about a "fictive" (Beckert 2016) imagined future, can monetary policy also be assumed to be influencing *that* future which eventually becomes real, and in terms of which the initial expectations will have been proven "rational"[1]? Indeed, it seems that "there is no consensus on why the framework is successful,

1 A problem solved by modern microfoundations economics *by assumption*: namely, the assumption of an a-priori congruence of structures of expectations with economic structures with only the probabilities of different possible states of the world being 'unknown' (Beckert and Bronk 2018, 8).

why and how expectations become anchored by virtue of these targeting protocols" (Blinder 2004, 74 ff.; Holmes 2009, 403).

A number of well-placed and knowledgeable observers have raised serious issues with assuming a smooth transition of policy intentions through expectations that are isomorphic with (and based on perfect knowledge of) the true structure of the economy, to the economy's future state(s). For instance, Orphanides has shown in a series of publications (Orphanides 2001, 2002, 2003; Orphanides and Williams 2007) that considerable gaps (may) exist between the (imperfect) knowledge actors can form in real-time about the economy and its structures as revealed in ex-post data, leading to considerable misfires of (intended) policy signals. Alan Blinder (2004, 67 ff.) has pointed out how, in attempting to align their policy (implementation) to market expectations, central banks may actually end up simply "following the market" rather than shaping its expectations to the futures they hope to enact. More troubling still, serious doubts exist about the mechanisms by which policy signals (by varying the short-term interest rate) become translated over longer terms into real economic prices, thus eventually shaping inflation. The standard linkage or transmission channel is, of course, provided by the so-called expectations theory of the term structure, roughly suggesting that longer-term interest rates should be the average of short-term rates expected over the longer-term. Not only does this relationship fail to hold consistently, but more worryingly still, "the implied interest rate forecasts (expectations) that can be deduced from the yield curve bear little resemblance to what future interest rates actually turn out to be" (Blinder 2004, 77). Despite the fact that "the abject empirical failure of the expectations theory of the term structure of interest rates is a well-established fact" (ibid.), central banks continue to use the yield curve to "read the future" (Zaloom 2009; Christophers 2017) from the market expectations it (supposedly) captures– as well as assuming market actors to translate their (short-term) policy signals into longer-term price signals along its lines.

In this chapter, I want to draw on insights that have been developed in fields *outside* economics for understanding how future-oriented, forward-looking and expectations-based modes of coordination function – in particular a recent and growing literature in the fields of sociology (and anthropology) (Mische 2009; Esposito 2011; Mallard and Lakoff 2011;

Tavory and Eliasoph 2013; Beckert 2016). The goal is not, as has become something of a fashion among social scientists, to provide an external critique of economic theories and methods as "undersocialized" (Barber 1995; Beckert 2003) – a critique that comes lightly to disciplines whose bread and butter *is* "the social." Rather, my objective is to investigate in what ways the insights gained in these literatures can help us understand better *how and why* it is possible for central banks to "govern the future" by managing expectations. This will then allow us to develop a finer understanding of the conditions on which this ability depends, and what limitations these conditions imply.

To this end, I will be looking at a historical episode that has been crucial to the development of some of the key technical procedures and infrastructure on which inflation targeting relies, as well as having been formative to many of the theoretical debates and practical reflections that still shape our understanding of this form of monetary policy today. I will be looking at the policy experiments of the (early) Volcker years (approximately 1979 to the mid-1980s). This "Monetarist Experiment" was aimed at breaking the so-called "Great Inflation" of the 1960s and 1970s by restoring effective control over the money supply. While the experiment failed to achieve the latter, it produced a number of technical innovations which subsequently became the technical basis for modern, independent monetary policy seeking to control inflation through the manipulation of market expectations. I will historically contextualize these innovations, which today form a naturalized platform for inflation targeting, by showing how they respond to historically specific *problems* and, as a consequence, how the *solutions* on which modern monetary policy is premised still contain the traces of this origin, and are in important ways limited by this path-dependency.

2. The Temporalities of Modern Central Banking: Using the Future to Escape the Fetters of the Present

The sociologist Niklas Luhmann (1976), based on discussions with historian Reinhart Koselleck (2002), developed a fundamental distinction that provides much analytical leverage for our problem. He distinguished the *future present,* the future that will be an *actual* present at a future point

in time, from the *present future*, that is the *possible* future(s) projected in the present on the basis of various "instruments of imagination" (Beckert 2016). While this is often used simply as a terminological distinction allowing us to designate two temporally differentiated meanings of the word "future," it opens up a much deeper theoretical problem: namely, *how* do expectations about *imagined* futures link (action in) the present to the *actually realized future(s)*? As we have seen, monetary policy theory assumes such a link to exist *if* only signals shape expectations appropriately *in the present*, and are credible.

