Toward a holistic approach to central bank trust*

Sandra Eickmeier
Deutsche Bundesbank, CAMA & CEPR

Luba Petersen
Simon Fraser University & NBER

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Abstract

We examine public trust in the European Central Bank (ECB) and its determinants using data from the Bundesbank Household Panel survey for Germany. Employing an interdisciplinary approach that integrates insights from political science and psychology, we offer a fresh perspective on the factors influencing central bank trust that is more holistic than the conventional one. Our primary findings can be summarized as follows. Households who state that competence, which we define as the ECB's performance in maintaining stable prices and making decisions grounded in rules, science, and data, matters for their trust in the ECB, tend to express higher trust in the ECB. Conversely, those who place greater importance on values, particularly the integrity of top central bankers, honest communication and broader concern, tend to trust the ECB less. Trust in the ECB also hinges on trust in political institutions more generally and, to a lesser extent, on generalized trust (i.e. trust in others).

JEL classifications: E7, E58, E59, C93, D84, Z13, Z18

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† Eickmeier: Deutsche Bundesbank, Wilhelm-Epstein-Straße 14 60431 Frankfurt am Main, Germany sandra.eickmeier@bundesbank.de; Petersen: Department of Economics, Simon Fraser University NBER, 8888 University Drive, Burnaby, BC, V5A 1S6, Canada, lubap@sfu.ca.

Augustín Carstensen (BIS): *"The soul of money is trust".*[1]

Christine Lagarde (IMF at the time, later ECB): *"The ECB needs to be understood by the markets that transmit its policy, but it also needs to be understood by the people whom it ultimately serves. People need to know that it is their central bank, and it is making policy with their interests at heart. One of the priorities of my Presidency, if confirmed, will be to reinforce that bridge with the public."*[2]

1 Introduction

The importance of trust for maintaining stable money is widely acknowledged among economists and central bankers. Trust in stable money depends on trust in central banks. Empirical research (e.g. Christelis et al. 2020, Mellina and Schmidt 2018) demonstrates the significance of public trust in central banks for anchoring inflation expectations.[3] Moreover, public trust fosters acceptance of central bank independence, shielding central banks from political interference. Consequently, nurturing public trust in central banks is pivotal for ensuring the effectiveness of monetary policy and safeguarding economic stability.

Figure 1 depicts the trajectory of trust in the European Central Bank (ECB) since its inception, revealing initially high levels of trust, with up to over 60% of euro-area citizens expressing trust in both the ECB and the euro.[4] However, with the onset of the Global Financial Crisis, trust in the ECB began to decline, plummeting to 30% in the mid-2010s. Currently, only around half of the survey participants report that they trust the ECB. This is in contrast to trust in the euro, which remained relatively stable or even increased slightly over time. Trust in the ECB follows, instead, a similar trajectory and magnitude to that of trust in other political institutions. While our paper focuses on the ECB, we also present measures for the United States over a longer available time span. The right panel of Figure

[1] See Carstensen [2022], General Manager of the Bank for International Settlements, speech at the conference on "Data, Digitalization, the New Finance and Central Bank Digital Currencies: The Future of Banking and Money" at Goethe University in Frankfurt / M.

[2] See Lagarde [2019], Opening Statement by Christine Lagarde at hearing before the Economic and Monetary Affairs Committee of the European Parliament.

[3] Furthermore, Bursian and Faia [2018] show in a monetary model, where trust emerges as an equilibrium in a game of strategic interaction between betrayal-averse agents and the monetary authority, that a loss in trust in central banks worsens the sacrifice ratio and, in this way, also alters the effectiveness of monetary policy.

[4] We show separate data for the euro area without Germany and for Germany for better comparison with our results later, which are based on responses by survey participants from Germany. In Appendix A.1, we present individual euro-area country results.

1 illustrates a prolonged downward trend in trust in the US government since the 1960s. Trust in the Federal Reserve Chair exceeds trust in the government but dipped below its own values in the early-2000s. The graph further shows that trust in central banks is volatile during crises (as also noted by Roth et al. 2014, Ehrmann et al. 2013, Waelti 2012), limiting central banks' ability to act in times when it is most needed (Brezzi et al. 2021).

In recent decades, central banks have aimed to bolster trust in the institutions by prioritizing their core objective of price stability. This has been achieved through decisions based on rules, data, and scientific analyses as well as transparent communication on economic conditions and central banks' actions. Widely perceived as technocratic institutions, central banks are deemed more reliable than political counterparts due to their reduced dependence on value judgement and discretion of imperfect human beings. As underscored by Issing [2000], "[c]entral bankers are no super-humans". Independence ensures sufficient flexibility to complement rules with discretion when necessary, thereby maintaining stability in varying circumstances.

Weak and volatile trust in central banks, coupled with a high correlation with trust in other political institutions, presents a significant challenge to the current approach. The operational landscape of central banks has undergone significant change due to various crises (financial, climate-related, geopolitical), leading to increased complexity (Cœuré 2018). As a result, central banks are exercising greater discretion, diverging from their preferred rule-based approaches. The questions arise: why is there a disconnect between political institutions, including central banks, and the public, and how can this issue be addressed? Central banks are currently exploring two main avenues. Firstly, they are endeavoring to broaden their outreach beyond just financial market participants, as highlighted in Blinder et al. [2022] and Haldane and McMahon [2018]. Crucially, they are seeking new, more relatable ways to communicate with the general public. This entails, for example, utilizing language and formats that are more accessible, along with facilitating direct engagements between central bankers and citizens. Lagarde [2020] emphasized the importance of listening, and she expressed the ECB's care about people's broader concerns.[5] Secondly, various crises, such as the Global Financial Crisis, the climate crisis, and geopolitical conflicts, have underscored the intricate interconnections between inflation, the real economy, financial markets, and other aspects of society, often leading to highly unpredictable outcomes and affecting

[5] "[W]e aim to learn directly from civil society organisations and the people what matters most to them - be that rising rents and house prices, job uncertainty or climate change - and we will assess how we can best take these concerns into account in our actions and our communication, within the limits of our mandate."

people's broader well-being. To improve economic resilience (and not lag behind the crises), central banks (and legislators) have expanded their mandates (e.g. to include financial stability and the combating of climate change) and sets of instruments. Recent findings from a companion paper (Eickmeier and Petersen 2024) suggest that such broader (and more realistic[6]) scope is indeed appreciated by the public: self-reported trust in the ECB has strengthened among the vast majority (69%) of households in Germany due to the ECB's new climate engagement.

In this paper, we adopt a broad, interdisciplinary approach, integrating insights from political science and psychology. The literature we build on distinguishes between the perceived trustworthiness of political institutions based on two key dimensions: "competence" and "values" [Murtin et al., 2018]. Competence refers to the government's ability to provide citizens with the necessary services at expected levels, while values encompass the guiding principles informing and shaping government actions [OECD, 2017]. The literature also underscores the significance of interpersonal, generalized trust (i.e., trust in others), recognizing that the capacity of individuals to trust in general may influence their trust in political institutions. Figure 1 shows that interpersonal trust levels generally fall within the range of and exhibit similar tendencies as trust in political institutions.

Our primary contribution is to offer a novel, comprehensive examination of the significance of more holistic factors. We investigate survey participants' perceptions regarding the importance of various aspects of the ECB's competence and values for their trust in the institution. The values we consider, which, to the best of our knowledge, have not been studied in the central bank context before, include the integrity of leading central bankers, honesty in the ECB's communication (even when things are not going well or according to plan), and action based on broader concern for the well-being of the general public. Moreover, we account for consideration of the broader picture including complex relations and matters beyond economic ones, which requires a certain mindset. Additionally, we assess participants' levels of trust in others and various new aspects of the ability to trust more generally (such as trust in oneself, in life, fears, and compensation mechanisms reflecting a lack of trust). Given the high correlation depicted in Figure 1, we also examine how trust in the ECB is related to trust in political institutions more broadly. We utilize data from the Bundesbank Household Panel (BOP-HH) survey, encompassing over 4,000 households in Germany. Importantly, we have included non-standard questions regarding trust in the ECB and potential determinants

[6]In the sense that more of reality, including interactions among different societal domains that matter, is taken into account

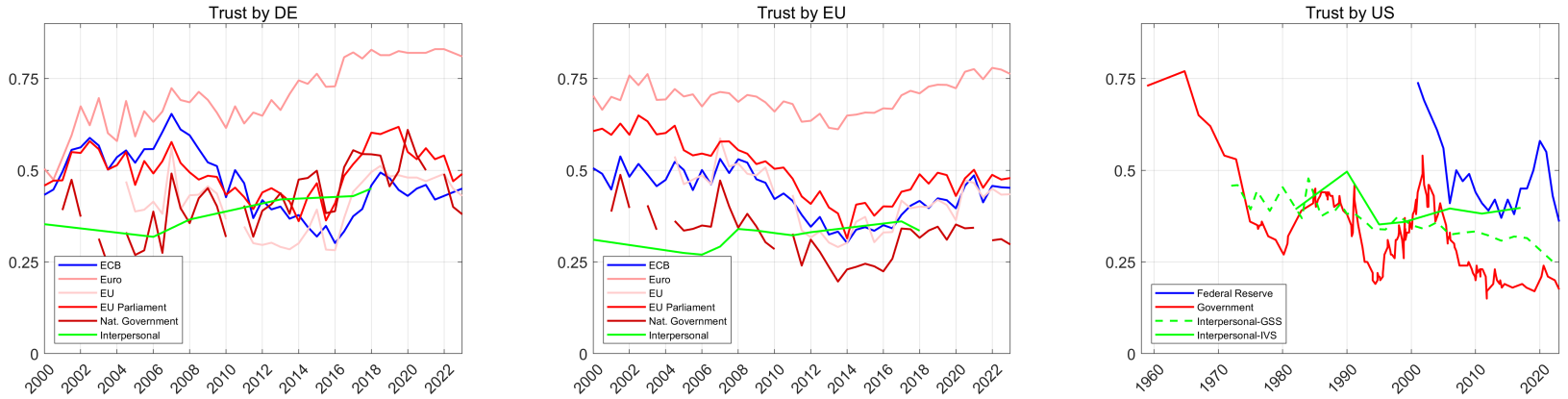
in the survey.

Our main findings are as follows. Households who state that competence matters for their trust in the ECB, tend to express higher levels of trust in the ECB than those for who express that competence matters less. Our baseline estimation results suggest that a one standard deviation increase in the importance households attribute to the ECB's ability to maintain stable prices and to its technocratic policy approach, strengthens self-reported trust in the ECB by almost 0.4 and 0.3 units (i.e. categories on a scale from 0 to 10 survey participants could select), respectively. Conversely, those who place greater importance on values, particularly the integrity of top central bankers, honest communication and broader concern, tend to have lower levels of trust in the ECB. A one standard deviation increase in the importance households attribute to the ECB's adherence to values weakens trust in the ECB by 0.07 to 0.18 units.

Trust in the ECB is further found to hinge on trust in political institutions more generally. A one standard deviation increase in trust in political institutions boosts self-reported trust in the ECB by 1.2 units, which is remarkable. The corresponding effect of a similar increase in generalized trust (i.e. trust in others) is much smaller, at 0.14 units, but it nearly quadruples once we drop trust in political institutions more generally from the model, which mediated between generalized trust and trust in the ECB. A final result is that trust in the institution is instrumental for the ECB to anchor inflation expectations, with values playing a smaller role. Nonetheless, this does not imply that values are irrelevant, as we discuss.

Our paper has important policy implications for central banks. One is to emphasize shared values with the public, not instead, but in addition to price stability and decisions grounded in rules, analyses, science, and facts. Emphasizing values may have greater leverage than perfecting (technical) competence. This is because individuals who value competence already have high trust in the ECB, and the ECB (along with other central banks) is already maximizing its efforts to enhance decision-making through data, science, and rules in order to keep prices stable. In contrast, those for whom values matter have lower trust in the ECB, and simultaneously, the emphasis placed on values by the ECB is currently limited. It is certainly more challenging for the ECB to encourage individuals who presently prioritize values to redirect their focus towards competence (which central banks do, for instance, by educating the public to enhance financial literacy), compared to placing greater emphasis on values. Furthermore, as we will discuss later, the future is likely to see a heightened emphasis on values among the public.

Figure 1: Trust in central banks and in other political institutions and interpersonal trust



Notes: Trust by survey participants from Germany (by DE), the euro area without Germany (by EU) and the US. Trust in euro-area institutions are taken from Eurobarometer. Survey participants are asked: "Do you tend to trust or tend not to trust the European Central Bank / the national government / the EU / the EU parliament?" (or very similarly). We report shares of "Tend to trust" (over sum of "Tend to trust", "Tend not to trust" and "Don't know"). Survey participants are asked: "Please tell for each statement, whether you are for it or against it. A European economic and monetary union with one single currency, the euro". We show the shares of "For" (over the sum of "For", "Against", "Refusal"). The measure of trust in the US government is based on Pew Research data. The share of those who say they trust the government to do what is right "just about always" and "most of the time" (over the sum of "just about always", "most of the time", "only some of the time", "never", and "no opinion"). Trust in the Federal Reserve is taken from Gallup. We present the share of respondents who report a "great deal" or "fair amount" of trust in the Chair of the Federal Reserve. Interpersonal trust data are taken from the Integrated Values Surveys (IVS), which is the joint EVS (European Values Study) - WVS (World Values Survey) time series data. The question asked is: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?". We report the share of respondents who state "Most people can be trusted" (over sum of "Most people can be trusted", "Can't be too careful" and "Don't know"). U.S. interpersonal trust data is sourced from the General Social Survey (GSS). The question is the same as for the EVS-WVS. We report the share of "Can Trust" (over sum of "Can Trust", "Can't be too careful", "Do not know / cannot choose", "Depends"). The euro area comprises France (FR), Italy (IT), Spain (ES), the Netherlands (NL), Finland (FI), Portugal (PT), Austria (AT). Country data are available for different time periods. For each country the measures were linearly interpolated and then, to form the aggregate, pooled together using GDP (2019) weights.

The other policy implication is to pay attention to the factors underlying the political crisis, which extends beyond central banks, as well as those underlying low generalized trust. Central banks are not immune to recent trends of polarization, populism, and social unrest - be it because individuals often fail to distinguish between different political institutions, lumping them together in their assessments; because there's a recognition of the interconnectedness between different policies and, hence, political institutions; or because many feel alienated from technocratic central banks, perceiving a lack of responsiveness to their concerns and of opportunity for participation, despite recent attempts by central banks to become more relatable. As key players in the political arena, central banks can engage in - and possibly lead - a broader societal discourse on the roots of the political (trust) crisis and low interpersonal trust. Furthermore, by authentically connecting with individuals, central banks can facilitate new positive experiences, thereby restoring generalized trust.

The remainder of the paper is organized as follows. Section 2 provides an overview of various definitions of trust and examines the literature on the determinants of trust in central banks and political institutions more generally. Section 3 presents the data utilized in our analysis. Our core findings are outlined in Section 4. In Section 5, additional analyses are conducted to gain deeper insights into: the underlying drivers of the perceived trustworthiness of the ECB among the public; various aspects of individuals' ability to trust more generally; implications for the credibility of monetary policy (measured through long-term inflation expectations). Section 6 offers conclusions and policy implications.

2 Institutional trust, interpersonal trust and trust in central banks - definitions, related literature, contributions

2.1 Why trust matters

Trust holds significant importance in various human relationships, encompassing economic interactions and relations between citizens and public institutions.[7] Empirical research

[7] Fehr [2009] stated: "Trust [...] permeates friendship relations, family relations, and economic relations. [...] a social scientist has good reason to be interested in "trust" as a concept. Trust also seems particularly important in economic exchanges because it seems obvious that the absence of trust among the trading partners severely hampers market transactions." Alesina and La Ferrara [2002] explained how trust is an important component of "social capital".

demonstrates that trust exerts influence across numerous domains, including economic growth, inflation, health behaviors and outcomes, and subjective well-being (see Fehr 2009, OECD 2017, Brezzi et al. 2021, and references therein). Trust in institutions is essential to uphold their legitimacy and facilitate effective policy making. The critical role of trust for price stability and beyond was articulated by former chief economist of the European Central Bank (ECB), Issing [2000]: "Trust is crucial for money to function as a medium of exchange, as a store of value and as a stable unit of account. [...] money is a social achievement [...] a question of trust, its use requires trust and it reflects trust." He also stresses that stable prices are the "basis for trust in the interaction among economic agents, trust in property rights, trust in society and trust in the future more generally." Executive Board member Schnabel [2020] further underscored the relevance of public trust in the ECB and the euro for monetary policy effectiveness and the ECB's independence. Finally, Kril et al. [2016] stated: "trust has replaced the gold standard as the anchor of the world's monetary system."

