

Chapter 10. Trust and social capital

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This chapter discusses the role of trust for social progress and people's well-being. It reviews the different definitions and types of trust, including rational trust, moral trust and social preferences, as well as the state of existing statistics on trust. The chapter argues in favour of the definition of trust provided by the OECD Guidelines on Measuring Trust as "a person's belief that another person or institution will act consistently with their expectations of positive behaviour". It looks at why trust matters for the well-being of people and the country where they live, and assesses the available evidence on its role in supporting social and economic relations. It analyses trust between individuals (interpersonal trust) and trust in institutions (institutional trust) as determinants of economic growth, social cohesion and well-being, as a crucial component for policy reform and for the legitimacy and sustainability of any political system. Finally, the chapter stresses the importance of integrating survey measures of trust into the routine data collection activities of National Statistical Offices, and of implementing quasi-experimental measures of trust and other social norms based on representative samples of the population as a complement to traditional survey questions.

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10.1. Introduction

Social capital, broadly understood as the set of shared norms and values that contribute to well-being (OECD, 2013a), has received a huge amount of academic and policy interest in the last quarter-century as a key driver of social progress and well-being. The term social capital conveys the idea that co-operative human relations are crucial for improving various aspects of people’s life, and that it consists of a stock that should be preserved and developed for the sustainability of well-being. This is why the influential report of the Commission on the Measurement of Economic Performance and Social Progress made specific recommendations to develop better measures of social connections and social capital (Stiglitz, Sen and Fitoussi, 2009). Several initiatives since 2009 have advanced our understanding of social capital and of the data resources available for this effort. For example, the OECD has included aspects of social capital in the framework underpinning its bi-annual report *How’s Life?* (OECD, 2011), while other international task forces have underscored the need to develop better measures of social capital for evaluating the sustainability of well-being over time (UNECE, 2013).

Given the very broad and heterogeneous nature of social capital, it is important to narrow and deepen the analysis of its various aspects one at a time, in order to make progress on its measurement and to document its policy relevance. This chapter focuses on the role of “trust” for social progress and well-being. While trust is only one component of social capital (see Box 10.1, on the different definitions and dimensions of social capital), research shows that this dimension is indispensable for social and economic relations. Trust between individuals (inter-personal trust) and trust in institutions (institutional trust) have been shown to be a decisive determinant of economic growth, social cohesion and well-being. They have also been shown to be a crucial component for policy reform and for the legitimacy and sustainability of any political system. These are also the two types of trust addressed by the *OECD Guidelines on Measuring Trust* (Box 10.2).

Box 10.1. Social capital and trust

Despite the high level of interest in social capital, there is little agreement about the best way to define and measure it. This has slowed down its incorporation in official statistics and hampered the development of internationally comparable data collection since the Stiglitz-Sen-Fitoussi Commission (2009). The OECD defined social capital as the “networks together with shared norms, values and understandings that facilitate co-operation within or among groups” (OECD, 2001), while Scrivens and Smith (2013) distinguish four main aspects of social capital:

- Personal relationships refer to people’s networks (i.e. the people they know) and the social behaviours that contribute to establishing and maintaining those networks, such as spending time with others, or exchanging news. This category concerns the extent, structure, density and components of individuals’ social networks.
- Social network support is a direct outcome of the nature of people’s personal relationships, and refers to the resources – emotional, material, practical, financial, intellectual or professional – that are available to each individual through their personal social networks.

- Civic engagement measures activities through which people contribute to civic and community life, such as volunteering, political participation, group membership and different forms of community action. High levels of volunteering and civic action can contribute to institutional performance as well as being a driver of trust and co-operation.
- Trust and co-operation. Following Coleman (1990), “an individual trusts if he or she voluntarily places resources at the disposal of another party without any legal commitment from the latter, but with the expectation that the act of trust will pay off”. The different types of trust are discussed in this chapter.

Box 10.2. The OECD Guidelines on Measuring Trust

The Guidelines on Measuring Trust address both producers and users of trust data (OECD, 2017) and are modelled after the successful *OECD Guidelines on Measuring Subjective Well-being* (OECD, 2013b). *The Guidelines* cover trust by people in both other people (also known as inter-personal trust) and in public institutions (institutional trust).

These *Guidelines* represent the first attempt to provide international recommendations on collecting, publishing, and analysing trust data to encourage their use by National Statistical Offices. They describe why measures of trust are relevant for monitoring and policy-making, and why National Statistical Agencies have a critical role to play in enhancing the usefulness of existing measures. Besides establishing what is known about the reliability and validity of measures of trust, the *OECD Guidelines* describe best approaches for measuring it in a reliable and consistent way, and provide guidance for reporting, interpretation and analysis.

The *OECD Guidelines* also include a number of prototype survey modules on trust that national and international agencies can readily use in their household surveys. Five core measures were selected based on their statistical quality and ability to capture the underlying concepts of trust, building on previous use in household surveys. While this core module is recommended to be used in its entirety, its first question on generalised inter-personal trust is considered as a “primary measure”, that should be implemented at the very minimum, on account of the solid evidence available on its validity:

1. And now a general question about trust. On a scale from zero to ten, where zero is not at all and ten is completely, in general how much do you trust most people?
2. On a scale from zero to ten, where zero is not at all and ten is completely, in general how much do you trust most people you know personally?

Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust.