However, a closer inspection of the *origins* of this mode of monetary policy might give us some pause. The later development of full-fledged interest rate targeting as the standard for monetary policy worldwide is commonly portrayed as something of an unintended consequence of the so-called Volcker experiment (or Monetarist Experiment). The experiment initially tried, and failed, to develop procedures that would allow a firmer and more effective control over the money supply. Attempting to avoid the disruptions resulting from a too rigid and mechanical pursuit of money supply targets, experimentation led the Fed towards a strategy of interest rate targeting. Initially, by attempting to manage non-borrowed reserves (through what today is called open-market operations) to achieve a particular interest rate, the Fed sought to indirectly control the path of borrowed (at the discount window) reserves, understood as a proxy for the overall money supply. In time, as market reactions to these interest rate signals remained stable despite the volatility of the money supply, this ability to shape market reactions through those signals became the linchpin of both practical monetary policy implementation and theoretical reflexion about it. Today, *forward-looking monetary policy that operates by manipulating expectations of future inflation in the present* has become naturalized as a trans-historical technical benchmark for good central banking (see Bindseil 2004 for an explicit argument to this effect).

In this paper, my goal is not to challenge the existing, well-founded scholarship and historical accounts of the Volcker experiment. Rather, I want to question the eagerness with which the set of procedures that emerged from it has since been naturalized as the irreducible technical basis for monetary policy. Instead of taking for granted that central banks actually exercise effective control over the future by shaping market expectations,

I want to apply some sociological concepts that allow us to better describe the temporal and social relations involved in this form of governing. My goal is twofold. First, I want to show how its technical procedures remain bound to an original historical context of tools and institutions, problems and institutions. Second and based on this, I will suggest that the technical logic of 'modern' central banking is not as transcendental and timeless as it likes to pretend – and that looking at the traces left by its origins may well help explain some of the difficulties it has been experiencing over the last decade.

The *technical* problems that many central banks faced in controlling inflation in the 1960s and 1970s are commonly seen to be tightly related to the question of central bank independence. At the time, the Fed was in many ways entangled with diverse societal interests – not simply by being subject to scrutiny by political authorities, but more importantly because of the very mechanisms though which it pursued and implemented monetary policy. Krippner (2011) has provided a detailed account of how the Fed, over the course of the 1980s, struggled to extricate its fight against inflation and the operative procedures on which it relied from social struggles about the distribution of income and credit, and the inevitable contestations of each of its policy measures this entailed. Her account favours a political-economy perspective, emphasizing how loosening the control over international capital flows and inter-bank lending and endogenous credit-creation allowed the Fed to avoid making hard choices. Seen from this angle, the shift to forward-looking monetary policy quite logically appears as a de-politicizing strategy, intended to deflect responsibility for (macroeconomic) outcomes by "letting the market show through" in the determination of the interest rate, rather than depicting the longer-term interest rate as an instrument fully under control of the central bank (Krippner 2011, 120).

Where sociologists and political-economists are wont to emphasizing the social and political struggles that shaped the transformation of central banking during this time, economists and central bankers are more prone to looking at it as a process of technical evolution and improvement. Beyond the question of how political dependence reduced the Fed's overall *effectiveness*, they are also interested in how these problems manifested themselves at the level of *technical efficiency*. From this perspective, US

monetary policy in the 1960s and 1970s was clearly deficient: it consistently failed to convey a transparent and credible policy stance, with each failure further undercutting its ability to achieve its policy objectives. As *hydraulic* monetary policy incurred considerable lags as it waited for its policy signals to work their way through the system of macroeconomic variables, both market observers and the Fed itself struggled to obtain timely feedback information about the effects and effectiveness of its policies (Orphanides 2002). In this context, ideas such as Friedman's "adaptive expectations," arguing that the ambiguity and lags in monetary policy encouraged a cumulative build-up of inflationary expectations (1968), became increasingly influential: as he pointed out, economic agents *adapted* their expectations *upwards* each time monetary policy failed to clearly and unambiguously achieve its declared inflation target – which it rarely did, given the difficulties just discussed.

Over almost two decades, the Fed struggled to find solutions to these problems, seeking in particular new ways of technically improving the credibility and reducing the ambiguity of its policy signals due to lags and interaction effects. However, improving the clarity of policy signals *within* the hydraulic monetary policy system proved challenging: it would mean avoiding, in particular, overly powerful policy interventions that would trigger sharper reactions than intended, which then required further (confounding) sterilizing actions on its part and further muddied the waters. The devious results are known under the twin terms of *interest rate smoothing* and a resultant *base drift*. Fear of political repercussions as well as technical considerations prevented the Fed from moving the interest rate sufficiently strongly and anti-cyclically to control inflation, with the resultant lags generally reinforcing subsequent cyclical countermovements and allowing the monetary base (thought to be directly correlated with inflation) to grow in an uncontrolled fashion (Axilrod and Lindsey 1981; Meltzer 1991, 39; 43).