2.2 Trust in political institutions

Institutional trust, competence, and values Trust is defined differently across various disciplines. Here, we follow the OECD (e.g. Brezzi et al. 2021, Murtin et al. 2018, OECD 2017), which draws from the political science literature. It defines citizens' trust in political institutions or governments as "a person's belief that another person or institution will act consistently with their expectations of positive behavior". This definition encompasses the behavioral definition proposed by Coleman [1990], as cited by Fehr [2009]: "An individual [...] trusts if she voluntarily places resources at the disposal of another party [...] without any legal commitment from the latter. In addition, the act of trust is associated with an expectation that the act will pay off in terms of the investor's goals." Furthermore, it "captures the essence of trust, which consists of the investor's willingness to make herself vulnerable to others' actions" (Fehr 2009). Trust also encompasses invisible (cognitive and other) aspects underlying individuals' behaviour, and the OECD definition comprises those aspects as well.

Two pertinent concepts concerning trust in political institutions are institutional trust (i.e., trust in institutions) and interpersonal trust (i.e., trust in other people or generalized trust).[8] The OECD distinguishes five facets of institutional trust, which encompass responsiveness and reliability (indicative of an institution's competence), as well as openness, fairness, and integrity (reflective of an institution's values). Values are sometimes synonymous with will-

[8] Generalized trust refers to trust in unknown individuals, as opposed to "limited trust", which refers to trust in family, friends, etc.

ingness, motivations, or intentions, as noted by Kril et al. [2016], citing Castelfranchi and Falcone [2010], and Brezzi et al. [2021]. And values are not necessarily linked to outcomes. Empirical findings from the OECD Trustlab regarding trust in political and public institutions are synthesized in various OECD publications (e.g., OECD 2022). They indicate that government competence, including public service satisfaction, accounts for 21% of the cross-sectional variation in self-reported trust in government, while government values contribute nearly 10% (Murtin et al. 2018).[9] Integrity, particularly low corruption, emerges as the most crucial factor for trust in values. However, recent survey results for OECD countries reveal that only 30% of the population believes an elected or appointed official would likely decline a well-paid private sector job in exchange for a political favor (OECD 2022).

Interpersonal (generalized) trust Interpersonal trust in this context is relevant because institutions consist of human beings (those who are working in and representing the institution), who interact with and influence the lives of human beings outside of the institution. Trust in institutions and trust in the people working within them are intertwined, despite defined roles and constraints that delineate institutional boundaries and may lead to attitudes toward institutions diverging from those toward the individuals within them (Campos-Castillo et al. 2016, p. 101). At the OECD Global Forum on Building Trust and Reinforcing Democracy held in 2022, high-level panelists underscored the "personal responsibility that befalls policy makers to enshrine the values of integrity" (OECD Global Forum 2022). Interpersonal trust is assumed to hinge on perceptions and expectations of the trustworthiness of both institutions and the individuals working within them, as well as on preferences such as risk aversion or social preferences (e.g., aversion to inequality or betrayal).

A behavioural approach to trust is adopted by Kril et al. [2016], drawing from Castelfranchi and Falcone [2010]. The authors distinguish between reason-based and implicit trust. Reason-based trust stems from rational argumentative decisions, where the trustor assesses the trustee's competence and willingness regarding the successful achievement of a specific goal. In contrast, implicit trust is an automatic, unintentional, and unconscious (affective) reaction to stimuli. This approach aligns with the understanding of the mind as comprising an impulsive (automatic) part (associated with the emotional brain and "fast thinking") and a rational part (associated with the rational brain and "slow thinking") (e.g., Kahneman 2011). While both aspects are recognized to play a role, decisions and behaviors based on reason are considered preferable to those driven by emotions, impulses, or instincts, which

[9] Perceptions about society and individual characteristics explain an additional 10%. Another significant portion is left unexplained.

can give rise to behavioral biases.

These approaches mostly align with the standard neoclassical economic framework, where people are viewed as rational utility-maximizing agents with fixed preferences, perhaps subject to information imperfections or cognitive biases. An exception comprises (deeper) values, which lies outside the framework. The reason is that modern economics is a reflection of the current (Newtonian) worldview, which is based on materialism, mechanization, individualism, and reductionism - a perspective likened to "flatland" (i.e. no inner depth or being levels and, hence, no values) by philosopher Wilber [2016/2001, p. 94], or "flat values" as noted by Carney [2020], where values are reduced to external, often quantitative objectives. While classical economists once emphasized ethical values in their discourse, over time, values gradually faded from economics. In the upcoming paragraphs, we introduce an additional layer to trust that, to our knowledge, is novel within economics, and that forms the foundation for values.

Beyond conventional and behavioural approaches to trust We draw on insights from deep (humanistic and transpersonal) psychology, which emerged from the limitations of behavioural psychology,[10] and the interdisciplinary InterPersonal NeuroBiology (IPNB) framework which draws on insights from psychology, neuroscience, physics and systems theory, proposed by psychiatrist Siegel [2020].

In humanistic (and transpersonal) psychology, trust is a multifaceted concept involving not only trust in others, but also self-trust, trust in the world, and trust in the process of growth and development (Rogers 1961, Maslow 1968). Rogers (throughout his book) discusses trust within the broader context of his humanistic approach to therapy and personal growth. Interpersonal trust, according to Rogers, emerges as a natural outcome of genuine human connection and empathic understanding (pp. 283-284). Rogers also believes that congruence,

[10] Humanistic psychology (based on Rogers, Maslow, also May, Frankl, Yalom etc.) emerged in the late-1950s as the third wave of psychology, following the first two waves, psychoanalysis and behavioural psychology. Humanistic psychology expanded its influence in the 1970s and 1980s (Mcleod 2023). It looks at the whole person, assumes that each individual is unique, that people have free will (and agency) and, hence, behaviour is not exclusively determined by past conditioning or the environment. Humanistic psychologists are interested in being, becoming, meaning. People aim at self-actualizing (which, according to Maslow, requires satisfaction of basic needs first) and at realizing their human potential (or human nature). It is further recognized that humans are innately good, active and creative. Humanistic psychology offers a new understanding of human nature and human conditions. In the late-1960s / early-1970s a fourth wave emerged: transpersonal psychology, based on Maslow, Grof (who suggested that this will bring about a paradigm change in psychology, e.g. Grof 2017) and Sutich. It connects the human being to something greater than his / her personality, focuses on spirituality, self-transcendence (beyond ego), self-realization, mystical experiences, etc.

i.e., the ability to be transparent, and authentic in interactions[11], is essential for establishing trust. Congruence fosters trust because it creates a safe and supportive environment where individuals feel understood, accepted, and valued. Maslow discusses trust within his broader theory of human motivation and self-actualization. He suggests that as a pre-requisite of self-actualization (and trust) safety needs must be met (pp. 102, 107). He proposes that individuals must have a foundation of trust in their environment, relationships, and themselves (their own impulses, capabilities, judgements and feelings (p. 38)) in order to pursue higher levels of psychological growth and fulfillment. Almaas [1987, pp. 96-106] defines trust as "allowing things to emerge". He emphasizes trust in oneself, in somebody else and in a situation (or life itself, as it is or as it unfolds) and a sense of safety (and absence of fear) as a common factor among them. He distinguishes three levels of trust: the first, most superficial one being the knowledge that "the person is not going to hurt you"; the second, deeper one, is trust that "the person wants what is best for you" (tied to the qualities compassion and kindness); and the third, even deeper one, is trust "because of what the person is", e.g. "that the person has integrity, which has nothing to do with you", or truthfulness, which can even imply that one gets hurt.

Siegel embraces a systems view of the brain and social groups, where the mind emerges from neural interactions and interpersonal relations. He defines trust as "the state which arises when there is presence, attunement and resonance" (Siegel 2020, pp. 200-201). Presence entails openness, receptivity, and the capacity to embrace uncertainty. Attunement involves focusing attention on the internal experience of another, beneath behavioural signals. Resonance describes how we connect with another, enabling us to feel felt, become part of the system, and we can change with the encounter. Siegel also posits that trust manifests as the absence of fear (akin to the deep psychologists), which obstructs resonance, attunement, and presence.

These definitions of trust resonate an understanding of life as naturally unfolding towards greater wholeness. They acknowledge our inherent capacity as trusting and connected beings, capable of feeling safe in the midst of life's uncertainties, both within ourselves and in our relationships with others. Importantly, trust in these approaches is a *state of being*. It involves the being (or existential) levels, which lie underneath behaviour, thoughts, emotions or primary impulses, and beyond preferences and expectations, and which are typically dis-

[11]Rogers defines someone's congruence as "the extent to which his words matched his feelings" (p. 49), "feelings [that person] is experiencing are available to him, available to his awareness, and he is able to live these feelings, be them, and able to communicate them if appropriate" (p. 61), and he emphasizes congruence between self and one's ideal (p. 236).

regarded in modern science.[12] Trust is further the antagonist of fear.

These dimensions of trust are also interconnected with trust in individuals or institutions due to shared values. For instance, Siegel's InterPersonal NeuroBiology framework and Rogers' approach incorporate openness, while Rogers and Almaas address integrity. Deep psychologists and Siegel cover additional qualities, which may necessitate an emphasis on further values, such as the ability to be present, to attune, and to resonate; kindness and compassion; authenticity (or congruence); or the care for people's safety. Values do not fall from the sky. They must be internalized and embodied. Otherwise, they are merely empty statements. Values are a reflection of people's mindsets. From this viewpoint, it also becomes evident that the division between values and competence is somewhat artificial. Put differently, living according to deeper values necessitates the competency of the mind (broadly defined to include the heart, for instance). What economists and political scientists label as competence tends to be technical proficiency. Later, we will demonstrate that the boundary between values and competence is not always distinct. At present, we still find it useful to align with the OECD's definition of institutional trust.

Trust may erode due to negative past experiences in interpersonal relations, with trauma representing an extreme yet prevalent scenario.[13] Individuals with such experiences often struggle to feel safe and may lose trust, along with the capacity to be present, resonate, and attune, particularly when triggered by stressful situations reminiscent of the original event, or even habitually. Traumatic experiences get stored in implicit memory, inaccessible to conscious awareness. Consequently, individuals may struggle to differentiate between present and past, and may even mistrust those who are trustworthy. Throughout their lives, individuals develop coping mechanisms to avoid uncertainty and interpersonal relationships, often unconsciously. Trust can be restored as we encounter new experiences that overwrite the old, negative ones. Neuroplasticity, the brain's adaptability throughout adulthood, is a key factor in this transformation.

[12] Philosophers including some pioneers in economics such as Aristotle, Plato, Sokrates, Aquinas, Augustine, Rousseau, Hegel, Spinoza, Smith, Mill, Marx, Fromm have written about the being levels.

[13] Early interactions with primary caregivers exert particularly profound influence. Childhood trauma and insecure attachment are prevalent phenomena contributing to this erosion of trust. As children we depend on our caregivers for our survival, and our brains are still growing. 35%-45% of the US population exhibits insecure (avoidant and ambivalent) attachment to a primary caregiver (where children do not feel seen, soothed or safe) (Siegel 2022), 2/3 with at least one adverse childhood experience (i.e. physical or emotional abuse of neglect, violence in the household, addiction by at least one parent) (psychiatrist Van der Kolk 2018/2015, pp. 175-179), which can lead to developmental trauma. There is also collective trauma, which is overlapping with attachment issues.

The relevance of these insights lies in how political institutions shape the environment individuals are having experiences in. Policy makers can foster positive interactions, promoting trust-building experiences. This can occur when they are with integrity, authentic (or congruent), empathic and kind, able to be present (and open), to attune and to resonate, and when they care for people's safety, beyond mere technical competence. Consequently, political institutions not only have the potential to enhance their own trustworthiness, but they also can influence individuals' capacity for trust. Enhancing generalized trust demands a collective effort across society, with individuals and economic policy makers not exempt.

2.3 Public trust in central banks

Central bank practice In the realm of trust in central banks, emphasis is placed on (technical) competence, particularly regarding a strong track record in achieving their primary objective of price stability. Decisions are rooted in rules, technical analyses, data, and scientific evidence.

Some consideration is also given to values. Independence is upheld to safeguard the integrity of central banks and their leaders. Transparency has notably improved in recent decades, following a period of limited and cryptic communication by central bankers (Ehrmann et al., Bernanke 2015, Jansen et al. 2008). Efforts are made to provide information to financial markets and the public regarding the present and future state of the economy, along with explanations of actions and outcomes through speeches and regular publications. Recently, central banks have shifted their approach to not only presenting facts but also enhancing relatability with the broader public. An innovative approach currently being explored is the "Listening" events, pioneered by the Federal Reserve Board and subsequently adopted by the ECB and other central banks. These events facilitate face-to-face gatherings between central bankers and citizens. Research indicates that trust tends to rise when individuals feel listened to and engaged in the policy making process (Brezzi et al. 2021). And even though the direct impacts of those direct encounters may seem limited because only few people can partake, the indirect effects can be substantial.[14]

[14]This is because central bankers engage with a diverse array of organizations many individuals may be able to identify with. The Chair of the Federal Reserve, for instance, meets with employee groups, union members, small business owners, residents of low- and moderate-income communities, workforce development organizations, community colleges, retirees, and others. Similarly, representatives from the ECB (and national central banks within the euro area) convene with regional consumer organizations and social partners. Furthermore, videos of these events are typically available on central banks' webpages, making them accessible to a broader audience. In addition, the ECB has invited euro-area citizens to submit ideas and comments.

Central bankers are increasingly demonstrating empathy and kindness in their communication (e.g., Lagarde 2020). There is, however, no obvious emphasis on congruence or authenticity in the sense of Rogers, which would imply that central bankers mean and feel and act in ways in line with what they are communicating.[15] Finally, concepts such as resonance, attunement, or presence are also barely discussed and perhaps not widely understood in the central banking communication sphere, even though this would be key to improve the communication with the public as well as inside of the institutions. Generalized trust is emphasized implicitly through the in-person events, albeit often in a transactional manner. Central banks' engagement with the public can be interpreted as a means to influence inflation expectations or other economic outcomes, rather than fostering genuine connections where trust naturally emerges.[16] Overall, there is scope for enhancement of trustworthiness concerning values and of generalized (interpersonal) trust.

The strong focus on technocratic policymaking has two main rationales, which are, however, not immutable, and central banks and economists are already exploring new approaches, as we will discuss in the subsequent paragraphs.

One rationale often provided by economists and central bankers for technocratic policymaking is that, unlike elected politicians who lead other policy institutions, central bankers are not elected through democratic processes and do not have direct mandates like the ECB.[17] Consequently, it is argued that they should refrain from direct engagement with the general public. Through technocratic policy making central banks would also be able to set themselves apart from other policy institutions in terms of trust and credibility (e.g., Hansen 2022).

On the other hand, central banks require public legitimacy as they operate in the public sphere and directly affect people's lives. By managing inflation, they influence household spending decisions, acknowledging that inflation's impact goes beyond mere numbers to

[15] Central bankers pay, however, attention to coherence (or congruence) of narratives (e.g., Kydland and Prescott 1977 and macroeconomic policies (e.g., Carstens 2024).

[16] For example, Carstens [2023] stated: "trust is not an end in itself. Trust in monetary and fiscal policies, and financial regulation and supervision is a necessary but not sufficient condition for meeting higher objectives for society's well-being, including higher incomes, more and better paid jobs, and an adequate provision of social services to the public." While we agree that trust alone isn't sufficient to ensure people's well-being, from both a systems perspective and a deep psychological standpoint, trust cannot emerge when it's merely a tool to achieve another end, like an economic outcome.