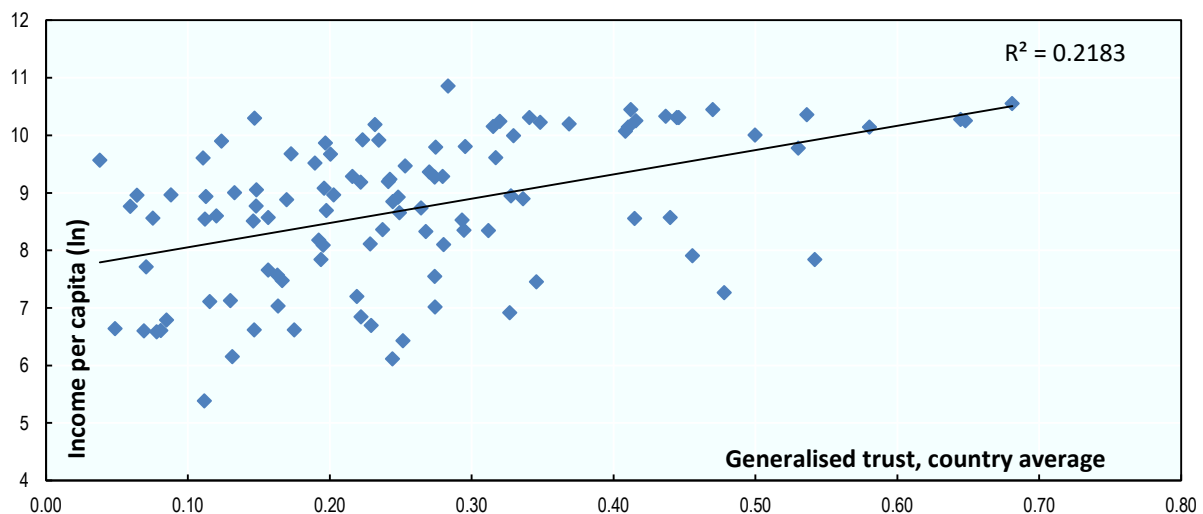
3. [COUNTRY’S] Parliament?
4. The police?
5. The civil service?

10.2. Why does trust matter?

The academic research on trust has highlighted a number of relations between trust and a range of outcomes that matter for the well-being of people and of the country in which they live.

Trust matters for economic activity and GDP growth. Countries with higher levels of trust tend to have higher income. Figure 10.1 illustrates this relationship by plotting income per capita over 1980-2009 against average generalised inter-personal trust (i.e. trust in people in general) over 1981-2008 for a sample of 106 countries. The correlation is steady: one fifth of the cross-country variation in income per capita is related to differences in generalised trust. As discussed later in the chapter, research carried out since 2009 has shown that this relationship is likely to be causal (Algan and Cahuc, 2010).

Figure 10.1. Cross-country correlation between average income per capita and generalised inter-personal trust



Note: Average income per capita (1980-2009) has been obtained from the Penn World Tables 7.0. Trust is computed as the country average from responses to the trust question in the five waves of the World Values Survey (1981-2008), the four waves of the European Values Survey (1981-2008) and the third wave of the Afrobarometer (2005). The question asks “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” Trust is equal to 1 if the respondent answers “Most people can be trusted” and 0 otherwise.
Source: Algan, Y. and P. Cahuc (2014), “Trust, growth and well-being: New evidence and policy implications”, in Aghion, P. and S. Durlauf (eds.), *Handbook of Economic Growth*, Vol. 2, Elsevier, North Holland, Amsterdam, pp. 49-120.

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Early research on the roots of economic development stressed the role of technological progress and the accumulation of human and physical capital. But since those factors were unable to explain a large share of the cross-country differences in income per capita, the focus has progressively shifted to the role of formal institutions (North, 1990), considered as factors that support or weaken market institutions (Stiglitz and Arnott, 1991) and that shape the incentives to accumulate wealth and innovate (Acemoglu, Robinson and Johnson, 2001; World Development Report, 2002); and to what extent those institutions could be distinguished from factors like human capital (Glaeser et al., 2004). More recently,

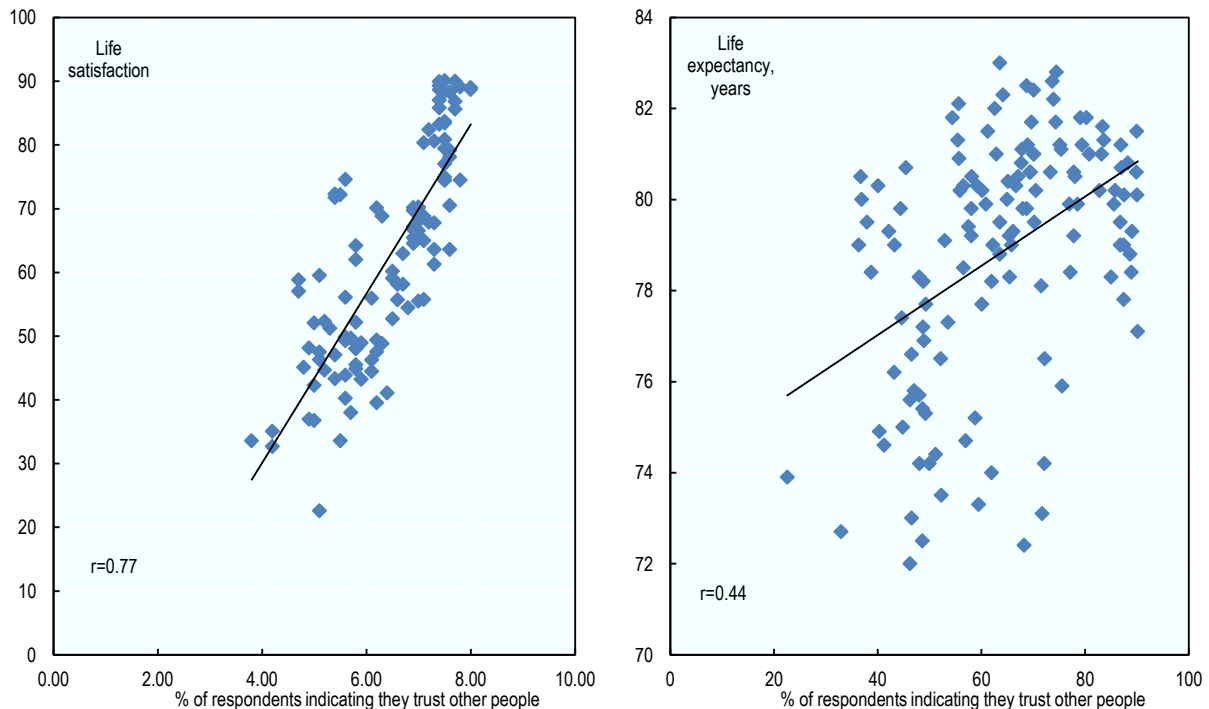
attention has been directed towards deeper factors, in particular social capital and trust. Since the ground-breaking work of Banfield (1958), Coleman (1974) and Putnam (2000), generalised inter-personal trust – broadly defined as co-operative attitude outside the family circle – has been considered by many social scientists as a key driver of many economic and social outcomes (Knack and Keefer, 1997; Dasgupta and Serageldin, 2000; Dasgupta, 2005).