Going through the *economics* literature on this period, one encounters a shared narrative that suggests political interference and entanglements prevented the Fed (and other central banks) from developing and adopting technically superior instruments and solutions for achieving its primary objective, price stability. In contrast to such "Whiggish" storylines built around histories of technical progress being held back (temporarily) by

political and social entanglements, sociological and political-economy perspectives refuse to conceive of the field(s) of possible technical solutions as given (more or less) 'a priori.' Instead, they seek to "open the black boxes" (MacKenzie 2005) of technical arrangements to analyse how the ways in which they are assembled reflect competing social interests and the struggles through which they find (political, and eventually technical) expression. In particular the field of Science and Technology Studies (STS) has argued very forcefully (e.g. Pickering 1995) that technical problems and solutions are never given *a priori* – as much as it will look that way in retrospect, once a new "paradigm" has emerged from a scientific or technical revolution (Kuhn 1996). The technical solutions that prevail (and in retrospect always appear inevitable and rational) are thus contingent upon wider fields and contexts of social interests (Habermas 1969; Bloor 1991; Barnes 2015), path-dependent on a "seamless web" of available technical elements from which they are assembled (Hughes 1986) as well as on the scientific knowledge(s) providing the "instruction sheets" (Blyth 2003) for developing them.

As David Stark (2009; and others, e.g. Callon 1998) has shown, economic domains are indeed rarely, if ever, fully subsumable to the formal-technical accounts deployed by economists and central banks alike. These accounts and models depict fields of interdependent economic actions which are given descriptions as coherent (collective) calculative problems, which in turn makes them amenable to being governed as unambiguous *technical* problems. As Stark points out, however, in reality economic domains are marked by what he calls competing "accounts of worth," that is, (collective or shared) projects of assigning economic value (and resources) to competing social purposes or activities. The technical coherence of economic policies and regulations is thus the result of what Kallinikos (2014, 9) calls a (working) *functional simplification*, that is, "the demarcation of an operational domain within which the complexity of the world is reconstructed as a simplified set of tight cause-and-effect couplings." A functional simplification establishes robust technical 'means-ends' control relations by demarcating and insulating procedures of intervention from interference by 'external' causal sequences or influences (Kallinikos 2006, 32 ff.).

Monetary policy *prior* to the transformations it underwent in the 1980s provides a perfect illustration of the *failure* to demarcate and insulate a

technical domain in which coherent and stringent interventions can occur. The Fed, by the 1970s, had integrated various competing accounts of worth, and as a consequence heterogeneous conceptions of and operative strategies for controlling inflation, into rather ambiguous and heterogeneous policy procedures. Different theoretical conceptions of the causal mechanism(s) driving inflation co-existed uneasily within its operative paradigm. Most famously, the so-called notion of "cost-push inflation" led the Fed into various attempts to target the credit extended to particular economic sectors and considered to be driving general inflation, and into attempts to control wage dynamics. The real bills doctrine (see Glasner 1992) with its notion that productive credit could never be inflationary long persisted within the Fed, so that targeting *free reserves* (reserves not backing productive credit) was seen as a way to combat speculative pressures that could lead to asset and, through it, generalized inflation. Such partially incoherent *substantive* theories of inflation and the operative mechanisms they implied uneasily coexisted within the Fed's monetary policy. Its multifaceted conception of inflation also entailed a complex apparatus of technologies such as regulations of interest rates, relative (credit) prices and the allocation of money to different sectors of the economy (Konings 2011, 106 ff.). Through this, monetary policy became drawn into and contested over an entire spectrum of competing accounts of social worth – with a little artistic license, whether to fund schools or missiles, homeownership or poor relief. And, confronted with multiple, (partly) contradictory policy signals, market actors found it difficult to form clear-cut expectations about the Fed's policy stance and actions.

As the Fed pursued multiple (intermediate and ultimate) objectives simultaneously, implementing them through various (and frequently incompatible and interacting) channels of transmission, all conceived in terms of the interactions of a growing number of policy-variables, confusion crept in. Expert debates at the time revolved around the problems of demarcating an operational domain for monetary policy in such a way that (i) it achieved "tight cause-and-effect couplings," and would (ii) be able to send unambiguous, transparent and credible policy signals. These debates were cast in terms of the so-called *Instrument-Target Problem* (Poole 1970; Bindseil 2004, 29 ff.). While conducted in a highly technical jargon hard to decipher for posterity, the Instrument-Target Problem

essentially revolved around the endogeneity problems facing monetary policy due to the lags observed between (a growing number of) operative and target variables (organized in multiple, mutually overlapping and interacting transmission sequences), and the resulting instabilities of the functional relations between variables.