[17] Some central banks like the Bank of Canada are in close and active engagement and consultation with the general public as they go through periodic mandate renewals [MPF, 2021].

significantly affect overall well-being. Conversely, public expectations and decisions play a crucial role in shaping monetary policy. Hence, central banks *are connected* with citizens, and the question is rather whether to make this connection more explicit. Moreover, although technocrats are often viewed as skilled and effective, a disconnect between citizens and decision-making processes, especially when people feel sidelined by unelected experts ("central bankers in their ivory towers"), can lead to skepticism, resentment, and a loss of trust. Figures 1 and 5 further indicate that trust in central banks doesn't consistently surpass trust in other political institutions across all countries, questioning whether the current state of affairs in central banks is sufficient to distinguish them from other policy makers.

The second rationale for the current technocratic practices, which receives less attention, is that modern central banking is rooted in economic science, which reflects the Newtonian worldview. That worldview omits values, as discussed. Furthermore, contemporaneous economists tend to focus less on relationships or think in terms of systems, opting instead to dissect wholes and analyze their constituent parts, often isolating the economy from broader contexts. This also explains the reduced understanding of trust in central banks.

However, this is not the end of the story. Wilber, within his broad Integral framework, which interconnects and contemplates the evolution of inner, outer, individual, and social perspectives, foresees our progression towards more integrated and holistic mindsets, capable of embracing ethical values, compassion, and broader awareness and of overcoming the disconnect (while not sacrificing on differentiation).[18] Human beings, including central bankers, are capable of development.

Economists have recently started incorporating factors such as values and experiences, which are pertinent to building trust. Mazzucato [2018], Carney [2021], Bowles and Carlin [2020], and Sandel [2012], for instance, advocate for reintegrating values into economic frameworks. Alesina and La Ferrara [2002] emphasize the impact of traumatic experiences (such as divorce, diseases, accidents, financial misfortune) on interpersonal trust. Other scholars have highlighted the significance of personal experiences, memory, and neuroplasticity in shaping expectations and economic outcomes (see, e.g., Malmendier 2021, Malmendier and Wachter 2023, and Malmendier and Sheng 2023, as well as Malmendier and Nagel 2016 and Salle et al. 2024 for inflation applications directly relevant for central banks). Agarwal [2022] re-

[18] For further reading, see references such as Wilber [2016/2001], Wilber [2001], Smith [2017], Cook-Greuter [2014], as well as Laloux [2017] for organizational applications, and Scharmer and Kaufer [2013], Dawlabani [2013], Arnsperger [2012], O'Brien [2021], and Eickmeier [2024] for applications in economics and social sciences.

cently emphasize fear in the economic context. Behavioral economics has firmly established itself within mainstream economics, yet further insights from psychology, beyond behavioral psychology, remain to be integrated. Surveys, now extensively employed by economists, can offer valuable insights into intangible concepts such as trust and values.

Empirical literature The empirical literature examining public trust in central banks underscores the relevance of socio-demographic variables, alongside individual economic circumstances or broader economic prospects, as highlighted in Schnabel [2020]. Additionally, trust in central banks has been shown to be influenced by trust in other political institutions, as demonstrated by Ehrmann et al. [2013], Brouwer and de Haan [2022], Farvaque et al. [2017], Hwang et al. [2023], and Hayo and Neuenkirch [2014]. Moreover, research such as Mellina and Schmidt [2018] has observed that individuals who possess knowledge about the ECB and its functions tend to exhibit higher levels of trust in the institution.

Recently, research has focused on how central banks can better *relate* to the general public. Studies suggest that this can be achieved through simple communication (Kryvtsov and Petersen 2021; Gorodnichenko et al. 2022; Haldane and McMahon 2018; Gloeckler and Mee 2022) or, conversely, by communicating less (Hwang et al. 2023). While only a few papers delve into deeper psychological aspects or consider the broader context, our paper aligns closely with this line of inquiry. For instance, Angino and Secola [2022] explored the role of instinctive (implicit) versus reflective trust in the ECB, finding that instinctive trust tends to surpass reflective trust, particularly among women with limited ECB knowledge. Bholat et al. [2019] find, via survey analysis, that using more relatable language and content, such as everyday instead of technical language and employing first- and second-person pronouns ("us"/"you") rather than third-person abstractions ("the Bank of England"), coupled with linking macroeconomic concepts to people's real-life experiences, enhances comprehension of policy messages and trust in the Bank of England. These findings are confirmed by experimental evidence by Mochhoury [2023]. Meanwhile, Kril et al. [2016] examine, in addition to professionalism and transparency, factors such as social awareness[19] of the bank, whether the bank is innovative, original and has initiative, and influences people's lives. They find that all these factors significantly influenced trust in the Bank of Israel, with professionalism and transparency particularly affecting trust in the bank's predictions. As a final note, while central bankers often emphasize that independence preserves integrity, and integrity is known to impact trust in political institutions, there are, to our knowledge,

[19]The statement survey participants are confronted with is: "Social justice considerations are important to the Bank of Israel along with financial and economic considerations."

no formal studies examining whether integrity affects perceived trustworthiness in central banks.

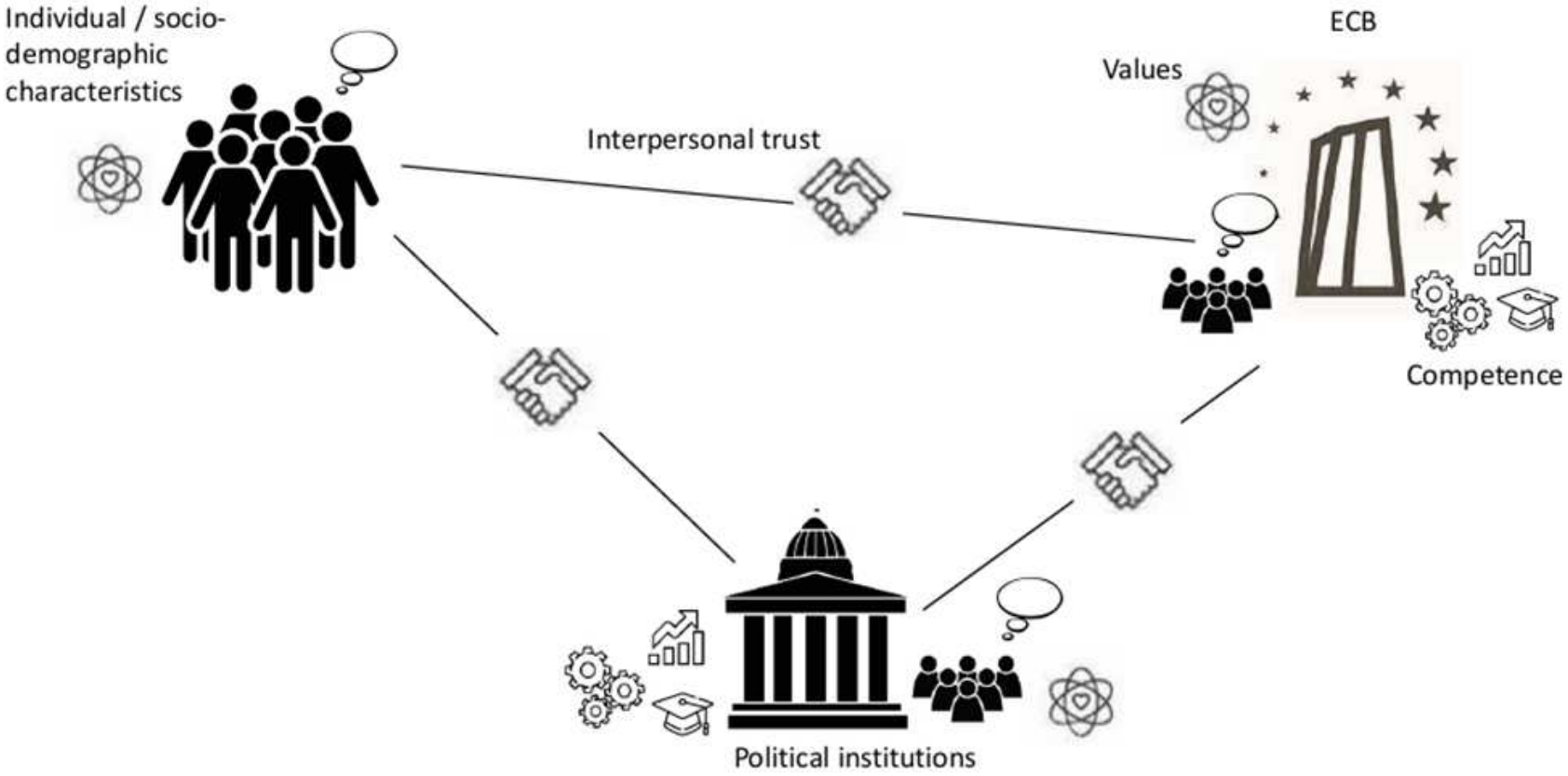
2.4 Contributions

Our research starts by exploring the well-known factors that shape public trust in central banks, including socio-demographic influences, trust in political institutions, and how the public views the banks' technical ability in handling issues related to monetary policy and the economy. We then take a fresh step by looking into broader, more holistic factors like integrity and honesty, and how the central bank's concerns and scope reach beyond just economic matters and its primary objective. Our study also takes a deeper dive into the concept of trust, considering not only how we trust others but also our trust in life and ourselves, while acknowledging the fears and barriers that can erode trust. This approach widens our lens beyond the usual frameworks of trust, bringing new depth to our understanding.

Building on this, our findings suggest that policy communication strategies need a new focus. The potential for central banks to bolster public trust is significant, but it requires a shift towards emphasizing core values, fostering trust in the wider political landscape, and nurturing interpersonal connections. By weaving these elements together, our work suggests a more nuanced and effective approach to enhancing how the public perceives and trusts central banks.

Figure 2 presents an overview of the key influences on trust in the ECB that we will examine. It illustrates how trust in the ECB is linked to the ECB's trustworthiness in terms of (technical) competence and values as perceived by households; how generalized trust arises from interpersonal relations, between citizens and policymakers, and between policymakers who are thinking and feeling beings and have shared and individual values; and how it intertwines with trust in political institutions more generally.

Figure 2: A holistic approach to trust in the ECB



3 Data

The survey was performed within the Bundesbank Online Panel of households (BOP-HH).[20] It is conducted online monthly on a representative set of German households. The survey consists of a core set of questions related to expectations about household and macroeconomic outcome, as well as a set of special questions. A total of 4,151 households participated in the survey. In Wave 42 of the BOP-HH, we introduced a series of special questions to gauge trust in the ECB and its determinants, as perceived by households. We presented the survey participants with questions and statements about their trust in the ECB and aspects found to matter for political institutions by the political science literature, i.e., the ECB's trustworthiness in terms of competence and values and interpersonal (generalized) trust, among others. We presented the following statements to survey participants.[21]

Trust in the ECB.[22] "On a scale from 0 to 10, how much trust do you have in the European Central Bank (ECB)?" where 0 refers to "No trust at all" and 10 refers to "Absolute trust".

Trustworthiness of the ECB. "On a scale from 0 to 10, to what extent do the following aspects play a role in your trust in the ECB?" where 0 refers to "Does not play a role at all" and 10 refers to "Plays a major role".

(a) It has largely achieved its main objective of price stability in the past. **Achieved price stability in past**
(b) It makes its decisions on the basis of previously defined rules, technical analyses, scientific evidence, and facts. **Technocratic**
(c) It provides the general public, through speeches and written statements, with sufficient information regarding its actions and the state of the economy. **Provides sufficient information**
(d) The ECB's President and senior management have a moral compass, i.e., they are people with integrity. **Integrity**
(e) It is honest in its communication (things are communicated even if they are not going well or according to plan). **Honest communication**
(f) It sees and takes into account the overall picture (e.g., complex relations, even extending

[20] See https://www.bundesbank.de/en/bundesbank/research/rdsc/research-data/bop-hh-757542 for a description of the survey.
[21] Questions in the surveys were not asked in randomized order, but items within each of the questions were.
[22] The bolded abbreviations here and henceforth were not included in the survey questions. We list them here for easy reference in later data analysis.

beyond economic matters). **Accounts for overall picture**
(g) It acts out of concern for the well-being of the general public (extending beyond economic concerns). **Acts on broader concern**[23]

Statements (a) and (b) would be related to the ECB's trustworthiness in terms of competence (in the OECD's sense), as perceived by households. (a) captures performance (the outcome), and (b) captures reliability and responsiveness. Variables (c)-(g) would be related to values. (c) and (e) would capture transparency (openness), (d) integrity, which (e) would capture as well, along with congruence). (f) and (g) would be related to broader awareness and concern (which comprises a sense of care and compassion). While (a) and (b) represent technical competence, the remaining statements reflect the competency of the mind. With a more mature mindset, possibly due to fewer negative past experiences or more extensive training of the mind, individuals, including central bankers, can exhibit integrity, honesty, compassion, and awareness of the bigger picture.

People's ability to trust / generalized trust. "On a scale from 0 to 10, to what extent do the following statements describes you?", where 0 refers to "Not at all" and 10 refers to "Fully".
(h) I find it easy to trust others. **Find it easy to trust others**

Variable (h) serves as our primary measure of what the literature commonly refers to as "generalized trust" (Murtin et al. 2018). The formulation closely resembles the question posed to survey participants in the World Values Survey (WVS), known as the Rosenberg question ("Would you say that most people can be trusted or that you can't be too careful in dealing with people?"), as well as in the OECD's Trustlab ("In general, how much do you trust most people?"). Both the OECD survey and ours employ the same quantitative scale ranging from 0 to 10, ensuring quantitative comparability of responses.

Our aim is to take a holistic approach and explore factors beyond technical considerations. Questions regarding trust in other people or political institutions, of course, allow for more interpretation compared to inquiries about quantitative outcomes such as inflation expecta-

[23] In another study (Eickmeier and Petersen 2024), utilizing the same June 2023 survey, we provided participants with information regarding the ECB's climate policies and inquired into the impact of this information on respondents' trust in the ECB, *after* we assessed their perceptions of the ECB's overall trustworthiness, also in terms of broader scope and concern (f) and (g). Therefore, responses to this question remain unaffected by participants' knowledge about the ECB's climate initiatives and reflections about their impact on trust.

tions. This is because individuals' mindsets and perspectives vary, and this variation is more significant for questions addressing deeper inner dimensions. In Section 5.3, we will delve into additional measures of generalized trust, supplementing our primary measure "Find it easy to trust others" to provide further insight into households' viewpoints.

Another statement we present to the survey participants is:
(i) In general, I trust political institutions. **Trust in political institutions**

Trust in political institutions captures both trustworthiness of institutions as well as provides further insight into an individual's ability to trust.

The Bundesbank's survey also collects data on respondents' gender, age, education, income, expectations of the economic situation, and the location of households in Germany (East or West) in 1989, just before German unification, which we will investigate. Table 1 presents the distribution of our data across socio-demographic groups. Notably, there are more observations for males than females and a higher representation of households located in West Germany in 1989 compared to those in the East. Additionally, there are relatively fewer young participants and individuals without educational degrees or still in training.[24]

4 Findings

4.1 Descriptive statistics

Trust in the ECB We commence with an overview of the baseline level of trust in the ECB, as self-reported by households. The left panel of Figure 3 and the first column of Table 2 depict its distribution and selected moments, respectively.[25] The mean (median) trust stands at 5.18 (5), indicating moderate trust overall. Notably, there exists considerable heterogeneity in trust towards the ECB. The distribution exhibits a hump-shaped pattern and is skewed to the right, with only 2% of respondents expressing complete trust (score of 10), while over 66% of households report intermediate to high trust levels (scores ranging from 5 to 10). Conversely, 8% of respondents express "no trust at all" in the ECB.

[24] For information regarding the survey's representativeness within the German population, see BOP-HH [2024].
[25] We drop "Don't know" answers throughout the paper.