Arrow (1972) gives one likely explanation for the role of trust in economic development: “Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence”.

Arrow’s intuition is straightforward. In a complex society, it is impossible to write down and enforce detailed contracts that encompass every possible state of the world for economic exchanges. Ultimately, in the absence of informal rules established by trust and trustworthiness, markets are missing, gains from economic exchanges are lost, and resources are misallocated. In that respect, trust and the informal rules shaping co-operation could explain differences in economic development. Arrow (1972) considers trust as being at the core of economic exchange in the presence of transaction costs that impede information and contracts. Fundamentally, the economic efficiency of trust flows from the fact that it favours co-operative behaviour and thus facilitates mutually advantageous exchanges in the presence of incomplete contracts and imperfect information. In Arrow’s term, trust in others acts as a lubricant to economic exchange.

Trust is critical to the well-being of citizens. Inter-personal trust does not only matter for economic outcomes. People seem to have more satisfying lives when they live in an environment of trust and trustworthiness, and when they are more trusting and trustworthy themselves, even controlling for income. For example, it seems that the non-monetary dimension of having co-operative social relationships with others affects health and happiness above and beyond the monetary gains derived from co-operation.

Panel A of Figure 10.2 illustrates this relationship by using measures of life satisfaction from the World Values Survey question: “All things considered together, how satisfied are you with your life as a whole these days?” Life satisfaction ranges from 1 to 10, a higher score indicating a higher life satisfaction. The correlation between life satisfaction and generalised trust is positive: 17% of the variance in life satisfaction is associated with cross-country differences in generalised trust, with few outliers like Portugal. Panel B of the same figure also shows a steady positive relationship between generalised trust and life expectancy (OECD, 2016). Similar relationships have been found between generalised trust and different dimensions of health status and health-related behaviour (Lochner et al., 2003; Lindström, 2005; Poortinga, 2006; Petrou and Kupek, 2008), and trust and suicide rates (Helliwell, 2007).

Figure 10.2. Generalised inter-personal trust, life satisfaction and life expectancy, 2002-14

Note: Data on generalised trust is sourced from the European Social Survey, data on life satisfaction is sourced from the Gallup World Poll.

Source: OECD (2017), *OECD Guidelines on Measuring Trust*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264278219-en>.

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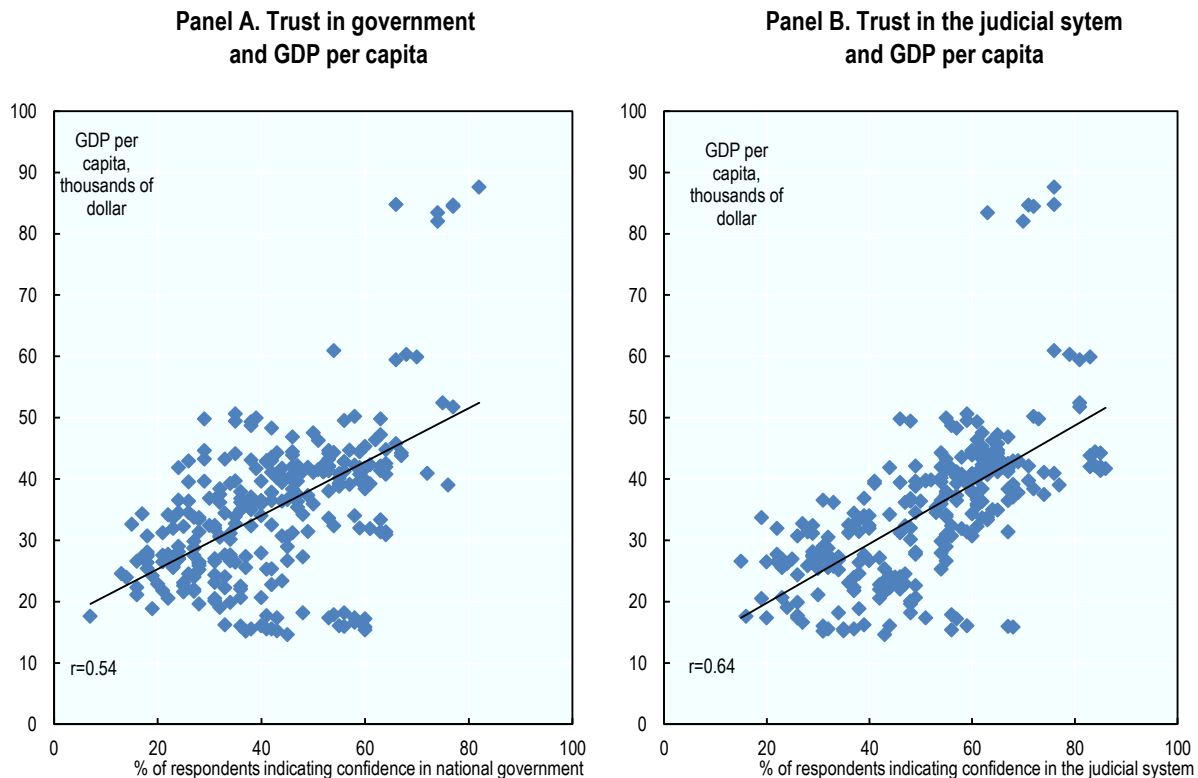
Trust improves community life and governance. Trust in institutions, or institutional trust, is also a key element of a resilient society and is critical for implementing effective policies, since public programmes, regulations and reforms depend on the co-operation and compliance of citizens (Blind, 2007; OECD, 2013a). Trust in institutions is a key driver of well-being and economic outcomes (OECD, 2015, 2016).