This discussion is directly analogous to a widely debated issue in organizational sociology and organization studies, namely the problem of "tight" vs. "loose coupling" of an organization to its relevant environment (Orton and Weick 1990). A *tight coupling* in this context refers to a situation in which *too many* variables from the environment appear in the instrumental sequences and procedures by which the organization seeks to "represent and intervene" (Hacking 1983) in its environment. The tighter the coupling between an organization and its environment, the more difficult it becomes (ceteris paribus) for the organization to achieve a working functional simplification. A functional simplification isolates tight cause-effect couplings *between variables in the domain in which it means to intervene*, by shutting out other *lateral* couplings that dilute the intended control relation. A tight coupling can make achieving such a simplification more difficult, by inscribing the inherent contradictions present (to varying degrees) in all domains of social practices inside the organization's operative procedures. Rational organizations attempt to organize their procedures for intervention in a way that guarantees robust and iterable *means-ends-relations* (Stinchcombe 2001; Kallinikos 2004), and secures technical rationality for these interventions. If incompatible interests, institutional logics, or practical rationalities present *within* a domain manifest themselves as contradictory logics and imperatives within the policies and its instruments of an organization, both the effectiveness and legitimacy of the organization is threatened (see e.g. Meyer and Rowan 1977), as we have seen was the case for the Fed in the 1960s and 1970s.

In contrast, if an organization's ways of representing and intervening are more "loosely coupled" to its environment, it becomes easier for it to focus on specific functional relationships (effectively). A loose coupling thus means that an organization must deliberately bracket or black-box many of the causal and functional interdependencies between relevant variables (Orton and Weick 1990, 203). This bracketing allows it, however, to focus its attention and available instruments on means-ends-relations that align

well with its (main, central) objective or mission, and can be seen as a reliable and robust technical foundation for pursuing substantive policy goals.

To central banks in the late 1970s and early 1980s, the vocabulary and theorems of (Rational) Expectations provided just such an idiom which promised a plausible "loose coupling" and functional simplification around which a more effective monetary policy could be constructed. In particular, it suggested a way of short-circuiting the complex morass of entangled instrument- and (direct, intermediate, and ultimate) target-variables and cross-cutting transmission channels, by shaping economic agents' *expectations* about inflation directly. The outcome, of course, is well-known: by "decoupling" its manipulation of the *short-term interest rate* from the movements of other (lateral) variables, the Fed gained additional degrees of freedom allowing it to move this "policy rate" as required for signaling its (longer-term) policy stance. Due to the higher transparency and credibility this permitted, its signals would be transmitted through the expectations of economic actors to the price system of the economy, giving the Fed more effective control over the evolution of the general price level.

In this way, the Fed demarcated and insulated *policy implementation* from the problem of monetary policy strategy and transmission. By improving its ability to control a *particular* (tightly coupled) cause-effect coupling, monetary policy thus has vastly increased the "communicability" (Stinchcombe) of its policy intentions: reactivity between policy signals and (presently observable) market expectations have greatly improved under the inflation targeting operational paradigm. However, these improvements in communicability were achieved by black-boxing the wider domain of causal pathways and functional relationships which link the (imagined) *present futures* monetary policy shapes to the *future present* it seeks to influence. This raises the obvious question: (how) is the undeniably high reactivity between monetary policy signals and observed expectations *in the present* transmitted to macroeconomic outcomes *in the future*?

In the next section, we therefore will have a closer look at how the Fed tried to develop novel means for ensuring the adequacy of the *present futures* it generates and manages through is functional simplification and policy implementation, to the *future presents* as they unfold in time. If we do not simply assume that (all) agents' expectations are a priori

commensurable (by virtue of partaking in the same 'true model' of the economy), what secures the commensurability of agents' expectations and their continuity through time? Can they serve as an unproblematic transmission mechanism if the techniques of implementing monetary policy are decoupled from the macroeconomic structures through which it is to be transmitted to the future? How does the Fed (try to) observe and ensure its signals elicit the intended outcomes in the 'moving target' of the *future present*?

3. What 'Futures' Does Future-Oriented Monetary Policy Govern – and How?

Against the backdrop of today's almost common-sensical operative and conceptual separation of monetary policy *implementation* and *strategy/transmission*, the notion that central banks would target inflation through (market) expectations appears like a straightforward technical implication and application of the Rational Expectations hypothesis. And yet, all insights gained by Science and Technology Studies since it emerged as a discipline in its own right in the 1970s caution against such "Whiggish" narratives. What in retrospect appears as logical and effective solution to a scientific or practical problem, on closer inspection usually involves significant experimentation and "heterogeneous engineering" (Law 2012). By "drawing things together" (Latour 1990) into novel configurations, old tools and instruments can be reconstructed and deployed as part of a new functional simplification for governing a particular social domain or field. The seemingly natural identity of a scientific idea or technological concept with its practical implementation thus is "socio-technical artefact" (Kallinikos 2014) obscuring the contingency of each such translation between theory and practice.

For the case at hand, this suggests that we need to have a closer look at the processes of *abstraction* (Stinchcombe 2001), of reconfiguring the ways of "representing and intervening" (Hacking 1983) on which central banking rests, from which inflation targeting emerged as a possibility. What we need to understand is how it became plausible to conceive of shaping and governing inflation expectations in abstraction from how monetary policy is transmitted (to the future) through concrete causal pathways (in

terms of macroeconomic and monetary aggregate variables). How did it become possible and plausible for monetary policy to focus (almost) exclusively on the communicability of its policy signals? To explain this rather remarkable outcome, we need to track how the Fed "black-boxed" how the present futures generated by shaping expectations are transformed into the eventual future presents of which targeted future inflation rates are a part.