Table 1: Observations across groups, in % of all observations

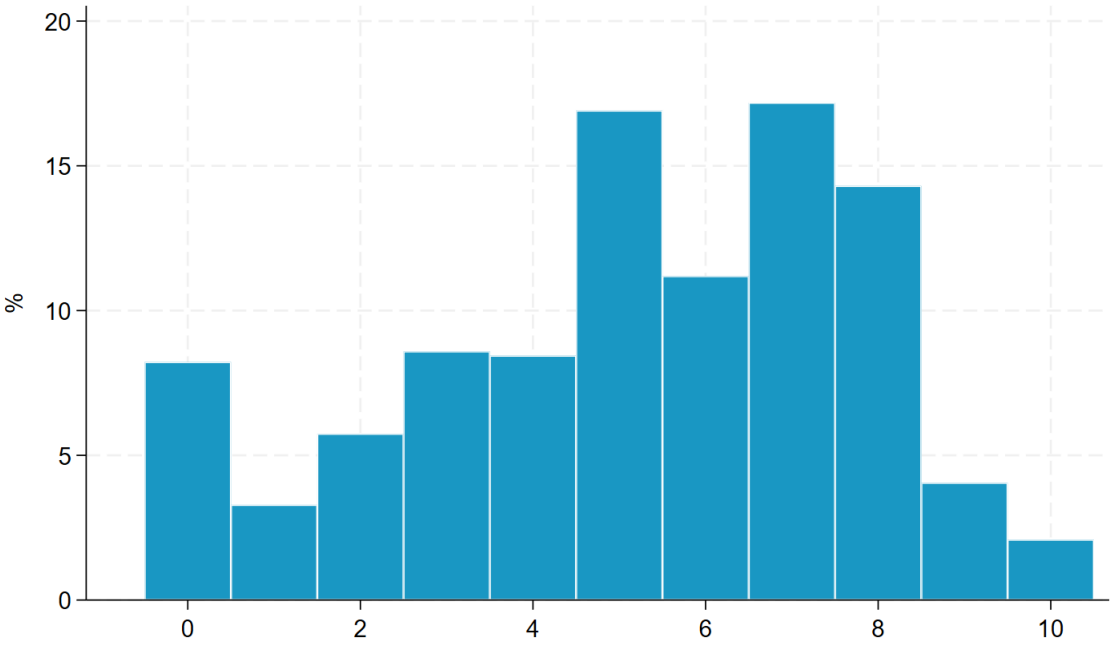
Female	37.1
Male	62.9
Age (16-24 years)	2.3
Age (25-60 years)	53.1
Age (> 60 years)	44.6
Income (< 2,500 Euros)	11.6
Income (2,500-6,000 Euros)	62.0
Income (> 6,000 Euros)	26.4
Education (no degree or in training)	2.5
Education (less or equal techn. or comm. college)	51.8
Education (bachelor degree)	15.4
Education (graduate degree)	30.3
East (in 1989)	18.0
West (in 1989)	82.0

Notes: Education (less or equal techn. or comm. college) refers to apprenticeship, vocational school, technical or commercial college.

Trust in political institutions and generalized trust We next compare survey responses for trust in the ECB with trust in political institutions more generally and generalized trust. We present selected moments in Table 2. The mean (median) of trust in political institutions is at 4.09 (4) and, hence, is smaller than that for trust in the ECB. Trust in political institutions has a higher standard deviation than trust in the ECB. This could reflect the fact that the question is less specific in terms of type of policy institution and context (OECD 2017). The mean (median) of generalized trust exceeds that of trust in political institutions and is smaller than that of trust in the ECB.

The observed low levels of trust in political institutions among our survey respondents align with the prevailing narrative of widespread lack of trust in political institutions and the looming political crisis, exemplified by the rise of extremist parties, populism, and perceived lack of political will, particularly in addressing pressing issues such as the climate crisis (Al Gore 2022). Averages for trust in political institutions broadly correspond to those documented in the literature. Additionally, our findings corroborate the results reported by Brezzi et al. [2021], indicating that citizens distinguish between institutions, such as the ECB and political institutions in general. Similar patterns of higher self-reported trust in central banks compared to other economic and policy institutions have been observed in studies on Israel by Kril et al. [2016] and others. Figure 1 illustrates, using Eurobarometer data, that trust in the ECB among German survey respondents currently surpasses trust in the national government, yet remains lower than trust in European institutions. Our findings

Figure 3: Distribution of trust in the ECB



on generalized trust broadly align with those from other surveys.[26]

Table 2: Selected moments of self-reported trust

	Mean	Median	Std.dev.
Trust in the ECB	5.18	5	2.60
Trust in political institutions	4.09	4	2.77
Generalized trust	4.42	5	2.36

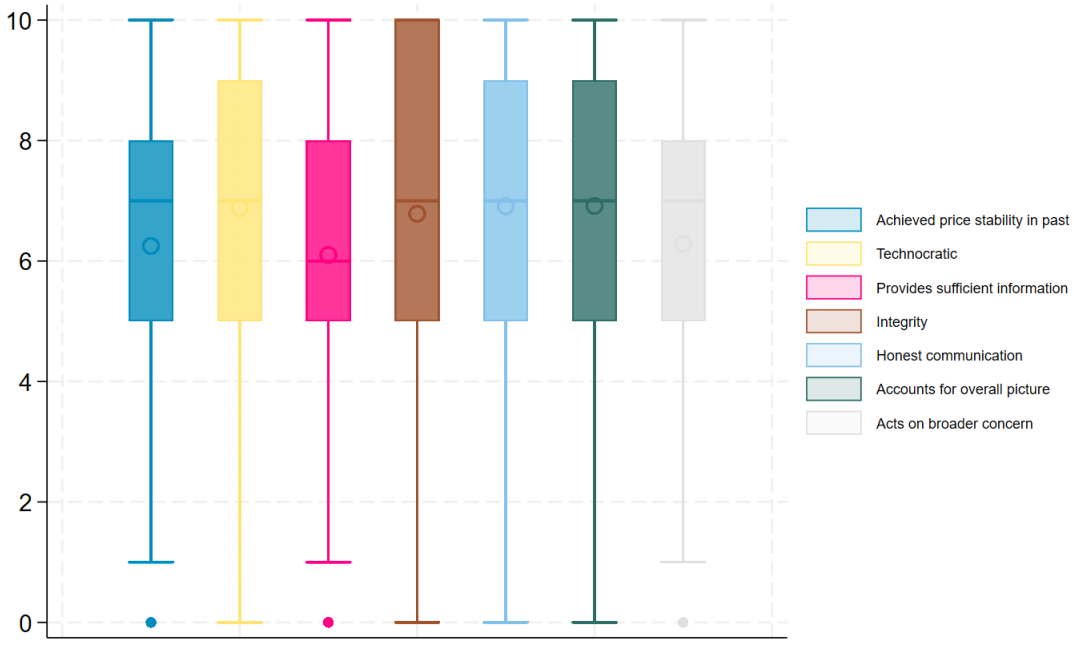
Notes: Generalized trust refers to the variable "Find it easy to trust others".

Determinants of trustworthiness of the ECB Now, shifting focus to the determinants of the ECB's perceived trustworthiness as reported by households, Figure 4 illustrates that all means fall between 6 and 7. Factors linked to competence ("Achieved price stability in the past", "Technocratic") and those associated with transparency ("Provides sufficient information"), commonly regarded in central banking, do not exhibit higher means compared to other factors. The notable similarity in distributions across determinants associated with

[26]The mean (median) level of generalized trust is slightly lower than that reported by the OECD for Germany in 2017 (Murtin et al. 2018). One plausible explanation could be the crisis environment (climate crisis, geopolitical conflicts etc.) prevalent today, compared to 2017, which may instill fear and weaken trust. However, the OECD's findings from the European Social Survey conducted in 2014 are consistent with our observations for trust in political institutions.

trustworthiness and also the fact that means of trustworthiness exceed those of trust in the ECB itself warrants further investigation, which we delve into in subsequent sections.

Figure 4: Factors associated with perceived trustworthiness of the ECB



Note: The figure shows medians (lines), means (circles), interquartile ranges, minima and maxima as well as outliers (dots) of the variables. Outliers are defined as observations exceeding 1.5 times the interquartile range.

4.2 Regression analysis

To evaluate the quantitative importance and significance of these factors self-reported to influence trust in the ECB, we estimate the following linear regression:

$$Trust_i = \alpha + \beta' X_i + e_i \tag{1}$$

where $Trust_i$ denotes trust in the ECB as reported by household i, X_i is an $n \times 1$ vector of regressors (i.e. socio-demographic and other determinants), β denotes the n-dimensional coefficient vector. X_i will vary across specifications. We estimate the regression using OLS with robust standard errors. We later also carry out a robustness analysis in which we use an ordered probit model which relaxes the assumption from the linear regression model of equal distances between the categories.

Table 3: Regression analysis I: baseline and more

Trust	(1)	(2)	(3)	(4)	(5)	(5')	(6)	(7)	(8)	(9)	(10)
Expected economic growth	0.985***	0.983***	0.538***	0.492***	0.472***		0.740***	0.471***		0.478***	0.246***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)		(0.04)	(0.04)		(0.05)	(0.02)
Female	0.250***	0.288***	0.258***	0.218***	0.202***		0.171**	0.211***	0.151**	0.197**	0.081**
	(0.08)	(0.08)	(0.07)	(0.06)	(0.06)		(0.07)	(0.07)	(0.06)	(0.08)	(0.03)
Age	-0.002	-0.002	0.010***	0.012***	0.012***		0.007***	0.012***	0.014***	0.014***	0.007***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.095***	0.096***	0.041***	0.028**	0.024*		0.048***	0.017	0.022	0.028	0.013*
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
Education	0.105***	0.117***	0.010	0.004	-0.006		0.046***	0.005	-0.011	0.001	-0.003
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)		(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
East (1989)		-0.578***						-0.307***			
		(0.11)						(0.09)			
Trust in political institutions			0.505***	0.444***	0.416***	[1.152]		0.406***	0.462***	0.451***	0.223***
			(0.01)	(0.01)	(0.01)			(0.02)	(0.02)	(0.02)	(0.01)
Achieved price stability in past				0.183***	0.171***	[0.432]	0.219***	0.182***	0.179***	0.148***	0.098***
				(0.02)	(0.02)		(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Technocratic				0.144***	0.122***	[0.301]	0.209***	0.118***	0.123***	0.107***	0.069***
				(0.02)	(0.02)		(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Provides sufficient information				-0.062***	-0.047***	[-0.126]	-0.056***	-0.057***	-0.053***	-0.014	-0.023**
				(0.02)	(0.02)		(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Integrity					-0.048***	[-0.143]	-0.058***	-0.042**	-0.052***	-0.067***	-0.026***
					(0.02)		(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Honest communication					-0.064***	[-0.177]	-0.112***	-0.067***	-0.066***	-0.055*	-0.035***
					(0.02)		(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Accounts for overall picture					0.167***	[0.420]	0.185***	0.171***	0.181***	0.153***	0.092***
					(0.02)		(0.02)	(0.02)	(0.02)	(0.03)	(0.01)
Acts on broader concern					-0.026	[-0.073]	-0.023	-0.033*	-0.024	-0.042*	-0.015
					(0.02)		(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Find it easy to trust others					0.059***	[0.139]	0.220***	0.063***	0.065***	0.049**	0.034***
					(0.02)		(0.02)	(0.02)	(0.02)	(0.02)	(0.01)
Constant	1.414***	1.409***	0.687***	-0.651***	-0.786***		-1.189***	-0.665***	0.120	-0.720**	
	(0.25)	(0.29)	(0.20)	(0.21)	(0.21)		(0.24)	(0.24)	(0.20)	(0.31)	
Observations	3793	3497	3793	3793	3793		3793	3497	3793	3793	3793
R^2 adj. / pseudo R^2	0.156	0.168	0.404	0.458	0.473		0.336	0.475	0.446	0.488	0.142

Notes: (1)-(8) are based on OLS regressions, (9) are based on an OLS regression, where weights are applied to adjust for differences in the distribution across socio-demographic characteristics between the survey sample and the German population, (10) is based on an ordered probit regression, for which we present the Pseudo R^2. We use robust standard errors. (5') shows the unit change in trust in the ECB in response to a change of one standard deviation in the variables of interest. Qualitative expectations for economic growth, which are asked on a five-point scale. "What developments do you expect in the following metrics over the next 12 months?" Answers range from 1 (Decrease significantly) to 5 (Increase significantly). Female is a dummy variable equal to 1 for females and 0 for males. Age is a continuous variable from 16 to 80 years and older. Income has categories 1-13 from under 500, 500-999, 1,000-1,499, 1,500-1,999, 2,000-2,499, 2,500-2,999, 3,000-3,499, 3,500-3,999, 4,000-4,999, 5,000-5,999, 6,000-7,999, 8,000-9,999, 10,000 and more EUR. Education ranges from 0-8, where 0: no degree, 1: in training / studying, 2: apprenticeship, 3: vocational school, 4: technical of commercial college, 5: university of cooperative education, 6: bachelor, 7: master / diploma, 8: doctorate. East (1989) is a dummy variable equal to 1 for households from the East and 0 for households from the West of Germany in 1989. The dependent variable "Trust in the ECB" and all other explanatory variables take integer values between 0 and 10.

We begin by estimating the model using socio-demographic variables and expected growth as regressors (specification (1) in Table 3). Subsequently, we progressively expand the set of regressors to include trust in political institutions, measures commonly emphasized for assessing trustworthiness within central banks, and additional, more holistic, factors that may contribute to trust in the ECB (specifications (2)-(5)). Notably, the adjusted R^2 sees its most substantial increase when trust in political institutions is incorporated, rising to 0.40 from 0.16 in the model solely based on socio-demographic variables and expected growth. Introducing trust in political institutions leads to adjustments in magnitudes, significance levels, and directions of certain socio-demographic variables and expected growth, suggesting a correlation between these variables and trust in political institutions. Further enhancements in the adjusted R^2 are observed, reaching 0.47, upon adding measures that evaluate the trustworthiness of the ECB and generalized trust. In the following paragraphs we will be discussing findings from our baseline specification (5) and some robustness analyses. In order to gain a sense of the economic significance of these results, we report in specification (5') the unit change in trust in the ECB in response to a one standard deviation change in the variables of interest.

Economic outlooks and socio-demographic factors Expected economic growth enters significantly and positively, aligning with literature indicating a positive association between perceived or expected economic conditions and trust (Schnabel 2020; Hwang et al. 2023). The effect is significant: a one-category improvement in respondents' reported economic outlook results in a 0.47 unit increase in trust in the ECB. Replacing expected economic growth with the expected unemployment rate, expected inflation, or expected stock prices yields consistent findings, with highly significant coefficients as well. Signs are positive for expected stock prices and negative for expected inflation and the expected unemployment rate.

Age, gender and income enter with a positive sign and significantly, whereas education seems to play no role.[27] The positive relationships of income and age with trust in the ECB aligns with existing literature for political institutions (Murtin et al. 2018; Brezzi et al. 2021). Richer individuals may have greater opportunities for societal engagement, such as volunteering and political participation, and also tend to have broader social networks.[28] That older respondents tend to trust the government more than younger respondents is attributed

[27] When education is categorized into groups, the resulting dummy variables do not show significant effects.

[28] When we replace our income variable with 12 dummies (which can take the values 1 or 0) for all income categories but the lowest one (less than 500 EUR), we find that the categories 2,500-2,999, 3,000-3,499 as well as 8,000-9,999 EUR enter positively and significantly (the first at the 5% level and the last two the 10% level), broadly confirming our baseline result of a marginally significant coefficient on income.

in the literature to their inclination towards altruism and belief in the inherent goodness and trustworthiness of others. To our surprise, females exhibit a 0.2 unit higher trust in the ECB compared to males, despite central banking often being perceived as a male-dominated domain and the well-documented upward-bias in female inflation expectations [D'Acunto et al., 2021, Reiche, 2023]. While more men than women typically work in management or analytical roles, and policy making is primarily based on objective rules and facts, empirical evidence on gender differences in trust towards the ECB is inconclusive. Ehrmann et al. [2013] and Farvaque et al. [2017] find that men trust the ECB more, but Hayo and Neuenkirch [2014] report findings from a German household panel suggesting that women trust the ECB more, consistent with our results.

Specifications (2) and (7) indicate that households originating from the East exhibit a 0.3 unit lower trust in the ECB compared to those from the West (not shown). This aligns with existing literature on interpersonal trust and trust in political institutions, which often portrays lower levels of trust in East Germany compared to West Germany. Campbell [2012] and Rohrschneider and Schmitt-Beck [2002] suggest that socialist ideals persist more strongly in the East, while Pollack [2007] attributes differences in trust to negative experiences during the transformation process following unification and feelings of unequal treatment compared to West Germans. Additionally, differences in economic performance between the West and the East are also cited as contributing factors (Campbell 2004). Including the "East (1989)" variable results in the omission of approximately 300 observations, as younger participants are excluded. Therefore, we opt not to include this variable in subsequent models.