While inter-personal trust is of primary importance for measuring social capital, institutional trust is most relevant to evaluating the effectiveness of government policies and programmes (e.g. Klijn, Edelenbos and Steijn, 2010). When people have a high level of trust in institutions, they are more likely to comply with laws and regulations, and it is easier to implement policies that may involve trade-offs between the short and long term, or between different parts of society, e.g. through taxation or distributive policies (Marien and Hooghe, 2011; OECD, 2013a). Institutional trust is especially important to government activities that address market failures (e.g. health-care, education, the environment) or where long-term gains require short-term sacrifices (e.g. education, pensions).

Figure 10.3, from the *OECD Guidelines on Measuring Trust* (OECD, 2017), shows the relationship between trust in two institutions – the national government and the judiciary – and GDP per capita. In both cases there is a strong positive correlation, in particular in the case of the judiciary. This makes intuitive sense, since the key channels through which

institutions affect economic outcomes, such as contract enforcement or regulation of the market place, have a more direct link to the judicial system than to the government more generally. It should be stressed that this correlation could also reflect an impact of GDP per capita on institutional trust as discussed in the next sections.

Figure 10.3. Trust in institutions and GDP per capita, 2006-15



Note: Data on trust in government and on trust in the judicial system are sourced from the Gallup World Poll.
Source: OECD (2017), *OECD Guidelines on Measuring Trust*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264278219-en>.

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10.3. What does trust mean?

There is an extensive literature on the concept and theories of trust from a wide range of different disciplines within social sciences, including political science, sociology, economics and psychology. A central feature of this literature is to consider trust as a “cognitive category with knowledge and belief” (Hardin, 2004), stressing that expectations are central, either expectations about the action of others or about the fact that others share the same values (Uslaner, 2008). But beyond this common element, the concept of trust has received many different interpretations, leading to different measures reviewed by OECD, 2017 and different policy recommendations (see below). Following the *OECD Guidelines*, we will define trust as “a person’s belief that another person or institution will act consistently with their expectations of positive behaviour”. The different theories of trust are reviewed below.

10.3.1. Rational trust

Trust can be thought of as a belief about other people's trustworthiness, that is, how others are likely to behave towards you. Co-operation is then a strategy to maximise one's own benefit and can only be sustained through reputation. This strategic nature of rational trust is made clear in the trust game of Berg, Dickhaut and McCabe (1995). In this framework, two individuals are free to invest – or not – some amount that will enable them to produce jointly. Once they make this investment, the fact that the contracts are incomplete and unenforceable (as there is no way for a third party to verify that everything promised is performed) gives each player the chance to profit from the association at the expense of the other. The only possible outcome of this game is an absence of co-operation such that the players have no interest in participating (“Nash equilibrium” – a game theory concept where no player can gain anything by changing their chosen strategy if other players do not change theirs). This shows that the absence of co-operation may prevent mutually advantageous exchanges from coming about.

If trust is purely rational (i.e. self-interested), co-operation can only emerge as a reputation device and in presence of punishment. The spontaneous emergence of co-operative behaviour in populations of large size is improbable if each individual is a pure *homo economicus* and they all interact anonymously. If they are not interacting anonymously, that is if people develop reputations over time, co-operation based on reputational trust can emerge, as supported by historical and experimental evidence. Greif (1993, 1994) in his analysis of the Maghribi and Genoese traders, and Dixit (2004), have shown that such co-operation can be supported when there is sufficient transmission of information (that is, a potential partner in a transaction can find out if someone has cheated before because they have a bad reputation), and there is co-ordinated implementation of strategies intended to punish those caught defecting. This is to say that co-operation may exist in the absence of any formal institution defining legal rules if the size of the population and the preference for the present benefit are sufficiently small. If these conditions are unmet, however, formal institutions explicitly laying down legal rules and sanctions are needed in order to sustain co-operation.

In this way, whether people trust or not depends on their perception of how well societal institutions function. If people believe that strong enforcement mechanisms are in place to discourage cheating or other forms of unco-operative or socially harmful behaviours, they will be more likely to trust others in general (Knack and Keefer, 1997; Rothstein, 2000; Beugelsdijk, 2006). In this case, efficient institutions in which individuals trust are a key driver of trust in others in a cross-section of countries (Rothstein, 2011).

The value of an understanding of trust as strategic and rational is that it highlights the role played by formal institutions in encouraging trust and co-ordination. However, this view of trust does not account for the co-operative behaviour often experimentally observed to arise in anonymous, non-repetitive one-off human interactions (Bowles and Gintis, 2007; Fehr, 2009), which has been associated with moral trust and social preferences, as discussed below.