As we have seen, before the Volcker experiment, the Fed as an organizational actor[2] faced a fundamental problem of how to improve the transparency and credibility of its policy signals, which was greatly impeded by the tight coupling of monetary policy's representations and mode of intervention *to* its target-domain. This tight coupling meant that interest rate signals were not unambiguously read by markets as a clue to the Fed's longer-term policy stance, but primarily considered as affecting short-run refinancing costs, and as responses to the business cycle. This left the Fed with two options: amplify its signals, which however also amplified the business cycle rather than tighten the Fed's control over it – or try to "smoothen" and steady the interest rate signals, which entailed a persistent "base drift" and further undercut the Fed's anti-inflation credibility with financial markets.

2 While it is uncommon in disciplines such as anthropology or history to think of organizational forms as coherent actors in their own right, it is common practice in other disciplines. In the following, I adopt the (primarily sociological) conception of organizational agency as a function of the existence of institutionalized scripts (consisting of formal knowledges, technologies, and procedures) which govern its interaction with an equally rationalized environment (Meyer and Rowan 1977; Meyer and Bromley 2013). Within rationalized social environments, the existence of such scripts thus is the basis for assigning organizations 'actorhood' (accountability, goal-directedness) in social practice (ibid.), so that individual agents (both within and outside the organizations) stand in relation of "structural equivalence" (Lorrain and White 1971) to it. My research interest lies precisely in the historical evolution of such 'scripts' of interaction between two highly rationalized organizational forms, the Federal Reserve (and, through the global diffusion of this script, eventually shared by central banks worldwide) and financial markets. Therefore, for the sake of brevity, I adopt the sociological usage of treating organizations as actors in their own right for this limited purpose.

At first, the Fed did not attempt to decouple its interest rate signals from monetary aggregates at all – but instead sought to enhance the *reactivity* between its signals and financial market reactions, by *binding* them to a system of feedback mechanisms. These feedback mechanisms would then effectively chart a longer-term *nominal anchor in terms of monetary aggregates* for expectations about inflation, communicating the Fed's intended outcomes as well as its credibility in pursuing them. The first attempt at installing such a mechanism became known as *non-borrowed reserve targeting*. By observing the divergence of past volumes of borrowed reserves from the projection a desired overall money growth path, the Fed would target the short- and medium-term growth of non-borrowed reserves through open-market operations, to restore it to the desired growth path of the money supply. Making banks bid for this pre-set volume allowed market expectations of the appropriate interest rate to 'show through' (Krippner 2011, p. 121 ff.). The discount window provided a security value and upper bound, avoiding the problems the Fed had experienced when implementing too biting constraints. In this way, both the Fed and the markets could gauge whether the volumes realized matched the Fed's desired outcomes. Observing the movements of the interest rates and the eventual volume of discount borrowing allowed both to adjust their expectations on a convergent path (Walter and Wansleben 2019, 11).

In this way, the Fed hoped to avoid the lags between the *sending of its* policy signals and the *materialization* of their effects in the inflation rate (the "ultimate target variable") that previously had created considerable noise and information deficits in its attempts to combat inflation (cf. Orphanides 2003). Thanks to these feedback loops and the (more) direct reactivity relation they generated, financial institutions' plans (or 'expectations') were not only revealed to the Fed, but it allowed the Fed to signal whether it considered these plans well-aligned to its own. The (tight) coupling of this mechanism to (indicators of) monetary aggregates worked, at least in theory, as a common benchmark or frame securing the commensurability of expectations between the Fed and the markets. In binding expectations to a structural background (i.e. the intended trajectory of monetary growth), it established a congruence and a substantive linkage between *present future* and *future present*.

This system also entailed a number of problems, however. Most fundamentally, the stability of this frame (and thus of this entire mode of conducting monetary policy, and the link between present and future) depended on the stability of the functional relationship between the Fed's interest rate signals, monetary growth rates and inflation. As markets initially failed to read Fed policy effectively (Cukierman and Meltzer 1986, 69; Feinman and Poole 1989), the Fed's attempts to signal a tougher policy stance induced precisely the types of overshoots and credit crunches the Fed had sought to avoid by this mechanism (Rosenblum and Strongin 1983; Meltzer 1991, 40). Unfortunately for the Fed, as the financial system relied more and more on *market-based liquidity*, credit expansion became increasingly erratic. Overall growth of endogenous credit-money accelerated significantly while inflation rates decreased – as the Fed's tougher stance induced a series of recessions and pushed credit from the real economy into financial circulation.[3]

At the same time as this structural background of functional relationships which the Volcker reforms had relied on as a frame for governing (through) expectations dissolved, the Fed noticed something else: the reactivity between its policy signals (sent by manipulating the short-term interest rate) and market pricing of the assets through which the Fed conducted its money market operations (basically, US treasuries) persisted and even *improved*. Pragmatically, over the course of the 1980s, the Fed reacted to this novel situation by cutting out the middleman: it simply black-boxed the initial functional relationships that involved monetary aggregates, and focused on honing the direct reactivity relation it had observed between its policy signals and what, in time, came to be labeled 'market expectations'. However, this functional simplification *also* meant that the structural background which had made expectations legible, and which had provided a durable, structural link between the *present futures* manufactured by the Fed and the *future presents* in which inflation was to be shaped, had been suppressed.