Trust in political institutions Trust in political institutions enters the equation significantly and positively, with a large coefficient. A one standard deviation increase in trust in political institutions raises trust in the ECB by 1.15 units. This finding corroborates Figure 1 and previous research demonstrating a positive relationship between trust in the ECB and trust in other European institutions (Ehrmann et al. 2013; Brouwer and de Haan 2022; Farvaque et al. 2017), or a composite measure of trust in the Bundestag, UN, and IMF (Hwang et al. 2023).

Perceived trustworthiness of the ECB and generalized trust Turning to the variables that central banks commonly focus on, our results demonstrate that households who value the past record of price stability and decisions based on rules, technical analyses, scientific evidence, and facts tend to trust the ECB more. The effects are highly significant and substantial: a one standard deviation increase in the importance households attribute

to the ECB's maintainance of stable prices and to technocratic policymaking enhances trust in the ECB by 0.43 and 0.30 units, respectively.

Furthermore, we observe that households who consider the amount of information provided by the ECB regarding the state of the economy and its actions to be important tend to trust the ECB less. This finding diverges somewhat from the current direction of the literature, which suggests that an excessive amount of information (e.g., through speeches) may decrease public trust (Hwang et al. 2023), or that the complexity of the information provided may hinder understanding (Kryvtsov and Petersen 2021; Gloeckler and Mee 2022). Criticism has also been directed towards central banks for communicating a lot because central banks have committed to what is beyond their means (Fratzscher 2022). This would suggest that the public may interpret an abundance of information as a negative signal, leading them to question if something is amiss and prompting the ECB to provide further explanations or justifications. However, our estimates thus far suggest that the ECB could potentially enhance its trustworthiness by providing more, rather than less, information about the state of the economy and its actions. Nonetheless, the coefficient associated with "Provides sufficient information" is small, and we will explore this finding in more depth later.

Turning to the more holistic variables (additional values and generalized trust), we observe that households who appreciate the ECB's consideration of the overall picture tend to trust the ECB more, with a large and highly significant estimated coefficient comparable to that of the ECB's past performance in maintaining stable prices. Integrity of the ECB president and senior management, as well as honest communication, are also significant regressors with negative coefficients, indicating lower trust when these aspects matter to households. "Acts on broader concern" also enters with a negative sign. It is not statistically significant in specification (5), but turns marginally significant when we include the "East (1989)" dummy variable in specification (7). These findings suggest that households for whom these aspects are important tend to trust the ECB less. Individual magnitudes are small compared to those of other coefficients - trust in the ECB is between 0.07 and 0.18 units lower in response to a one standard deviation rise in these variables -, but the sum of the coefficients is not.

Regarding generalized trust, households who find it rather easy to trust others also exhibit higher trust in the ECB. The coefficient is significant, but rather small. A one standard deviation increase in generalized trust enhances trust in the ECB by 0.14 units. To ascertain how the impact of generalized trust on trust in political institutions compares with that on the ECB, we regress trust in political institutions on expected growth, socio-demographic

variables, "Find it easy to trust," and "Achieved price stability in the past" (results are not shown). First of all, we find that the estimated coefficient for the past performance of the ECB regarding price stability is 0.17 and statistically significant, suggesting that households understand that if one policy performs well, it creates an environment conducive to the success of other policies. Furthermore, the coefficient for generalized trust is highly significant at 0.40, much larger than in the model explaining trust in the ECB. This suggests that generalized trust plays a more substantial role in fostering trust in political institutions more generally than in the ECB. However, it is important to exercise caution as the model explaining trust in political institutions includes fewer regressors compared to the model explaining trust in the ECB and the adjusted R^2 is at 0.30. We next omit trust in political institutions from our baseline model, see specification (6). The coefficient on generalized trust is almost four times larger than in the baseline specification, suggesting that trust in political institutions mediates between generalized trust and trust in the ECB.[29]

There might also be a concern that expected growth is endogenous with respect to trust (e.g. Christelis et al. 2020, Brouwer and de Haan 2022), which we address in two ways. First, we drop expected growth from our baseline model, see specification (8). Coefficients and significances of the trustworthiness measures and generalized trust (the variables we are interested in) barely change. Second, we replace expected growth with its lag. The number of observations reduces to 2,194 households. Results (not shown) remain broadly the same. As another robustness check we re-estimate the baseline regression, applying post-stratification weights to the individual observations (specification (9)). The weights are taken from the survey (BOP-HH 2024). Individuals which are over-represented in the survey compared to the German population along the dimensions of gender, age, education and region are down-weighted, and *vice versa* for under-represented individuals. Results are barely changed, with the exception of "Provides sufficient information", which turns insignificant. Finally, an ordered probit model (specification (10) in Table 3) confirms most of our baseline results.[30]

[29] This is what is called a mediation model (see Kril et al. 2016, citing Baron and Kenny 1986), which "attempts to identify what underlies an observed relationship between predictor and predicted variable via the inclusion of a third explanatory variable, known as a mediator variable, by positing a causal chain in which the predictor variable affects the mediator that, in turn, affects the predicted variable."

[30] Coefficient estimates from the ordered probit model and the OLS regressions are, of course, not comparable.

5 Additional analyses

5.1 Factor structure underneath trustworthiness measures?

The trustworthiness measures exhibit some level of correlation (although there is no indication of multicollinearity, as demonstrated in Appendix A.2). To gain a clearer understanding, we conduct a factor analysis on the seven regressors associated with the perceived trustworthiness of the ECB using maximum likelihood (ML), retaining three factors. The data display a strong factor structure, with the first ML factor explaining 91% of the variation in the data summarized by three factors, while the second and third factors account for only 7% and 2%, respectively. Our focus is primarily on the first two factors. Upon examination, all variables load highly and positively on the first factor, while the signs of the loadings of the second factor replicate those observed in our regression. To further refine our analysis, we rotate the factors using the varimax method, the simplest orthogonal rotation technique, which maximizes the variances of the squared raw factor loadings across variables for each factor. The first factor now explains 53% of the variance, the second factor 43%, and the third factor less than 4%. See Table 4 for details.

While factors are not structurally identified, we can still offer a tentative interpretation based on the loadings. The first factor exhibits the highest loadings (above 0.7) for "Honest communication" and "Integrity," suggesting a strong association with these values. Additionally, this factor is positively correlated with "Acts on broader concern" and "Provides sufficient information." Thus, the first factor appears to represent perceived trustworthiness of the ECB in terms of values. Conversely, the second factor is most closely linked to "Technocratic," with "Achieved price stability in past" also loading positively and highly on this factor. This indicates a focus on competence. The second factor also shows a strong and positive correlation with "Accounts for the overall picture," which households seem to categorize as competence (but necessitates a particular mindset, as previously discussed).

We then replace individual measures of perceived trustworthiness in the regression with the two factors, as shown in Table 5, specification (11). We observe that the value factor enters significantly with a negative coefficient, while the competence factor enters significantly with a positive coefficient. This aligns with our earlier findings based on individual measures, indicating that those who state that values matter for their trust in the ECB tend to trust it less, and *vice versa* for competence. The use of factors provides a clearer understanding, as they are uncorrelated compared to the (mildly) correlated individual measures. Upon comparison, we note that the coefficient on the second (competence) factor is roughly four

times larger in absolute terms than the coefficient on the first (value) factor.

Table 4: Loadings associated with the first 2 factors extracted from sets of measures of perceived trustworthiness of the ECB

	Factor 1 (raw)	Factor 2 (raw)	Factor 1 (v)	Factor 2 (v)	Factor 1 (p)	Factor 2 (p)
Achieved price stability in past	0.573	0.234	0.264	0.546	0.030	0.567
Technocratic	0.740	0.321	0.360	0.728	0.090	0.753
Provides sufficient information	0.728	-0.096	0.596	0.397	0.550	0.181
Integrity	0.739	-0.231	0.714	0.307	0.777	-0.001
Honest communication	0.832	-0.162	0.741	0.421	0.752	0.134
Accounts for overall picture	0.785	0.172	0.471	0.639	0.261	0.571
Acts on broader concern	0.739	-0.123	0.610	0.381	0.562	0.151
Explained variance proportion	0.912	0.070	0.529	0.434		

Notes: raw: raw maximum likelihood factors. v: rotated factors using the varimax method. p: rotated factors using the promax method.

We conduct two additional robustness checks. First, we rotate the factors using the promax method, which might provide more interpretable factors. However, with the promax rotation, the factors can be correlated, and indeed, the correlation coefficient for the first two factors is 0.72. Despite this correlation, the factors retain similar interpretations as with the varimax rotation, as shown in Table 4. In the regression model, the coefficient estimates increase substantially in absolute terms with the promax rotation, and the gap between them roughly halves, as seen in specification (12). Nevertheless, the main findings and conclusions remain consistent.

We proceed by interacting the two varimax factors with the socio-demographic variables and expected economic growth (not shown) to explore whether the relationship between perceived trustworthiness of the ECB and trust in the ECB varies across specific household groups. This investigation is pertinent as central banks contemplate if and how they should target particular socio-demographic groups, and significant interaction terms would offer valuable insights in this regard. Our analysis reveals that the positive association between the competence factor and trust in the ECB is attenuated for females. However, all other interaction terms are statistically insignificant, indicating that the estimated relationships between perceived trustworthiness of the ECB and trust in the ECB cannot be clearly linked to specific socio-demographic groups.

In summary, the factor analysis reinforces our conclusions derived from individual trustworthiness measures: households who report that competence matters for their trust in the ECB

tend to exhibit higher trust in the ECB. By contrast, those who report that values, particularly integrity and honest communication, matter for their trust in the ECB, demonstrate lower levels of trust in the institution.

Table 5: Regression analysis III: common factors underlying perceived trustworthiness measures

Trust	(11)	(12)	(13)	(14)	(14')
Expected economic growth	0.482***	0.482***	0.423***	0.452***	
	(0.04)	(0.04)	(0.04)	(0.04)	
Female	0.219***	0.217***	0.172***	0.173***	
	(0.06)	(0.06)	(0.07)	(0.06)	
Age	0.013***	0.013***	0.014***	0.012***	
	(0.00)	(0.00)	(0.00)	(0.00)	
Income	0.025*	0.025*	0.025*	0.025*	
	(0.01)	(0.01)	(0.01)	(0.01)	
Education	-0.010	-0.010	-0.004	-0.005	
	(0.01)	(0.01)	(0.02)	(0.02)	
Trust in political institutions	0.418***	0.417***	0.389***	0.408***	
	(0.01)	(0.01)	(0.02)	(0.02)	
Factor 1	-0.191***	-0.699**			
	(0.04)	(0.07)			
Factor 2	0.815***	1.181***			
	(0.05)	(0.08)			
Achieved price stability in past			0.195***	-0.012	[-0.021]
			(0.02)	(0.03)	
Technocratic			0.134***	-0.036	[-0.053]
			(0.02)	(0.04)	
Provides sufficient information			-0.032*	-0.198***	[-0.309]
			(0.02)	(0.03)	
Integrity			-0.051***	-0.202***	[-0.352]
			(0.02)	(0.03)	
Honest communication			-0.075***	-0.226***	[-0.313]
			(0.02)	(0.03)	
Accounts for overall picture			0.169***		
			(0.02)		
Acts on broader concern			-0.016	-0.208***	[-0.322]
			(0.02)	(0.03)	
Find it easy to trust others	0.062***	0.062***	0.060***	0.063***	
	(0.02)	(0.02)	(0.02)	(0.02)	
Common mean				0.227***	[0.427]
				(0.02)	
Constant	1.009***	1.012***	-0.893***	-0.341	
	(0.20)	(0.20)	(0.22)	(0.23)	
Observations	3793	3793	3428	3605	
R^2 adj.	0.466	0.466	0.457	0.437	

Notes: See notes to Table 3, specifications (1)-(9). Factors 1 are highly correlated with values. Factors 2 are highly correlated with competence. (11) and (12) refer to factors rotated using the varimax and promax method, respectively. In (13) we have only keep households in the sample which do not choose an same category for all trustworthiness measures. (14) refers to a specification where we subtracted the common mean from the measures prior to the estimation. "Accounts for overall picture" was omitted because of collinearity. In (14') we report the unit change in trust in the ECB in response to a change of one standard deviation in the variables of interest.

5.2 Investigating into the halo effect

Households provided remarkably similar responses regarding what factors mattered for their trust in the ECB (Figure 4). This phenomenon could be interpreted as a "halo effect," a cognitive bias, where a general evaluation or impression influences the assessment of individual components related to that impression. Kril et al. [2016] have suggested that this effect is a manifestation of implicit trust. To investigate this possibility, we re-estimate our baseline regression, excluding households that selected the same category for all perceived trustworthiness statements (specification (13)). Approximately 400 households are dropped from the baseline sample of 3,793 respondents, yet the results remain broadly robust to their exclusion.

Next, we subtract the common mean from the perceived trustworthiness measures and re-estimate the model in specification (14), including the demeaned regressors along with the common mean in the regression. The common mean, representing the general impression of the ECB, emerges as highly significant, in line with Angino and Secola [2022]. In contrast, the two competence measures lose significance. "Accounts for the overall picture" was omitted by Stata due to collinearity (and the regressor matrix not being full rank anymore). When we omit another variable, "Accounts for the overall picture" no longer enters the regression significantly, similar to the technical competence measures. Integrity and honest communication are still significant, and (de-meaned) "Action on broader concern" now becomes highly significant, something that was masked before.[31] (14') informs about economic significance. A one standard deviation increase in the common mean raises trust in the ECB by 0.43 units. The effects of the competence measures shrink to negligible, whereas those of the value measures all increase to over 0.3 units in absolute terms. Hence, the common mean captures an overall impression which extends to both performance and technocratic policymaking as well as shared values.

Please note that the mean value is relatively high for most households, averaging at 6.82. This indicates that the European Central Bank (ECB) currently benefits from a halo effect: people generally have a favorable impression of the ECB and endorse its actions.[32] Implicit trust is often associated in literature with lower-level instincts, impulses, or emotions. Relying solely on these can be risky and may quickly lead to a loss of trust in the institution. In

[31] In order to understand whether participants' education level significantly impact the results, we re-estimate the model, separating participants into two groups: those with a university degree (bachelor's and higher) and those without. The results from both groups align closely with the aggregate findings.

[32] This may also explain why the "whatever it takes" statement by former ECB President Draghi was effective during the peak of the European sovereign debt crisis (Draghi 2012). It resonated with people's implicit trust and is today considered as the turning point in the crisis.

the long run, trust in the ECB will be maintained through a combination of its competence, adherence to values, and positive experiences people have with the institution. This will not only enhance reason-based trust but also deepen intuitive trust - a facet that has been somewhat overlooked in the literature due to its emphasis on values and the essence of being. Nevertheless, fostering deeper trust, which can also enhance implicit trust, is always advisable.

5.3 Other aspects of the "ability to trust in general"

In this section, we aim to enrich our understanding of "generalized trust". "Find it easy to trust others" (statement (h)) served as our core measure of people's ability to trust, and we now compare it with other related measures. These additional measures encompass trust in life, self-trust, fears, and compensation mechanisms which serve to avoid these fears (and uncertainty and relations) and which prevent trust. Rooted in humanistic psychology and a systems perspective of the mind, these concepts offer complementary insights into the multifaceted nature of trust, and they may equally influence trust in political institutions including central banks. We anticipate that participants' responses may vary based on their interpretations, personal experiences, and willingness to acknowledge these nuanced aspects of (lack of) trust. Through this exploratory analysis, we aim to shed light on the broader landscape of trust and individuals' capacity to trust.