10.3.2. Moral trust and social preferences

The main alternative to a rational notion of trust is the concept of moral trust, whereby trust is a value or preference inherited through socialisation rather than a strategy chosen by an individual (OECD, 2017). In this interpretation, trust is still an expectation about how others will behave, but it is not a strategic expectation. In Uslaner's formulation, trust is a “moral commandment to treat people as if they were trustworthy”. Trust is a belief that

others share our fundamental values (Uslaner, 2002), and people extrapolate from their experiences with specific individuals or from their educational and cultural background to extend trust to groups of people with similar characteristics (Farrell, 2009).

In this line, Fukuyama (1995) considers trust as “the expectation that arises within a community of regular, honest, and co-operative behaviour, based on commonly shared norms, on the part of the other members of that community”. A similar definition is also used in the economic literature, where trust and co-operative behaviours are the set of “shared beliefs and values that help a group overcome the free rider problem in the pursuit of socially valuable activities” (Guiso, Sapienza and Zingales, 2011).

The concept of moral trust emphasises the existence of an intrinsic motivation and social preferences linked to co-operation and to the psychological or non-monetary cost of non-cooperating (Bowles and Polania-Reyes, 2012). In this perspective, individuals are motivated by more than material payoffs, and value the act of co-operating in itself. In all these settings, individuals are assumed to have social preferences, or other-regarding preferences, and not just self-regarding preferences, which allow co-operation to emerge in anonymous groups of substantial size (see Bowles and Gintis, 2007 for a synthesis).

In this perspective, the literature distinguishes two main social preferences:

- *Altruism* where people co-operate with others, without expecting any payoff or reciprocity, deriving utility solely from “warm glow preferences” (Andreoni, 1989; Anderson, Goeree and Holt, 1998).
- *Reciprocity*, or *conditional co-operation*, where people co-operate if others co-operate and are reciprocal, but may sanction those who do not respect co-operative norms (Fehr and Schmidt, 1999; Fehr and Gaechter, 2000; Gintis et al., 2005; Falk and Fischbacher, 2006; Hoff, Kshetramade and Fehr, 2011). Individuals display strong betrayal aversion and sanction non-co-operative behaviours even if it entails a monetary cost that conflicts with their self-interest (Fehr, 2009).

10.3.3. Types of trust

Regarding trust between individuals, since the seminal work of Banfield (1958) and Coleman (1990), social scientists make a distinction between limited morality (directed to people one knows personally) and generalised morality (directed to all people, including strangers). Societies with limited morality promote codes of good conduct within small circles of related persons (family or kin), whereas selfish behaviour is regarded as morally acceptable outside the small network. This behaviour was described as “amoral familism” by Banfield (1958). Societies with generalised morality promote good conduct outside the small family/kin network, which allows the possibility of identifying oneself with a society of abstract individuals or abstract institutions.¹

There is evidence that the two types of morality, generalised and limited morality, are really of two different natures, and might affect outcomes in opposite directions, as suggested initially by Banfield (1958). Ermisch and Gambetta (2010), based on a representative sample of the British population, find that people with strong family ties have a lower level of trust in strangers than people with weak family ties, and argue that this association is causal. They show that this is due to the level of outward exposure: factors that limit exposure to outsiders limit subjects’ experience as well as motivation to deal with strangers.

The concept of trust in institutions is at an earlier stage of both theoretical and empirical development than that of inter-personal trust. The idea of institutional trust encompasses

the degree to which people trust specific institutions of political nature (such as the parliament, the police or the justice system) or non-political nature (such as banks or private business). The theoretical literature generally distinguishes between two main channels of institutional trust: “trust in competence”, i.e. about the competence and knowledge of the persons working in an administration in charge of a public policy; and “trust in intentions”, i.e. about their honesty and integrity (Nooteboom, 2007).

10.4. What is the state of existing statistics on trust?

The growing awareness of the importance of trust in social and economic progress has led to several initiatives to improve and expand measures of trust from the research community, governments and international organisations. These include the OECD’s Trust Strategy and *How is Life?* reports, the UN Sustainable Development Goals, and the Praia City Group on Governance Statistics. Particular attention has been paid by the OECD to better understanding whether the trust measures commonly in use are of sufficient quality and accuracy in order to decide whether they can be considered “fit for purpose” and ready to be collected within official statistics.

10.4.1. Measures of trust

Survey-based measures of trust

So far, most of the research on the role of trust and co-operation draws on answers to survey questions. A large number of countries have been covered by household surveys which include questions on trust since the beginning of the 1980s. For the most part, these surveys are conducted by non-official data producers outside the official statistical system, such as private companies or academic initiatives. Overall, geographic coverage, collection frequency and sample size vary considerably between surveys. For example, the annual Gallup World Poll has been collecting data on institutional trust since 2006. The World Values Survey (WVS) has been collecting data every 5 years since 1981, albeit for a smaller set of countries. The European Social Survey (ESS) has been collecting data every 2 years since 2002 for European countries and regions. The Latinobarometer has been collecting data for 19 Latin American countries yearly since 1995, and the Afrobarometer has covered 37 countries with a 2-year frequency since 2002. In addition, there have been occasional large sample collections of data on trust by official data producers: the 2013 EU Statistics on Income and Living Conditions (EU-SILC) module on well-being included a variety of inter-personal and institutional trust questions, the former of which has once again been included in the 2018 repetition of that module. Individual countries within and beyond the OECD, including the United Kingdom, New Zealand, Australia, Canada, Poland, the Netherlands, Mexico, Peru, Ecuador, Chile, and Colombia have also occasionally collected data on different aspects of social capital, as well as trust in government.

The bulk of the literature on inter-personal trust has focused on trust in people that one does not know personally, as opposed to trust in relatives, family or neighbours. In surveys, inter-personal trust is most often measured with the “generalised trust question”, first introduced by Almond and Verba (1963) in their study of civil society in post-war Europe: “Generally speaking, would you say that most people can be trusted, or that you can’t be too careful when dealing with others?”; possible answers are either “Most people can be trusted” or “Need to be very careful”.