3 On the positive side, though, the credit crunches and extremely high interest rates that resulted from this served the Fed as "credibility tests," which established its credentials as being tough on inflation (Goodfriend 2007, 51).

As a substitute, the Fed proceeded to construct an alternative frame in terms of which the impact of its policy interventions on their intended target (*future* inflation) could be made legible. To forge such a link, the Fed since this time has relied on what Beckert has called "instruments of imagination," and what Mallard and Lakoff (2011, 341) more tellingly call "techniques of prospection with a constitutive purpose." Specifically, the Fed has developed increasingly sophisticated models for *forecasting* inflation (Brayton et al. 1997), and learned to use the expectations theory of the term structure for making legible the structure of market expectations (Johnson 1988; Frankel and Lown 1994). Through these instruments, "expectations in the economy are... anchored in prevailing cognitive models, which function as instruments for the construction of imagined futures" (Beckert 2016, 89). More specifically, monetary policy makes 'constitutive use' of the future by constructing *present futures* in terms of which expectations can be coordinated *in the present*. Using imagined futures as constitutive frame for coordinating (actions or expectations) in the present is doubtlessly *future-oriented* – but whether this coordination ultimately produces *future presents* commensurate with these projections is an open question.

Through these (and other) "techniques of prospection with a constitutive purpose" (Mallard and Lakoff 2011, 341), the Fed thus is able to construct a frame (Braun 2015) or 'present future' in terms of which it can coordinate expectations. The idea, supported theoretically by the Rational Expectations Hypothesis, is of course that expectations themselves constitute a bridge between present and future. This means that through expectations, the effects that policy interventions will have in a *future present* to come would become *legible in the present*. Observing the effects of its policy signals in and through these present futures (and assuming policy credibility) a central bank would then be able to fine-tune its signals until the desired effects manifest themselves.

However, there is considerable play between present future and future present built constitutively into this new mode of monetary policy. Indeed, in order to avoid problems with information lags that had crippled previous modes of monetary policy, inflation *targeting* in practice becomes *inflation forecast targeting*. As Svensson has pointed out, "inflation targeting implies inflation forecast targeting: The central bank's inflation

forecast becomes an intermediate target (Svensson 1997, 1113). Targeting *present* inflation forecasts rather than *future* inflation is expressly motivated by the desire to improve the legibility of policy effects, and thus the *communicability* of policy signals:

> "The central bank's inflation forecast is indeed an ideal intermediate target: it is by definition the current variable that is most correlated with the goal, it is more controllable than the goal, and it can be made more observable than the goal. It can also be made very transparent, and may therefore facilitate the central bank's communication with the public, and the public's understanding of monetary policy" (Svensson 1997, 1114).

While this procedure has vastly increased the communicability of monetary policy signals, it effectively means that these signals are now tailored to *second-order expectations* about the effects of those signals (ibid., 1119). This is a sharp departure from previous practice, where they were aimed at the actual manifestation of effects in terms of the trajectory of monetary aggregates as concrete, first-order economic variables. The congruence of the present futures governed by the central bank with the future present that constitutes its ultimate target is condensed to a single, derivative indicator – but whether forecast and inflation turn out the same is only revealed in retrospect (and the reasons for correspondence, or lack thereof, remain external to this metric itself). Due to this time lag, the best operative procedure available is to try and achieve convergence of inflation target and forecast. Ex post divergence can be explained (and: explained away) by forecast and control error, often due to disturbances occurring within the control lag. The competence of a central bank then depends crucially on the quality of its forecasts. Assuming it uses the best forecasts available, its accountability does not extend to the actual correspondence of inflation target and outcome, *but only to* the convergence of target and forecast (Svensson 1997, 1120)!

As the goal of the exercise is to shape market expectations, the Fed (and other central banks) rely on a second instrument to achieve a "reflexive modeling" (Beunza and Stark 2012) of market expectations in relation to its policy signals. In order to achieve a (near-)real-time feedback on whether policy signals will have the desired effect, it is necessary to make legible its impact on (present) *expectations*, which are the moving forces supposed to transmit the policy signal through the economy. For this, the

Fed relies on a device that we have already briefly touched upon above – namely, the so-called *term structure of the interest rate* (see Goodfriend 1998). By focusing on the yield curve of the asset categories through which money market operations for implementing monetary policy are conducted, central banks thus seek to make the effects of their policy signals on expectations visible *in the present* (Blinder 2004, 67; Mann 2018, 12). These observed (changes in) expectations then provide the parameters that can be fed into the forecasting models in order to project the effects of policy signals.