We presented participants from Wave 42 of the survey with the following question:
People's ability to trust / generalized trust. "On a scale from 0 to 10, to what extent do the following statements describes you?" where 0 refers to "Not at all" and 10 refers to "Fully".
(j) I take things as they come. **Take things as they come**
(k) I tend to rely on my own intuition. **Rely on my own intuition**
(l) I normally like to plan and be in control of the situation. **Like to plan and be in control**
(m) I tend to rely on statistics or scientific knowledge. **Rely on statistics or science**
(n) I tend to consider myself an anxious person. **Consider myself an anxious person**

Table 6: Regression analysis IV: varying measures associated with people's ability to trust

Trust	(15)	(16)	(17)	(18)	(19)	(20)
Expected economic growth	0.472***	0.475***	0.470***	0.472***	0.476***	0.461***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Female	0.208***	0.243***	0.210***	0.205***	0.208***	0.240***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Age	0.012***	0.013***	0.012***	0.012***	0.012***	0.015***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.026**	0.025*	0.028**	0.027**	0.027**	0.024*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	-0.002	-0.018	-0.008	-0.002	-0.004	-0.020
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
Trust in political institutions	0.434***	0.408***	0.432***	0.432***	0.435***	0.387***
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)
Achieved price stability in past	0.173***	0.175***	0.173***	0.171***	0.172***	0.176***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Technocratic	0.122***	0.103***	0.119***	0.120***	0.121***	0.103***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Provides sufficient information	-0.048***	-0.048***	-0.047**	-0.047**	-0.048***	-0.044**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Integrity	-0.047***	-0.046***	-0.046***	-0.047***	-0.047***	-0.045***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Honest communication	-0.062***	-0.063***	-0.063***	-0.064***	-0.063***	-0.063***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Accounts for overall picture	0.168***	0.166***	0.169***	0.169***	0.169***	0.164***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Acts on broader concern	-0.027	-0.022	-0.027	-0.026	-0.026	-0.023
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Find it easy to trust others						0.049***
						(0.02)
Like to plan and be in control	-0.033*					-0.020
	(0.02)					(0.02)
Rely on statistics or science		0.069***				0.064***
		(0.02)				(0.02)
Rely on my own intuition			-0.044***			-0.047***
			(0.02)			(0.02)
Take things as they come				0.030**		0.028**
				(0.01)		(0.01)
Consider myself an anxious person					-0.001	-0.005
					(0.01)	(0.01)
Constant	-0.396	-0.854***	-0.306	-0.809***	-0.623***	-0.638**
	(0.24)	(0.21)	(0.24)	(0.22)	(0.21)	(0.28)
Observations	3793	3793	3793	3793	3793	3793
R^2 adj.	0.471	0.474	0.471	0.471	0.470	0.477

Notes: See notes to Table 3, specifications (1)-(9).

(j) reflects the ability to trust in life in general,[33], as it it or as it unfolds, and (k) the ability to trust oneself. On the other hand, (n) captures fear (or anxiety, which we use here synonymously) which is incompatible with trust. (l) represents mechanisms aimed at avoiding uncertainty (and making ourselves vulnerable). One mechanism is to control, and a way to control is by making plans. There is nothing wrong with making plans. However, when plans are made primarily to exert control, especially in excess, it often indicates a deficiency in trust. Moreover, we may turn to statistics and scientific data (m) when we anticipate that they will aid us in forming a more accurate assessment of the trustworthiness of individuals or institutions. However, the reliance on factual information and technical data can also signify a lack of trust, serving as a compensatory mechanism.[34] The underlying motivation for households to utilize (or abstain from using) statistics and science is not clear *a priori*. The sign of the correlation with "Find it easy to trust others" is also ambiguous for (k). Some respondents may realize that a strong trust in themselves (or their intuition) correlates with a robust trust in others and life in general. The other part might interpret the statement as: "I better rely on myself, rather than on others."[35] Consequently, we anticipate an unequivocally positive correlation between (j) and individuals' capacity to trust, including our core measure (h). Conversely, (l) and (m) are likely to exhibit negative correlations. The relationships for (k) and (m) remain uncertain and contingent upon individual experiences and perspectives.

These measures demonstrate generally low correlations, as outlined in Appendix A.3, even in relation to our primary interpersonal trust metric, "Find it easy to trust others". Subsequently, we substitute "Find it easy to trust others" with each of these supplementary measures in our baseline regression (5). Notably, "Like to plan and be in control" and "Take things as they come" exhibit significant entries into the regression, with negative and positive coefficients, respectively (Table 6). Hence, there is some consistency across

[33]When Issing [2000], in his statement which we cited in Section 2.1, referred to "trust in the future", he may have meant something similar.

[34]This dynamic can be understood as follows: "the less confident I feel in my ability to trust another person (not necessarily due to their lack of trustworthiness, but perhaps because I am unable to resonate, attune or be present), the more inclined I am to seek out factual information and data about them. Subsequently, I will base my decision on whether I get vulnerable and trust or not on this gathered information."

[35]This tendency often reflects avoidant attachment, a pattern stemming from a caregiver's physical or emotional absence. In such cases, the child learns to fend for themselves, projecting an illusion of independence to their environment (and themselves). This inclination suggests a reduced propensity for trust in general. Individuals who have undergone such experiences often fail to recognize that, deep down, they lack trust in themselves. Instead, they assert unwavering self-reliance, masking the suppression of painful emotions stemming from difficult early experiences. These emotions become enshrined in their implicit memory, shielded from conscious awareness. Consequently, what they report may diverge from their true feelings, as they may either be unaware of their inner discord or conform to societal expectations.

these measures, including our core generalized trust measure. However, "Consider myself an anxious person" proves insignificant, possibly due to hesitance to admit anxiety among respondents. "Rely on my own intuition" yields a highly significant negative coefficient, implying a predisposition towards self-reliance, indicative of an avoidant attachment pattern or an emphasis on autonomy (falsely called "liberal" by some). Furthermore, individuals who indicate a propensity to rely on statistics or science demonstrate elevated trust in the ECB, aligning with the positive regression coefficient of "Technocratic." This result suggests that households employ statistical and scientific analysis to assess trustworthiness, reaffirming the importance of technical competence. Finally, we incorporate all variables associated with trust capability simultaneously into the regression (Table 6, specification (20)). While the overall findings are largely upheld, there is some attenuation in significance.

We further observe that the proportion of households exhibiting intermediate to high levels of interpersonal trust, consistent across measures (h), (j), (l) and (m), is notably small, encompassing a mere 1% to 5% of all households, as detailed in Appendix A.3. This group comprises relatively fewer elderly individuals. This observation may be linked to the historical context of the survey participants, who primarily hail from Germany. Many older individuals have firsthand experiences or are descendants of those who experienced significant upheavals such as World War II (or even World War I). Such traumatic experiences can be transmitted across generations but tend to attenuate over time, unless re-traumatization takes place. The finding is also not inconsistent with the increase in interpersonal trust in Germany due to a decline in the proportion of individuals with direct experiences of World War II, as shown in Figure 1. Additional factors such as overall economic and political stability, social cohesion and Germany's cultural emphasis on honesty, reliability, and social responsibility may have played a role as well. Scholars such as Alesina and La Ferrara [2002], Putnam [2000], and Uslaner [2002] have shown that such factors matter for generalized trust.

Overall, our findings reveal a diverse and multifaceted understanding of trust among households, underscoring its complexity and the limited depth of comprehension by the households - an interesting finding in itself. One explanation of this observation is the prevailing mechanical (Newtonian) worldview. In particular, there remains a significant gap among households in understanding the interplay between trust in others, trust in life, trust in oneself, and the defense mechanisms used to avoid uncertainty and interpersonal connections. Future research effort could focus on gaining a deeper insight into the various dimension of generalized trust and the perspectives individuals might hold (stemming from their past experiences) regarding trust. It would be interesting to not only explore how these views

interact with institutional trust, but also how they can be effectively elicited within surveys.

5.4 Do our findings for trust extend to monetary policy credibility?

In this section, we analyze the extent to which our findings regarding trust extend to the ECB's monetary policy credibility. Credibility is defined as the negative of the absolute difference between households' long-term inflation expectations (π^e) and the ECB's inflation target of 2%. We pool both 3- and 5-year-ahead inflation expectations, truncating long-term inflation expectations reported by households from -5% to 20% and, in this way, excluding extreme answers.[36] We then re-estimate our baseline model, replacing trust in the ECB with credibility, and later replacing individual measures of perceived trustworthiness with factors rotated using the varimax method.

$$Credibility_i = \kappa + \lambda' X_i + u_i \tag{2}$$

where λ denotes the n-dimensional coefficient vector. We estimate Equation 2 with an ordinary least squares regression and robust standard errors. Our dependent variable is skewed to the right and bounded at zero (with 7% of the observations being equal to zero). We address this issue by estimating a tobit model. Alternatively, we transform our credibility variable to one that is approximately normally distributed using the zero-skewness log transform. We then use the negative of the transformed variable as the dependent variable in our OLS regression. In both cases, our key findings are not altered compared to the linear regression model, and we show in the remainder of the section only the least squares estimates.

Results are presented in Table 7. In specification (21), we only include trust in the ECB (together with socio-demographic characteristics, expected growth, and trust in political institutions). Trust is significantly and positively related to credibility. The coefficient is statistically significant: a one-unit rise in ECB trust boosts credibility by 0.173 percentage points. Alternatively, a one-standard deviation increase in ECB trust results in a 0.4 percentage point rise in credibility (or a 0.4 percentage point change in long-term inflation expectations towards the target). We then replace trust in the ECB with its determinants. The adjusted R^2 is lower than for the baseline trust regressions, at 0.15, suggesting that credibility is less well explained with our model than trust in the ECB. This is not surprising given that we asked survey participants what matters for their trust, not for their assessment

[36] This is because half of the participants are asked for their 3-years ahead inflation expectations, the other half for their 5-years ahead inflation expectations.

of the ECB's credibility. The signs of the estimated coefficients are almost identical to those from the trust regressions, with the exception of gender. Women are found to consider the ECB less credible than men (whereas we found them to trust the ECB more). Respondents with higher income and higher education find the ECB significantly more credible. An interpretation of the finding for education is that factual, formal knowledge is more helpful when it comes to forming inflation expectations, and that this is what education captures. This seems less or not relevant for trust, which requires other abilities.

When we include determinants of trust in the ECB instead of trust in the ECB (specifications (22) and (23)), we find that the estimated coefficients on "Technocratic" and "Accounts for the overall picture" are positive and significant. Integrity and transparency (both honest communication and information provision) are no longer significant regressors. However, those who state that action on a broader concern matters for their trust in the ECB consider the ECB less credible. "Achieved price stability in the past" does not enter the equation significantly. This result and the previous one appear surprising at first glance. One reason could be that the survey was conducted at a time when inflation was high: the HICP was at 5.5% (6.8%) in June 2023 in the euro area (Germany), down from 10.6% (11.6%) in October 2022, well above the medium-term inflation target. High inflation may have reduced the correlation between valuing past performance based on price stability and long-term inflation expectations. Instead, households may have placed greater importance on the ECB's concern for their overall well-being, which tends to matter more in high inflation episodes. This explanation is in line with Louie et al. [2023], for example, who demonstrate that inflation-related hardships can impact mental health, which may necessitate more immediate care and concern, rather than the performance in terms of price stability. We further find that factor 2 (which we have associated with competence) is highly significant, while factor 1 (which we have associated with values) is only marginally significant. The coefficient on generalized trust is positive and significant.

We proceed by adding trust in the ECB to the regression model (specifications (24) and (25)). We find that trust mediates the relationship between trustworthiness of the ECB and credibility with respect to both competence and values. However, the magnitudes of the coefficients and their significance levels tend to decrease in this mediation model.

Table 7: Regression analysis VI: determinants of monetary policy credibility

Credibility	(21)	(22)	(23)	(24)	(25)
Expected economic growth	0.395***	0.471***	0.470***	0.395***	0.394***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Female	-1.107***	-1.055***	-1.072***	-1.087***	-1.106***
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Age	0.013***	0.015***	0.016***	0.013***	0.014***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.102***	0.102***	0.104***	0.098***	0.100***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Education	0.066***	0.054**	0.058***	0.056**	0.060***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Trust in political institutions	0.137***	0.188***	0.187***	0.122***	0.122***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Trust in the ECB	0.173***			0.158***	0.155***
	(0.02)			(0.03)	(0.03)
Achieved price stability in past		0.001		-0.025	
		(0.02)		(0.02)	
Technocratic		0.092***		0.072**	
		(0.03)		(0.03)	
Provides sufficient information		-0.034		-0.027	
		(0.03)		(0.03)	
Integrity		0.016		0.023	
		(0.02)		(0.02)	
Honest communication		-0.017		-0.006	
		(0.03)		(0.03)	
Accounts for overall picture		0.069**		0.043	
		(0.03)		(0.03)	
Acts on broader concern		-0.070***		-0.066***	
		(0.02)		(0.02)	
Factor 1			-0.104*		-0.075
			(0.06)		(0.06)
Factor 2			0.260***		0.135*
			(0.07)		(0.07)
Find it easy to trust others		0.052**	0.053**	0.044*	0.044*
		(0.02)	(0.02)	(0.02)	(0.02)
Constant	-7.220***	-7.538***	-7.111***	-7.415***	-7.265***
	(0.35)	(0.38)	(0.35)	(0.38)	(0.36)
Observations	3654	3654	3654	3654	3654
R^2 adj.	0.160	0.154	0.153	0.163	0.161

Notes: See notes to Table 3, specifications (1)-(9). Credibility is defined as $-abs(\pi^e - 2)$, where π^e denotes either 3-year or 5 year-ahead inflation expectations and 2% is the ECB's inflation target. Factors 1 and 2 refer to factors rotated with the varimax method.

In summary, our findings suggest that many of the insights gleaned regarding trust in central banks also extend to monetary policy credibility. However, it appears that values such as integrity and honest communication hold less sway over credibility than they do over trust. This observation is not entirely surprising, given the technical intricacies involved in monitoring and managing inflation expectations. Unlike trust, which, according to some definitions, is a state of being and has relational aspects, credibility in the context of inflation is more closely linked to quantitative future forecasts. The fact that values play less of a role for credibility does not diminish their overall significance. While our findings suggest that factors like integrity and transparency may have a more limited impact on credibility, they remain crucial for central banks. It is important to recognize that trust matters for central banks not only because it helps to anchor inflation expectations but also because it plays a vital role in central banks' legitimization and independence.

6 Discussion and policy implications

Our analysis has delved into whether factors beyond conventional central banking considerations are relevant for trust in the ECB. This research was partly inspired by recent statistics showing that that less than 50% of European citizens currently express trust in the ECB, broadly aligning trust levels in other political institutions.[37] We discovered, perhaps unsurprisingly, that households valuing positive outcomes like price stability and technocratic decision-making tend to have greater trust in the ECB. Conversely, those who believe that values such as integrity, transparent communication and broader concern are crucial for their trust in the ECB tend to express lower levels of trust in the institution. Trust in the ECB also hinges on trust in political institutions more generally. Moreover, individuals with limited trust in others also exhibit significantly lower trust in the ECB. Although the magnitude of the effect was found to be small, it notably increases once trust in political institutions is excluded from the model. This suggests significant indirect effects of generalized trust on trust in the ECB, via trust in political institutions more generally.

Our key policy implication emerges from these findings: solely focusing on the ECB's primary objectives and strict adherence to scientific principles, rules, analyses, and facts might not be enough to bolster public trust. To enhance public trust further, the ECB could emphasize their shared values with the public, in addition to its efforts and performance in

[37] Appendix A.1 also highlights significant variability in trust levels in institutions and generalized trust across euro-area countries. It would be interesting to extend our study to households from euro-area countries other than Germany to examine the relation between generalized trust, trust in the ECB and trust in political institutions for those countries, and implications of trust heterogeneity for common monetary policy.

achieving price stability and adherence to technical standards.

This discussion raises important questions that still need to be addressed. First, what are the specific values and mindsets under consideration? While we have explored some (such as integrity, transparency including honesty, broad concern and scope), and have already expanded beyond the typical central bank focus on integrity and transparency in the communication about economic conditions and central bank actions, other values like authenticity, kindness, empathy, presence, and resonance might also be relevant. Second, how well do central banks embody these values? Third, what strategies can be employed to effectively communicate that central banks adhere to these values to the public? Moreover, the discrepancy between households' perceptions of integrity and the formal independence of central banks warrants further investigation. Despite legal safeguards for central bank independence, recent research suggests that even formally independent central banks may succumb to political pressure (Bianchi et al. 2023, Drechsel 2023) or may stray from their mandates for ideological reasons (Dentler 2019). This underscores the need for a deeper understanding of how to preserve integrity within central banking institutions, beyond legal frameworks alone.