The same question is used in the European Social Survey (ESS), the US General Social Survey (GSS), the WVS, the Latinobarometer, and the Australian Community Survey. The

European Social Survey uses a more neutral wording with an answer on a 0-10 response scale rather than the binary answer where 1 = “Most people can be trusted” and 0 = “Can’t be too careful”. The *OECD Guidelines on Measuring Trust* (OECD, 2017) recommend using this neutral wording, as there is evidence that the “Can’t be too careful” phrasing might prime relatively vulnerable groups such as the elderly and women to report lower levels of trust compared to a neutral wording. *The Guidelines* further suggest that a 0-10 response scale, versus a binary one, allows for a greater degree of variance in responses and increases overall data quality and translatability, which is of particular concern for international comparability.

Surveys generally include other questions related to trust. For instance, the WVS asks the “fair question”: “Do you think most people would try to take advantage of you if they got the chance, or would they try to be fair?” The GSS includes the trust question, the fair question and adds the “help question”: “Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?”. These different questions are sometimes used to build indexes intended to provide alternative measures of trust or get an average indicator of moral values or civic capital (Tabellini, 2010; Guiso et al., 2011).

Although most of the surveys directly ask questions about generalised trust based on evaluations, there have also been attempts to measure trust with questions on expectations about what would happen in a given concrete situation. One of the most well-known example is the “lost wallet” question used in the Gallup World Poll: “If you lost a wallet or a purse that contained items of great value to you, and it was found by a stranger, do you think it would be returned with its contents, or not?”. However, this question is limited to a small number of surveys so far and the hypothetical nature of the question prevents it from being a real behavioural measure.

In the case of institutional trust, questions are traditionally formulated through a common heading: “Do you have confidence in your... (followed by a list of institutions, such as government, congress, etc.)?”. Possible answers are in general “yes/no/don’t know”, or a scale from 0 to 10. The surveys generally ask questions about different institutions, mainly public, e.g. the parliament, the courts, the government or the armed forces. Some questions also refer to those who are in charge of implementing the policies (e.g. civil servants, police officers, MPs). As noted by Delhey, Newton and Welzel (2011), institutional trust can vary depending on the institution, and so it is recommended that questions are asked for each specific institution, rather than attempting to measure institutional trust as a single construct or combine several questions into a trust index. Nevertheless, the *OECD Guidelines on Measuring Trust*, using a principal component analysis of different types of trust questions in the World Values Survey, find three main factors for institutional trust: trust in non-governmental institutions (major companies, banks, universities, environmental organisations, women’s organisations), trust in political institutions (government of the day, political parties, parliament, civil service) and trust in law and order institutions (armed forces, police, courts). While this analysis confirms the salience of distinct sub-dimensions of institutional trust, it also highlights that many of the finer distinctions often made between different categories of trust are not very informative empirically and that a relatively narrow range of measures that covers these broad types of institutions will cover the most important aspects (OECD, 2017). Of course, depending on the needs of especially policy-makers, asking institution-specific questions can still be worthwhile.

Behavioural and experimental measures of trust

Survey data supply subjective information – how people judge and feel – which requires caution in use and interpretation. Issues include how individuals interpret the question they are asked, and whether there are systematic differences between groups in that interpretation that might be misinterpreted as differences in the underlying level of trust. For example, individuals who respond that you “need to be very careful” to the trust question could be motivated by a strong aversion to risk (Fehr, 2009; Bohnet and Zeckhauser, 2004; Guiso, Sapienza and Zingales, 2011). Surveys are generally unable to assess and disentangle the variety of social preferences that can be involved in interpersonal trust such as altruism, reciprocity, or social desirability and reputation, as discussed above.

For this reason, a revolution in experimental economics has led to the development of laboratory experiments designed to elicit a large variety of social behaviours, through protocols such as the “trust game” (described below) or the “public goods game”. These carefully calibrated experiments, which measure the behaviour and choices of people, with monetary incentives at stake, not only help disentangle different types of trust, but also provide benchmarks against which survey questions can be compared, to determine whether survey questions are measuring actual behaviour.

These games focus on a definition of trust that can be directly measured with experimental games, as shown by Fehr (2009). The trust that is measured in these experiments is best thought of as a behaviour following Coleman’s concept, according to whom “an individual trusts if he or she voluntarily places resources at the disposal of another party without any legal commitment from the latter, but with the expectation that the act of trust will pay off” (Coleman, 1990). This conception has two elements: a behavioural one, and an expectation that the act of trusting will be of benefit for the trustor.

In general, these experiments use variants of the “investment game”, also known as “trust game”, of Berg, Dickhaut and McCabe (1995). In laboratory experiments, this game is played as follows. In stage 1, the subjects in rooms A and B are each given 10 dollars as a show-up fee. While subjects in room B pocket their show-up fee, subjects in room A must decide how much of their 10 dollars to send to an anonymous counterpart in room B. The amount sent, denoted by M , is tripled, resulting in a total return $3M$. In stage 2, a counterpart in room B is given the tripled money and must decide how much to return to the subject in room A. “Trust in others” is measured by the amount sent initially by the sender. Trustworthiness is measured by the amount sent back by the player in room B.

This framework can be adapted and supplemented with complementary experiments to measure trust as distinct from other attitudes, such as risk aversion, altruism and reciprocal behaviours, and to distinguish between trusting behaviour as a deep-seated preference, and trusting behaviour as a function of one’s beliefs about the trustworthiness of others (which can be quickly revised). For example, a positive correlation between the amount sent and the amount returned may reflect a preference for reciprocity. Disentangling altruism from reciprocity may be done by complementing the trust game with the dictator game, where one player has to decide what portion of a sum to share with another player who cannot react to the transfer and has no initial endowment of their own. Experiments along this line by Cox (2004) have demonstrated that reciprocity exists and that the trust motive exists separately from altruism. Other experiments have used measures of risk aversion alongside trust games.