To see what might be problematic with this (at first sight, seemingly rather sensible) procedure, it is useful to have a closer look at the *previous* uses made of this same device for contrast. The term structure had been used as a prism for reading the market within the Fed since since the 1920s. Before its new use for the reflexive modeling of expectations was discovered, however, it was used in line with the free-reserves doctrine to detect whether idle reserves were producing speculative distortions in the structure of asset prices. This would then allow the Fed to sterilize these anomalies (by mopping up idle reserves) and restore normalcy to the structure of expectations (see Mehrling 2011, 47 ff.) – and, in doing so, remove local expectation dynamics that could interfere with the global, normal transition path from the present to the future.

The new use that has developed since the 1980s constitutes a complete reversal of this causality. The yield curve makes expectations legible by relating yields at different points in time into an overall curve, whose shape can then be "read" as a summary of market expectations relevant for monetary policy (Christophers 2017), but also investment decisions (Zaloom 2009):

> "Central banks typically estimate both nominal and real yield curves for government debt instruments, and are able to extract from the combination and comparison of these what is referred to as the 'inflation term structure' or 'implied inflation curve' - in other words, the rates of inflation expected by the market at different points in time" (Christophers 2017, 66).

This constitutive use of the term structure of expectations creates a *present future* which can be taken to indicate substantive facts about the *future present*. One can "look first to the interest rate itself as a clue to underlying conditions… allowing the interest rate to speak not only about the

contemporary financial order but also about the impact that current events may have on future economic conditions" (Zaloom 2009, 253). As the Fed always sets the short-end of the yield curve directly through its policy actions, the form of the curve can be read as an indicator of market expectations as to future policy measures (Christophers 2017, 65). It thus provides the Fed with a ready measure of the credibility and projected effects of its policy signals in a however *imagined* future constituted wholly in the present.

While this game of expectations is thus played out entirely within a *present future* constituted and disciplined by instruments of imagination, theoretically this current use entails that the term structure represents substantive facts about the *future present* – so that in shaping expectations as read through the term structure, one is also substantively (re-) shaping decisions in the *future present,* re-constituting causal pathways into the future. Christopher summarizes this shared belief when he writes that "monetary policy fashions the economy through the yield curve; the economy reacts back on monetary policy through the yield curve" (Christophers 2017, 68). However, this expectations game does not actually involve "the economy," strictly speaking. What happens is that markets and the central bank are calibrating their respective *present futures* wholly endogenously within a jointly produced frame and "interaction order" (cf. MacKenzie 2019). As expectations are coordinated around a single metric (expectations of future interest rates as summarized in the yield curve), this game can proceed largely decoupled from the specific, substantive content of the *future presents* projected. As Zaloom (2009, 253) points out, "the interest rate as a number disconnected from a specific time and place provided a powerful argument… to look first to the interest rate itself as a clue to underlying conditions. The number could be interpreted without initial reference to the specifics of time and place." And indeed, as markets have come in turn to use the yield curve for predicting central banks' presumed policy stance (Christophers 2017, 66), there has been a marked tendency for them to simply converge on central banks' published (and intended) projections of inflation, without much attention being paid to the specific reasons underlying these projections (Braun 2015, 379).

4. Conclusion: Why Standardizing the Future Increases Uncertainties

Is there reason to worry about the disconnect between the *present futures* of policy implementation, and the *future presents* that central banks seek to influence? From the perspective of most practitioners and academic economists, the answer is quite certainly a resounding 'no:' not only for them, there can be few if any doubts about the downsides of the old "tightly coupled" mode of conducting monetary policy. On top of this, the record of inflation targeting up until the 2007–2008 financial crisis seems rather impressive, although somewhat qualified by its heavy emphasis on price stability at the expense of considerable blind spots regarding financial stability (e.g. Fligstein, Stuart Brundage, and Schultz 2017). Additionally, as in fact every social action and practice is future-oriented (Tavory and Eliasoph 2013), it would appear only natural that central banks attempt to exploit this fact to direct present actions in a way to bring about desired outcomes in the future.

In contrast, the argument advanced here, while suggestive rather than conclusive, entails that we should think again, and more carefully, about the conditions under which monetary policy as it is still currently practiced[4] is actually in a position to "govern the future" (Braun 2015). As we have seen, looser forms of coupling an organization's operations to their target-domain often are a precondition for governing effectively – but they also transform what is being governed, and how. The specific arrangement of procedures and instruments on which modern inflation targeting rests not only *decouples* its implementation from the lagged structural background movements of monetary aggregates – but it *quite tightly re-couples it* to endogenously shifting market expectations within a joint and significantly "functionally simplified" frame.