There is likely greater leverage in emphasizing values further, rather than competence, considering that central banks have largely mastered their technical capabilities. Moreover, it is reasonable to anticipate a growing emphasis on values and deeper aspects of trust by the public in the future. Economists and central bankers are gradually recognizing this shift. This change is partly due to acknowledging the limitations inherent in the current approach, which primarily focuses on achieving price stability through technocratic policymaking, especially given the complex challenges we face today. However, this shift also reflects a deeper undercurrent that has often been overlooked. Central banking is grounded in modern economics which, like much of science, has largely emerged from a Newtonian worldview - a mechanical perspective that prioritizes details, facts, and linear, mechanistic interactions between entities. Ethical values and deeper psychological dimensions play a minimal role in this framework. Philosophers like Wilber suggest that societies evolve towards more integrated and holistic mindsets that embrace ethical values, compassion, and a broader awareness. While psychology as a discipline is already experiencing this transformation, it is probable that other scientific fields and policy areas will follow. To support such an evolutionary shift, economists might need to reconsider their understanding of preferences and expectations. Moving away from a predominant focus on behavior and factual information towards a more serious consideration of ethical values and experiences could facilitate this change.

Given the modest, but significant role of generalized trust and the high importance of trust in political institutions more generally in shaping trust in central banks like the ECB, there exists limited, though not insignificant, room for central banks to influence public trust. As key players in the political arena, central banks possess the capacity to engage in - and potentially lead - a broader societal discourse on the underlying factors contributing to the ongoing political crisis, which extends beyond central banks. Even central banks and trust in central banks will ultimately not remain unaffected by phenomena such as polarization, populism, or social unrest and resulting effects on trust in political institutions in general. While some argue that central banks can set themselves apart through technocratic policy making, another possibility, supported by our results, might be maintaining the highest ethical standards. There remain open questions about the most effective strategies for central banks to navigate these challenges and maintain public trust in an increasingly complex political landscape.

A significant aspect (also for political institutions more generally) is the widespread challenge in trusting each other, a phenomenon rooted in negative past experiences - a realization increasingly dawning on economists. Our minds are fluid and adaptable, shaped by past experiences yet capable of transformation. Policy institutions wield considerable influence over the environments people inhabit and the experiences they undergo. Trust, a delicate element emerging from relationships, can be eroded or restored through relationships. Central banks are actively seeking innovative, more relatable methods of engaging with the public. However, achieving genuine connection requires central bankers to possess qualities such as resonance, attunement, presence, congruence, authenticity, kindness and compassion - essential prerequisites for building trust (as discussed in Section 2.2). While central bankers devote significant effort to enhancing their technical expertise and factual knowledge, incorporating mindfulness and self-reflection into their training can equip them with additional skills. These practices enable central bankers to foster new, positive experiences among the public that supplant old, negative ones, thereby rebuilding trust. Such an approach will also underscore a commitment to shared values, reflecting a broader shift in mindset. Research economists in central banks (and elsewhere) can support this shift by integrating insights from diverse disciplines such as political science, humanistic psychology, and systems theory into their toolkits.[38]

[38]The bigger vision is what trauma experts have long advocated for: the cultivation of a trauma-informed culture across various facets of society, spanning education, healthcare, and beyond. A trauma-informed approach entails recognizing the pervasiveness of trauma, understanding its profound impact on individuals, and actively striving to create environments that foster safety, transparency, collaboration, empowerment, and community (see King 2021). Ideally, economists (and central bankers) will one day play an important role in shaping a trauma-informed approach within the economic system, economic policy, and policy

Humans, i.e. citizens as well as central bankers, are not without flaws (as stressed by Issing in the quote we provided earlier). However, overlooking their potential in policy making poses risks of its own. Embracing a more holistic approach - one that fosters values and genuine connections between policy makers and citizens - can unlock vast untapped possibilities. It is important to note that advocating for values and introspection does not mean sidelining science, rules, or facts. Indeed, technocratic policy making has played a crucial role in bolstering trust in central banks. A robust framework that integrates rules, science, and data, coupled with safeguards for central bank independence and inclusive decision-making processes, is essential to mitigate the effects of human imperfections. By embracing diversity in perspectives, fostering shared responsibilities, and upholding transparency, such an approach can forestall undesirable outcomes. In essence, our paper advocates for a comprehensive view of central bank trust - one that encompasses all facets.

communication. What it means to adopt such an approach is outlined in Eickmeier [2024].

References

Monetary Policy Framework Renewal — December 2021. *Bank of Canada*, 2021.

R. Agarwal. The Fear Economy: A Theory of Output, Interest, and Safe Assets. *IMF Working Paper*, 2022/175, 2022.

A. Al Gore. This is the moment to take on the climate crisis. Ted talk, 2022.

A. Alesina and E. La Ferrara. Who Trusts Others? *Journal of Public Economics*, (2): 207–234, 2002.

H. Almaas. *Elements of the Real in Man, Diamond Heart, Book One*. Shambala Publications, Boston, MA, 1987.

S. Angino and S. Secola. Instinctive versus reflective trust in the European Central Bank. *ECB Working Paper*, (2660), 2022.

C. Arnsperger. *Full-Spectrum Economics. Toward an Inclusive and Emancipatory Social Science*. Routledge, 2012.

R.M. Baron and D.A. Kenny. The Moderator–Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6):1173–1182, 1986.

B. Bernanke. Inaugurating a new blog. *https://www.brookings.edu/blog/ben-bernanke/2015/03/30/inaugurating-a-new-blog/?msclkid=303c5319d0f511ec94095001a638b34b*, 2015.

D. Bholat, N. Broughton, Ter Meer J., and E. Walczak. Enhancing central bank communication using simple and relatable information. *Journal of Monetary Economics*, 108:1–15, 2019.

F. Bianchi, T. Gomez-Cramb, T. Kindc, and H. Kung. Threats to central bank independence: High-frequency identification with twitter. *Journal of Monetary Economics*, 135:37–54, 2023.

A.S. Blinder, M. Ehrmann, J. De Haan, and D. Jansen. Central bank communication with the general public: Promise or false hope? *De Nederlandsche Bank Working Paper*, 2022.

BOP-HH. Bundesbank Online Panel – Households (BOP-HH), Summary document. *Deutsche Bundesbank, Research Centre*, March, 2024.

S. Bowles and W. Carlin. Shrinking capitalism. *AEA Papers and Proceedings*, 110:372–77, May 2020.

M. Brezzi, S. Gonzalez, and M. Nguyen, D. an Prats. An updated OECD framework on drivers of trust in public institutions to meet current and future challenges. *OECD Working Papers on Public Governance*, (48), 2021.

N. Brouwer and J. de Haan. Trust in the ECB: Drivers and Consequences. *European Journal of Political Economy*, 74:102262, 2022.

D. Bursian and E. Faia. Trust in the monetary authority. *Journal of Monetary Economics*, pages 66–79, 2018.

W.R. Campbell. The sources of institutional trust in East and West Germany: civic culture or economic performance? *German Politics*, 13(3):401–418, 2004.

W.R. Campbell. Values, trust and democracy in Germany: Still in search of 'inner unity'? *European Journal of Political Research*, 51:646–670, 2012.

C. Campos-Castillo, B.W. Woodson, E. Theiss-Morse, T. Sacks, M. Fleig-Palmer, and M.E. Peek. Examining the relationship between interpersonal and institutional trust in political and health care contexts. In Shockley, E. et al., editor, *Interdisciplinary Perspectives on Trust*, pages 99–115. Springer International Publishing Switzerland, 2016.

M. Carney. Mark Carney's Reith Lectures: On Financial Systems & Climate Change. https://ires.ubc.ca/mark-carneys-reith-lectures-on-financial-systems-climate-change/, 2020.

M. Carney. *Value(s): Building a Better World for All*. William Collins, Dublin, 2021.

A. Carstens. The value of trust. *Speech at Award ceremony, King of Spain Prize in Economics, Madrid, Spain, 6 March*, 2023.

A. Carstens. Trust and macroeconomic stability: a virtuous circle. *Lecture at the Center for Financial Studies, Goethe University, Frankfurt, 18 March*, 2024.

A. Carstensen. Digital currencies and the soul of money. *Speech, Goethe University's Institute for Law and Finance (ILF) conference on "Data, Digitalization, the New Finance and Central Bank Digital Currencies: The Future of Banking and Money", 18 January 2022*, 2022.

C. Castelfranchi and R. Falcone. *Trust Theory: A Sociocognitive and Computational Model*, volume 18. John Wiley & Sons, 2010.

I. Christelis, D. Georgarakos, T. Jappelli, and M. van Rooij. Trust in the central bank and inflation expectation. *International Journal of Central Banking*, 16(6):1–37, 2020.

B. Cœuré. Central banking in times of complexity. *Panel remarks at a conference on the occasion of Sveriges Riksbank's 350th anniversary, Stockholm, 25 May 2018*, 2018.

J. Coleman. *Foundations of Social Theory*. The Belknap Press of Harvard University Press, 1990.

S. Cook-Greuter. Ego development: A full-spectrum theory of vertical growth and meaning making. *mimeo, Wayland*, 2014.

F. D'Acunto, U. Malmendier, and M. Weber. Gender roles produce divergent economic expectations. *Proceedings of the National Academy of Sciences*, 118(21), 2021.

S. E. Dawlabani. *MEMEnomics: The Next-Generation Economic System*. SelectBooks, 2013.

A. Dentler. Did the fed raise interest rates before elections? *Public choice*, 181:239–273, 2019.

M. Draghi. Verbatim of the remarks made by mario draghi. *Speech by Mario Draghi, President of the European Central Bank at the Global Investment Conference in London 26 July 2012*, 2012.

T. Drechsel. Estimating the Effects of Political Pressure on the Fed: A Narrative Approach with New Data. *CEPR Discussion Paper*, 18612, 2023.

M. Ehrmann, S. Holton, D. Kedan, and G. Phelan. Monetary Policy Communication: Perspectives from Former Policymakers at the ECB. *Journal of Money, Credit and Banking*, n/a(n/a).

M. Ehrmann, M. Soudan, and L. Stracca. Explaining European Union citizens' trust in the European Central Bank in normal and crisis times. *The Scandinavian Journal of Economics*, 115(3):781–807, 2013.

S. Eickmeier. Is consciousness the missing link? *Mimeo*, 2024.

S. Eickmeier and L. Petersen. The ECB's climate activities and public trust. *Mimeo*, 2024.

E. Farvaque, M.A. Hayat, and A. Mihailov. Who Supports the ECB? Evidence from Eurobarometer Survey Data. *The World Economy*, 40(4):654–677, 2017.

E. Fehr. On the economics and biology of trust. *Journal of the European Economic Association, Apr.-May, 2009*, 7(2/3):235–266, 2009.

M. Fratzscher. Die EZB riskiert mit aggressiver Kommunikation ihre Glaubwürdigkeit. *Handelsblatt, Gastkommentar, 9 Sept. 2022*, 2022.

G. Gloeckler and S. Mee. A plain-speaking central bank: contradiction in terms? *ECB blog, 13 October*, 2022.

Y. Gorodnichenko, O. Coibion, and M. Weber. Monetary policy communications and their effects on household inflation expectations. *Journal of Political Economy*, 130, 2022.

S. Grof. *Revision der Psychologie – Das Erbe eines halben Jahrhunderts Bewusstseinsforschung*. Nachtschatten, Solothurn, 2017.

A. Haldane and M. McMahon. Central Bank Communications and the General Public. *AEA Papers and Proceedings*, 108:578–583, 2018.

L.P. Hansen. Central banking challenges posed by uncertaint climate change and natural disasters. *Journal of Monetary Economics*, 125:1–15, 2022.

B. Hayo and E. Neuenkirch. The German public and its trust in the ECB: The role of knowledge and information search. *Journal of International Money and Finance*, 47:286–303, 2014.

I.D. Hwang, T. Lustenberger, and E. Rossi. Central bank communication and public trust: The case of ECB speeches? *Journal of International Money and Finance*, 137(102916), 2023.

O. Issing. Should we have faith in central banks? *Speech, St. Edmund's College Millenium Year Lecture*, 2000.

D. Jansen, M. Fratzscher, J. de Haan, M. Ehrmann, and A. Blinder. What we know and what we would like to know about central bank communication. *VOXEU.org, 15 May*, 2008.

D. Kahneman. *Thinking, Fast and Slow*. Farrar, Straus and Giroux, 2011.

R. Kegan. *In over our heads. The mental demands of modern life*. Harvard University Press, Cambridge Massachusetts, 1994.

K. King. What does it mean to be trauma-informed? *Psychology Today*, https://www.psychologytoday.com/us/blog/lifespan-perspectives/202111/what-does-it-mean-be-trauma-informed, November 26, 2021.

Z. Kril, D. Leiser, and A. Spivak. What determines the credibility of the central bank of Israel in the public eye? *International Journal of Central Banking*, 12(1):67–93, 2016.

O. Kryvtsov and L. Petersen. Central bank communication that works: Lessons from lab experiments. *Journal of Monetary Economics*, 117:760–780, 2021.

F. Kydland and E. Prescott. Rules rather than discretion: The inconsistency of optimal plans. *Journal of Political Economy*, 85:473–490, 1977.

C. Lagarde. Opening Statement by Christine Lagarde to the Economic and Monetary Affairs Committee of the European Parliament, September 4. 2019.

C. Lagarde. Introductory statement by Christine Lagarde, President of the European Central Bank, before the Hearing at the Committee on Economic and Monetary Affairs of the European Parliament, Brussels, February 6. 2020.

F. Laloux. *Reinventing Organizations visuell: Ein illustrierter Leitfaden sinnstiftender Formen der Zusammenarbeit. [Reinventing Organizations: An Illustrated Invitation].* Franz Vahlen, Muenchen, 2017.

P. Louie, C. Wu, F.V. Shahidi, and A. Siddiqi. Inflation hardship, gender, and mental health. *SSM - Population Health*, 23:101452, 2023.

M. Malmendier and J. Wachter. *Memory of Past Experiences and Economic Decisions.* M. Kahana and A. Wagner (eds.), Handbook of Human Memory, Oxford University Press, 2023.

U. Malmendier. Exposure, experience, and expertise: why personal histories matter in economics. *Journal of the European Economic Association*, 19(6):2857–2894, 2021.

U. Malmendier and S. Nagel. Learning from inflation experiences. *The Quarterly Journal of Economics*, 131(1):53–87, 2016.

U. Malmendier and L. Sheng. Scarred Consumption. *American Economic Journal: Macroeconomics*, 2023.

A.H. Maslow. *Toward a psychology of being (German Version: Psychologie des Seins - Ein Entwurf)*. Litton Educational Publishing, Inc / Kindler Verlag GmbH, München, German edition from 1973, 1968.

M. Mazzucato. *The value of everything – making and taking in the global economy*. Hachette Book Group, New York, 2018.

S. Mcleod. Humanistic approach in psychology (humanism): Definition & examples. *https://simplypsychology.org/humanistic.html*, 2023.

S. Mellina and T. Schmidt. The Role of Central Bank Knowledge and Trust for the Public's Inflation Expectations. *Deutsche Bundesbank Discussion Papier*, 32, 2018.

S. Mochhoury. Central Bank Communication and Trust: An Experimental Study on the European Central Bank and the General Public. *ECB Working Paper*, 2824, 2023.

F. Murtin, L. Fleischer, V. Siegerink, A. Aassve, Y. Algan, R. Boarini, S. Gonzalez, Z. Lonti, G. Grimalda, R. Hortala Vallve, S. Kim, D. Lee, L. Putterman, and C. Smith. Trust and its determinants: Evidence from the Trustlab experiment. *OECD Statistics Working Paper*, (2018/02), 2018.

K. O'Brien. *You Matter More Than You Think: Quantum Social Change for a Thriving World*. cCHANGE press, 2021.

OECD. OECD Guidelines on Measuring Trust. 2017.

OECD. Building trust to reinforce democracy - Main findings from the 2021 OECD survey on drivers of trust in public institutions. 2022.

OECD Global Forum. Highlights of the first OECD Global Forum on Building Trust and Reinforcing Democracy. *held 17 November 2022 in Luxembourg*, 2022.