Other studies have used neurobiological methods to measure the role of trust in comparison with preferences with greater precision. Oxytocin, a hormone released especially during breast-feeding and giving birth, is associated with sentiments of affinity and socialisation. It is known for deactivating the transmission of feelings of anxiety related to the belief of being betrayed. Kosfeld et al. (2005) evaluated the effect of oxytocin on the pro-social behaviour of individuals participating in trust games. The authors proposed additional experiments to distinguish pro-social preferences from risk-taking behaviour and from the level of optimism of the participants. The participants in this study were randomly allocated into two groups. The first group inhaled oxytocin through a spray; the second inhaled a placebo and served as the control group. Results from this experiment show that individuals who received oxytocin displayed more trust, and that they continued to behave trustingly in the exchange with others even if the latter did not show any reciprocity. By contrast, other attitudes, such as prudence and risk-aversion, or even beliefs such as optimism in the actions of others, were not affected. Based on this evidence, Kosfeld et al. concluded that the trust game measures veritable preferences for co-operation, rather than risk aversion or anticipations of the others' actions (see Fehr, 2009, for a survey of experimental measures of trust).

10.4.2. Validity of trust measures

The OECD's *Guidelines on Measuring Trust* (OECD, 2017) distinguish several criteria for assessing the statistical quality of trust measures, in particular:

- Reliability: the degree to which the measures of trust produce consistent information over time and across different vehicles.
- Face validity: the degree to which a measure is intuitively plausible, measured by the non-response rate to the question.
- Convergent validity: whether a measure of trust correlates well with objective measures (e.g. whether self-reported trust correlates with behavioural trust).
- Construct validity: whether a measure behaves as common sense and theory dictate.

General issues with existing survey-based measures

There are many practical issues with existing survey-based data on trust which are at least as important, and possibly more so, than the conceptual issues described above.

- Data generally come from non-official surveys with very small sample sizes, typically of around 1 000 per country, and sometimes low response rates. This raises concerns about noise-to-signal ratio and non-response bias in the sample. The lack of representative samples also makes it very difficult to get a comprehensive description of the level of trust at the local level and to analyse the economic, social and policy determinants of trust.
- Data coverage is also relatively poor, particularly over time. As an illustration, one of the most used surveys in the literature, the World Values Survey, provides waves only at irregular intervals (every 5 years on average) and the countries covered vary from wave to wave. Lack of time-series data makes it difficult to look at what drives changes in trust. In particular, these databases cannot be used to analyse how policy reforms affect the evolution of trust in others and in institutions.

- Different surveys are very heterogeneous in the question wordings, limiting comparability across surveys. In the case of institutional trust for instance, questions sometimes refer to similar concepts but using different descriptions, such as “courts” or the “judicial system”, “politicians” or “the government”. Also, different surveys use different response scales. Some surveys rely primarily on a “yes/no/don’t know” response format (GWP) while others surveys such as the ESS and the WVS use longer numeric scales (0-10 or 1-4). This raises a real issue since researchers are forced to rely on different data sources for different groups of countries (WVS for developing countries, and ESS for European countries in the figures used in this chapter) to cope with the poor geographical and time coverage of each survey.

Validity of survey-based measures of inter-personal trust

The *OECD Guidelines on Measuring Trust* (OECD, 2017) find strong evidence for the validity of measures of inter-personal trust: they are consistent across different data sources and over time, their non-response rates are relatively low, and they are highly correlated with a large variety of social and economic outcomes. Their policy relevance has also been supported by academic research, as discussed below.

Studies that have analysed the relationship between survey-answers from the generalised trust question and the amount sent in the trust game, an indication of convergent validity, found mixed results. Some studies found that the trust question predicted some aspect of trust behaviour, either trustworthiness or trustfulness, but not always the same one (Glaeser et al., 2000; Fehr et al., 2002; Lazzarini et al., 2005; Ermisch et al., 2009). Other studies find differences in the relationship of the trust question to behaviour in different countries (Holm and Danielson, 2005). However, differences between the conclusions of the studies may also be due to differences in experimental design, as the designs of the games are not identical between the different experiments. The recently launched *TrustLab* project, jointly launched by the OECD and France’s Sciences Po international research university, is the first international database on people’s behaviours, social norms and preferences, and collects information on trust via survey question and experimental measures in a comparable way and on nationally representative samples in different OECD countries (Box 10.3). *TrustLab* analysis from the first set of countries has found that survey and experimental measures of trust are positively correlated, and that the survey measure of trust, when controlling for other factors, captures altruism and expected trustworthiness of others (Murtin et al., 2018). This confirms the argument that expected trustworthiness of others, rather than one’s own trustworthiness, matters the most for evaluating trust in other people (Fehr, 2009). Overall, the *OECD Guidelines* therefore conclude that survey questions on inter-personal trust provide valid and reliable information and there is a strong case for including them in official statistical vehicles.

Validity of survey-based measures of institutional trust

The validity of survey-based measures of institutional trust is more mixed, but still positive (OECD, 2017). Although their potential policy relevance is clear and they perform well in terms of construct validity, some interpretation and statistical issues still remain open. Nevertheless, although the evidence base on their validity is not as strong as for measures of inter-personal trust, the OECD recommendation is that these measures should also be collected by official statistics.

Differences in interpretation by respondents can be particularly important with respect to questions on institutional trust. People may interpret “how much do you trust the government?” in several different ways. Do they think the government is competent to deliver services? Do they think the government is honest? Do they think that the government will enact good policies? The answer to these questions may be very different depending on which interpretation the respondent uses. Questions on trust in institutions do not necessarily measure something structural about how well institutions work, since people might answer these questions by thinking about the government in power at the time or about the deep-seated traits of a political system.