With a little 'sociological imagination' (Mills 2000), the concerns raised by practitioners and observers about (i) whether policy signals are effectively translated to the *future present* (or remain contained in the *present*

4 The recent period of "unconventional monetary policy" (Bowdler and Radia 2012; Braun 2018) indeed attempts to restore the conditions for inflation targeting rather than constituting (conceptually) a departure from it.

future), as well as (ii) about the possibility that monetary policy might be forced into "following the market" as it seeks to govern through the market's expectations, reveal themselves as quite natural results of such a tightly coupled interaction order. As we have seen, inflation targeting is centered, above all, upon the strong reactivity relation between *numeric* policy signals and *numeric* inflation expectations.

In sociological terms, this interaction order thus functions analogously to how *standards* organize social interaction(s) (cf. Brunsson, Rasche, and Seidl 2012). It provides a common (numeric) benchmark around which the present futures of the central banks and market actors can be coordinated. Just like a standard, it "simplifies in two ways: by making irrelevant vast amounts of information, and by imposing on what remains the same form—a shared metric" (Espeland and Sauder 2007, 17). Additional information matters to coordination through standards only insofar as it facilitates convergence *within* the interaction order. Very much like in the case of *rankings* (a special case of a social standard), performance becomes measured exclusively in terms of the common metric: what matters is whether the measures taken in the multiple dimensions this metric summarizes achieve the desired outcomes in terms of the ranking – not whether these measures achieve any substantively rational (in terms of the dimensions) objectives[5] (Espeland and Sauder 2007). As Espeland and Sauder (2007, 17) point out, "commensuration as a mechanism of sense making is notable for how rigorously it simplifies information and for how thoroughly it decontextualizes knowledge." Successful coordination in terms of the standard or disentangled frame thus can become radically decoupled from actual, successful interventions in the wider context which the standard allegedly "measures" if and when the standard becomes the main or only criterion of success (Espeland and Sauder 2007; Tavory and Eliasoph 2013, 925). Translated to monetary policy, this suggests that improving the ability to fine-tune policy signals *within the interaction order* comes at a steep price. Increasing the credibility of policy action and thus its efficiency in influencing market expectations,

5 What matters is one's place *in relation to the others being ranked* – not whether there is any substantive improvement in performance in any of the dimensions summarized by the ranking.

reduces the *effective* control over the substantive shape and content of the *future present*. Indeed, as Stinchcombe (2001) demonstrates, a high(ly efficient) *communicability* of such signals does not entail their substantive effectiveness – which depends on the *adequacy and alignment* of the functional simplification with the wider context(s) in terms of which substantive effectiveness is defined. Proceduralization thus essentially entails that *efficiency* in terms of the procedure does not (automatically) entail *effectiveness* in terms of achieving the broader, more substantive set of (societal) objectives which the procedure was meant to realize: "as long as the procedure is followed, the result obtained belongs to a sphere that is neither that which is true or just, but the unfalsifiable" (Salais 2016, 121 ff.). Proceduralization, in this as in other cases, entails that the immediate reactivity and appropriateness to the other's (re-)action overrides the longer-term, "projective" significance of what is being done (see Tavory and Eliasoph 2013, 924).

The "intensive discursive exchanges within the epistemic community and 'the economy' " (Beckert 2016, 260; see also Holmes 2009, 392) typical of modern central banking are considered key to its newfound effectiveness not only by central bankers and academic economist, but also by many external observers from the social sciences (see Holmes 2014). However, as a number of observers and practitioners have pointed out, the pragmatic problem of converging on a number ends up consistently trumping the question of what this number "means" in terms of wider economic structures: in particular during the "Great Moderation," market actors have taken to simply adopting without question the projections of future inflation rates, even irrespective of their own private forecasts (Braun 2015, 379). Substantive questions about whether this mechanism actually covered all relevant dimensions of its 'target problem' of inflation, such as in particular the problem of asset inflation that helped push the global financial system into utter chaos in 2007–2009, could thus all the more easily be rationalized away (see, e.g. Bernanke and Gertler 2001; Raines, McLeod, and Leathers 2007), as they were 'black-boxed' from the technical and operative core of monetary policy.

Discursive interactions thus have become subordinate to the "interactive nature of the 'signaling process' between the central bank and those

economic actors whose activities propel the transmission" (Braun 2015, 369), locking central banks into a shadow play with financial markets.

The de-contextualization involved in functional abstraction and proceduralization thus loosens the coupling of monetary policy to its target-domain, providing it with additional degrees of freedom with regard to the 'accounts of worth' and social interests inscribed in the structures of this domain. At the same time, it constrains central banks' abilities for organizational learning, which requires "an abstraction system … to have a *trajectory of improvement* so that it can track changes in the world, increase its scope, and correct its errors" (Stinchcombe 2001, 10).

This line of argument suggests that the blind spots and failures to "see" problematic developments within the economic system are, at least in part, endemic to modern monetary policy. In contrast to much of recent scholarship (both among economists and observers from other disciplines), which has put the problem down to faulty models and groupthink (see Fligstein, Stuart Brundage, and Schultz 2017), it suggests that these problems were not accidents befalling an otherwise sound and technically flawless mode of conducting monetary policy. Rather, the very functional simplification and proceduralization on which inflation targeting is built might be in for a rethink.

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