D. Pollack. Trust in institutions and the urge to be different: On attitudinal change in eastern Germany. *German Politics*, 8(3):81–102, 2007.

R.D. Putnam. *Bowling alone: The collapse and revival of American community*. Simon and Schuster, 2000.

Lovisa Reiche. That's what she said: an empirical investigation on the gender gap in inflation expectations. 2023.

C. Rogers. *On becoming a person*. Houghton Mifflin Company, Boston, second ed. 1977, 1961.

R. Rohrschneider and R. Schmitt-Beck. Trust in Democratic Institutions in Germany: Theory and Evidence Ten Years After Unification. *German Politics*, 11(3):34–58, 2002.

F. Roth, D. Gros, and F. Nowak-Lehmann D. Crisis and citizens' trust in the european central bank — panel data evidence for the euro area, 1999–2012. *Journal of European Integration*, 36(3):303–320, 2014.

I. Salle, Y. Gorodnichenko, and O. Coibion. Lifetime Memories of Inflation: Evidence from Surveys and the Lab. *NBER Working Paper*, 31996, 2024.

M. J. Sandel. *What Money Can't Buy: The Moral Limits of Markets.* Macmillan USA, 2012.

O. Scharmer and K. Kaufer. *Leading form the emerging future: from ego-system to eco-system.* Berrett-Koehler Publishers; Illustrated Edition, 2013.

I. Schnabel. The importance of trust for the ECB's monetary policy. *Speech given as part of the seminar series "Havarie Europa. Zur Pathogenese europäischer Gegenwarten" at the Hamburg Institute for Social Research (Hamburger Institut für Sozialforschung)*, 2020.

D. Siegel. *The Developing Mind.* The Guilford Press, third ed., New York, 2020.

D. Siegel. Comprehensive interpersonal neurobiology course. Mindsight Institute. https://www.mindsightinstitute.com, 2022.

R. Smith. Shapes of mind: The 10 stages of consciousness. https://integrallife.com/ten-stages-consciousness/, 2017.

E.M. Uslaner. *The moral foundations of trust.* Cambridge University Press, 2002.

B. Van der Kolk. *Verkoerperter Schrecken: Traumaspuren in Gehirn, Geist und Koerper und wie man sie heilen kann [The body keeps the score: mind, brain and body in the transformation of trauma].* Probst Verlag, Lichtenau/Westf., 2018/2015.

S. Waelti. Trust no more? The impact of the crisis on citizens' trust in central banks. *Journal of International Money and Finance*, 31(3):593–605, 2012.

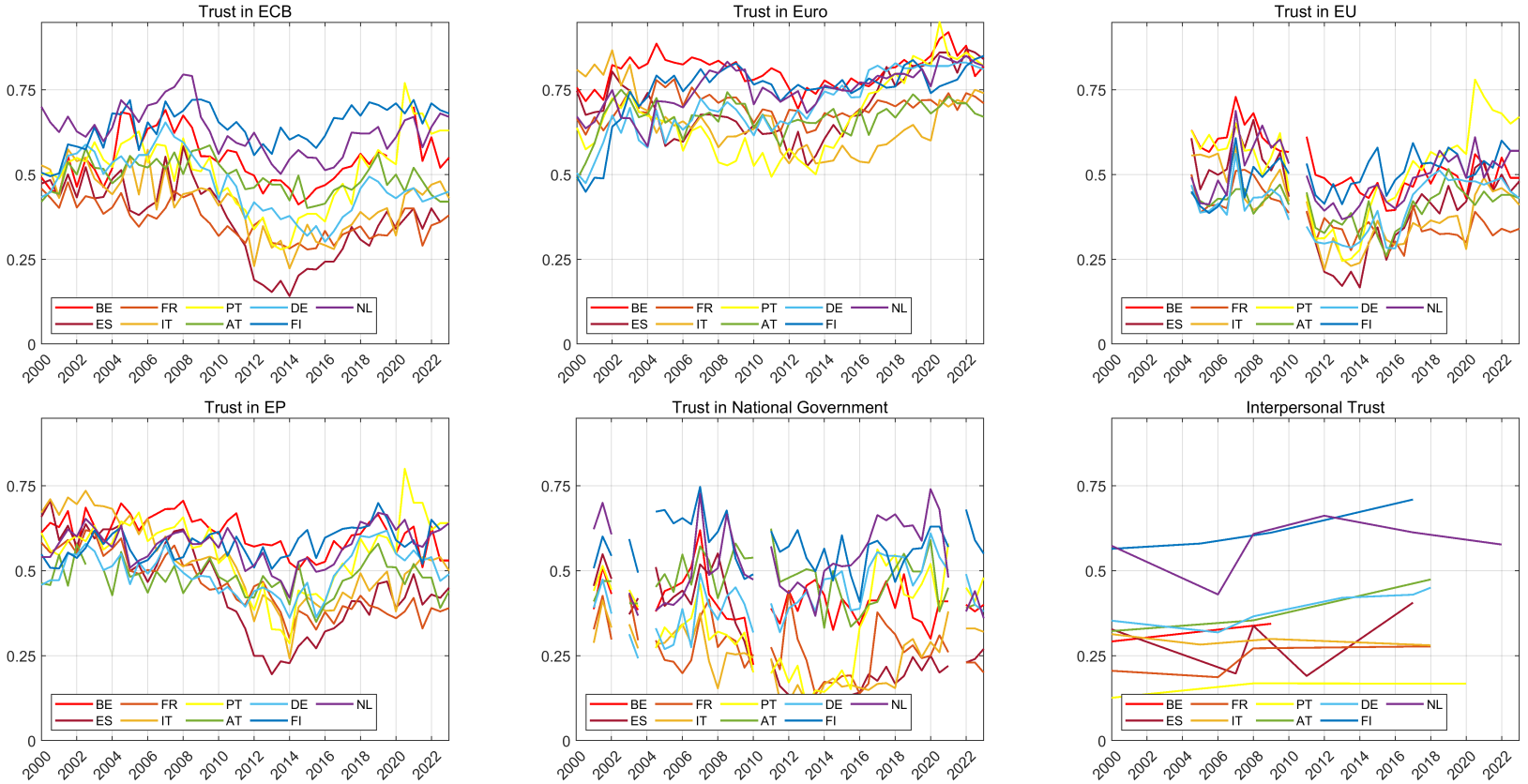
K. Wilber. *A Theory of Everything. An Integral Vision for Business, Politics, Science and Spirituality.* Shambala Publications, Boulder Colorado, 2001.

K. Wilber. *Integral Psychology: Consciousness, Spirit, Psychology, Therapy. [Integrale Psychologie. Geist. Bewusstsein. Psychologie. Therapie].* Shambala Publications, Boulder Colorado, 2016/2001.

Appendix

A.1 Trust in institutions and interpersonal trust, individual euro-area countries

Figure 5: Trust in central banks and in other political institutions and interpersonal trust



Note: See notes to Figure 1.

A.2 Correlation between trustworthiness measures

In Table F1 we consider variables associated with perceived trustworthiness one by one. The signs of the previously negative coefficients (of "Integrity", "Honest communication", "Acts on broader concern" as well as "Provides sufficient information") switch to positive, and all variables are highly significant. This is not a sign of multicollinearity which would imply that coefficients turn insignificant, but not from significantly negative to significantly positive. Table F2 shows that the measures of trustworthiness as perceived by households are mildly positively correlated, with correlation coefficients between 0.47 and 0.7. Variance inflation factors (VIF) are all below 3, and only two are above 2.5, i.e. the VIF associated with "Honest communication" is at 2.98, and that associated with "Accounts for broader picture" is at 2.65. This confirms mild correlations only.

Table F1: Regression analysis II: varying measures associated with perceived trustworthiness of the ECB

Trust	(a.1)	(a.2)	(a.3)	(a.4)	(a.5)	(a.6)	(a.7)
Expected economic growth	0.495***	0.508***	0.528***	0.529***	0.524***	0.493***	0.521***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Female	0.186***	0.226***	0.207***	0.226***	0.218***	0.175***	0.206***
	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Age	0.011***	0.012***	0.011***	0.010***	0.012***	0.011***	0.011***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Income	0.030**	0.028**	0.036***	0.034**	0.032**	0.025*	0.035**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.011	-0.000	0.012	0.012	0.011	0.005	0.013
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Trust in political institutions	0.440***	0.440***	0.473***	0.476***	0.475***	0.452***	0.471***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Find it easy to trust others	0.061***	0.065***	0.068***	0.067***	0.066***	0.059***	0.066***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Achieved price stability in past	0.222***						
	(0.02)						
Technocratic		0.201***					
		(0.01)					
Provides sufficient information			0.087***				
			(0.01)				
Integrity				0.065***			
				(0.01)			
Honesty communication					0.092***		
					(0.01)		
Accounts for overall picture						0.204***	
						(0.01)	
Acts on broader concern							0.093***
							(0.01)
Constant	-0.573***	-0.622***	-0.005	0.151	-0.103	-0.552***	-0.007
	(0.20)	(0.21)	(0.21)	(0.21)	(0.22)	(0.20)	(0.21)
Observations	3793	3793	3793	3793	3793	3793	3793
R^2 adj.	0.451	0.441	0.415	0.412	0.416	0.444	0.417

Notes: See notes to Table 3, specifications (1)-(9).

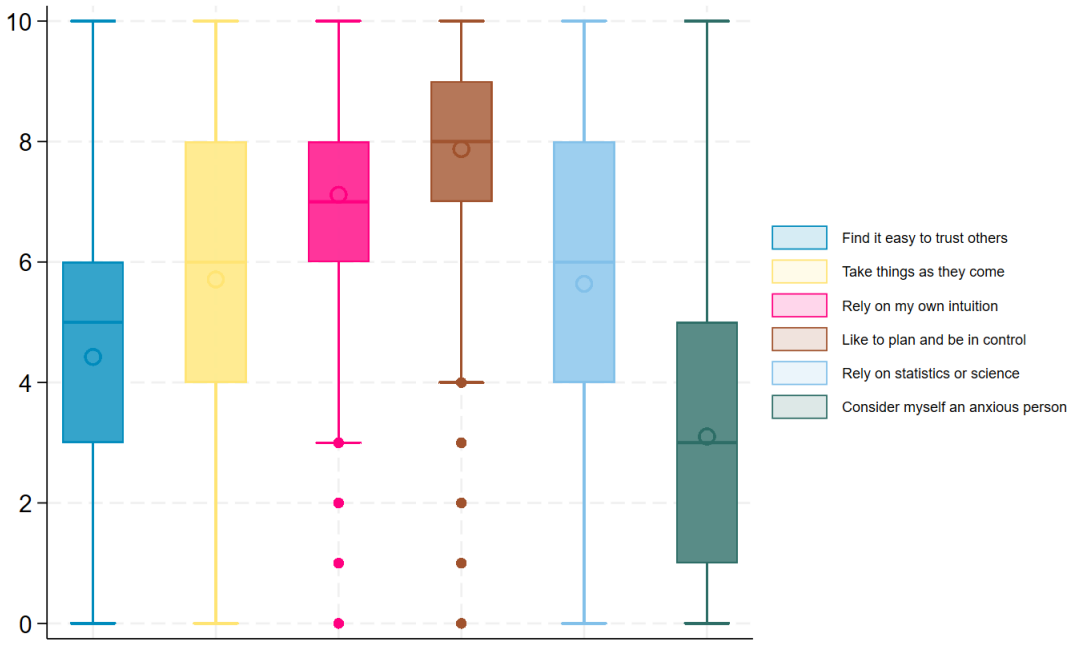
Table F2: Correlation between measures of perceived trustworthiness of the ECB

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
Achieved price stability in past (a)	1						
Technocratic (b)	0.554	1					
Provides sufficient information (c)	0.473	0.573	1				
Integrity (d)	0.429	0.548	0.609	1			
Honest communication (e)	0.504	0.635	0.661	0.703	1		
Accounts for overall picture (f)	0.557	0.685	0.607	0.591	0.674	1	
Acts on broader concern (g)	0.486	0.551	0.608	0.596	0.654	0.629	1

A.3 Investigating further into generalized trust

In Figure 6 we present moments of additional generalized trust measures, along with our baseline measure ("Find it easy to trust others"). The picture across measures is somewhat inconclusive. We find highest values for "Like to plan and be in control" and lowest values for "Consider myself an anxious person", which is perhaps most difficult to admit (to others and oneself). Correlations among measures are quite low (see Table F3. Lack of a clarity is an important finding by itself.

Figure 6: Factors related to people's ability to trust / generalized trust



Note: The figure shows medians (lines), means (circles), interquartile ranges, minima and maxima as well as outliers (dots) of the variables. Outliers are defined as observations exceeding 1.5 times the interquartile range.

Table F3: Correlations between measures of generalized trust

	(a)	(b)	(c)	(d)	(e)	(f)
Find it easy to trust others (a)	1					
Take things as they come (b)	0.207	1				
Rely on my own intuition (c)	0.001	0.171	1			
Like to plan and be in control (d)	-0.095	-0.082	0.233	1		
Rely on statistics or science (e)	0.309	0.071	-0.161	0.063	1	
Consider myself an anxious person (f)	-0.022	-0.062	0.141	-0.004	0.050	1

How large is the group of households who are able to trust in general *and* provide answers that are consistent across measures? And who are they? We consider two groups. We define "High ability to trust 1" as: "Like to plan and be in control", "Consider myself an anxious person" smaller than or equal to 5 and "Find it easy to trust others", "Take things as they come" greater than or equal to 5. And we define "High ability to trust 2" as: "Like to plan and be in control", "Consider myself an anxious person" smaller than or equal to 4 and "Find it easy to trust others", "Take things as they come" greater than or equal to 6. There is only a relatively small share of households who consistently report a high ability to trust. 208 households or 5% of the sample of households has a "High ability to trust 1", and 43 households or 1% of all households has a "High ability to trust 2". These low numbers are broadly in line with findings by development psychologists for "mature (or integral) consciousness" which would imply high trust (in oneself, life and each other), ability to deal with uncertainty, high consciousness, absence of fears or at least awareness of fears, of trust issues and of the attachment background etc. (see Cook-Greuter 2014, Kegan 1994, p. 195, Smith 2017).

Who are those? Table F4 shows that the middle-aged respondents are disproportionately reporting a higher ability to trust, while the opposite is true for the older respondents. This is different from the literature, which typically finds that interpersonal trust in OECD countries rises with age (Murtin et al. 2018). Our finding could be related to the fact that survey participants are from Germany. Many of the older have experienced WWII or are children of those who have experienced WWII (or even WWI). War experiences are transmitted through the generations, but diminish from generation to generation, unless re-traumatization takes place. There is certainly scope for further research on this issue. It still is remarkable that the older have relatively high trust in the ECB, even though more generally, they trust less. Finally, there is a (very small) group of highly educated households that have very high and consistent ability to trust ("High ability to trust 2").

Table F4: Shares of observations in those with high ability to trust, in %

	Total	High ability to trust 1	High ability to trust 2
Female	37.1	36.5	34.9
Male	62.9	63.5	65.1
Age (16-24 years)	2.3	2.4	2.3
Age (25-60 years)	53.1	66.4	69.8
Age (> 60 years)	44.6	31.3	27.9
Income (< 2,500 Euros)	11.6	10.5	11.6
Income (2,500-6,000 Euros)	62.0	60.0	55.8
Income (> 6,000 Euros)	26.4	29.5	32.6
Education (no degree or in training)	2.5	2.9	0.0
Education (less or equal techn. or comm. college)	51.8	53.9	46.5
Education (bachelor degree)	15.4	11.5	11.6
Education (graduate degree)	30.3	31.7	41.9
East (1989)	18.0	16.0	10.8
West (1989)	82.0	84.4	89.2

Notes: Education (less or equal techn. or comm. college) refers to apprenticeship, vocational school, technical or commercial college. "High ability to trust 1" is defined as "Like to plan and be in control", "Consider myself an anxious person" smaller than or equal to 5 and "Find it easy to trust others", "Take things as they come" greater than or equal to 5; as well as "High ability to trust 2", defined as "Like to plan and be in control", "Consider myself an anxious person" smaller than or equal to 4 and "Find it easy to trust others", "Take things as they come" greater than or equal to 6.