In addition, statistics on institutional trust must be used with caution. Should these statistics be used as a measure of people’s *perception* of institutional trustworthiness, or as a measure of the actual objective level of trustworthiness or transparency? That is, should differences in measures of institutional trust across countries be taken as an indicator, for example, of different levels of corruption? It is difficult to distinguish between beliefs and perceptions on the one hand, and objective measures on the other, especially when individuals are asked about the extent of transparency or corruption of various institutions (Charron, 2016).

So far there has been little evidence on the convergent validity of institutional trust measures. While for inter-personal trust there is a consensus on using generalised trust as the preferred measure, institutional trust covers several dimensions all of which are of interest (police, banks, and so on). Furthermore, with respect to experimental analyses (against which survey measures might be compared, as in the case of inter-personal trust), the standard trust game does not have an experimental counterpart for the analysis of trust in institutions. However, there are studies that rely on Implicit Association Tests, a method from experimental psychology, to validate institutional trust questions, with promising results (Intawan and Nicholson, 2017). The *TrustLab* project also includes an Implicit Association Test as experimental measure of institutional trust, and, encouragingly, finds that, controlling for a range of individual characteristics, experimental trust in government is significantly and positively related with survey data on trust in government and trust in the judicial system (Murtin et al., 2018).

Going forward, more consistent and harmonised data will increase the evidence base available and allow researchers to better understand and improve these measures.

Box 10.3. *TrustLab*: Measuring trust and social norms through experimental techniques

TrustLab is an experimental platform developed by Sciences Po and the OECD to:

- Produce new measures of trust and social norms using a range of techniques.
- Compare trust and social norms across countries and groups of people.
- Understand the drivers of trust at the individual level.

The platform combines experimental and non-experimental techniques. As such, it overcomes some limitations of the experimental approaches used so far, in particular their very small sample sizes, the use of samples that are not nationally representative, and the fact that experimental findings are not linked to comparable survey data.

TrustLab relies on an integrated online platform developed by MediaLab Sciences Po. In every participating country, a representative national sample of 1 000 people answers a number of traditional survey questions and participates in experimental games providing both behavioural and self-reported information. Games are played with real resources at stake (mean value around EUR 15). Table 10.1 presents the different survey modules and instruments that are used in *TrustLab*.

Table 10.1. Modules featuring in *TrustLab*

Module	Focus	Technique
1. Behavioural games (trust game, public goods game, dictator game)	Generalised trust	Experimental
2. Implicit Association Tests	Trust in institutions	Quasi-experimental
3. Survey and demographic module	Generalised trust Trust in institutions Drivers of trust	Traditional self-reported survey questions

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Data from *TrustLab* provide a rich description of different social norms (trust in others, trustworthiness, altruism, co-operation, reciprocity) and of trust in different institutions (government, parliament, police, judicial system, media and banks), in addition to some of the potential determinants of trust.

Following a pilot phase in 2016, *TrustLab* has now been implemented in France, Korea, Slovenia, the United States, Germany, Italy and the United Kingdom, with a range of academic and governmental partners joining the effort.

Validity of experimental measures of trust

We still know very little about whether and to what extent the experimental results established in the lab carry over to field situations. An investigation of the relationship between lab-based experimental measures and field outcomes is required if we are to rely on the experimental method to make inferences about the real world. Unfortunately, research has so far mainly focused on lab experiments with very small and non-representative samples of students or other citizens, raising important concerns about external validity (see Henrich et al., 2001 for a comparison of social preferences across

small-scale societies). This issue is all the more problematic since these samples are generally drawn from university students in Western countries. In the field of psychology, Arnett (2008) found that 96% of subjects in studies published in top journals were from “WEIRD” (Western, educated, industrialised, rich, and democratic) backgrounds. Researchers – often implicitly – assume that either there is little variation in experimental results across populations, or that these WEIRD subjects are as representative of the human species as any other population. This is not the case: WEIRD subjects are “among the least representative populations one could find for generalizing about humans”, and there is substantial variability of results across countries (Heinrich et al., 2001).

Due to its lack of external validity, experimental economics leaves important questions unanswered. What is the heterogeneity of social preferences across populations, organisations or countries, based on real and comparable behaviours? How does this heterogeneity explain economic and institutional development? How is this heterogeneity explained by economic and institutional factors? How well do behaviours exhibited in experimental games (which are often conducted in somewhat artificial environments) match behaviour in the real world?

Karlan (2005) uses the trust game to obtain individual-level measures of taste for reciprocity, and shows that it can be used to predict loan repayment among participants, up to one year later, in a Peruvian microcredit programme. De Oliveira, Croson and Eckel (2014) elicit subjects’ taste for co-operation in the lab using a traditional public goods game. They show that the results are correlated with subjects’ contributions to local charities in a donation experiment, and with whether they self-report contributing time and/or money to local charitable causes. Similarly, Laury and Taylor (2008) and Benz and Meier (2008) use public goods games to elicit participants’ taste for co-operation and show that it is associated with the probability to contribute to a public good in the field through a charitable donation. Algan et al. (2015) also show that trust is a good predictor of contributions in online economics communities. In particular, the emergence of large organisations based on co-operation and non-monetary incentives, such as Wikipedia and open software, provides a perfect experiment to test the relationship between experimental measures and field behaviours.

The main concern with experimental measures of trust is related to the limited and non-representative samples for the lab experiments. Survey questions, on the other hand, have representative samples if collected by National Statistical Offices, but they measure individual beliefs (about others and themselves) rather than how much people actually engage in trusting behaviour.

Combining experimental and survey data

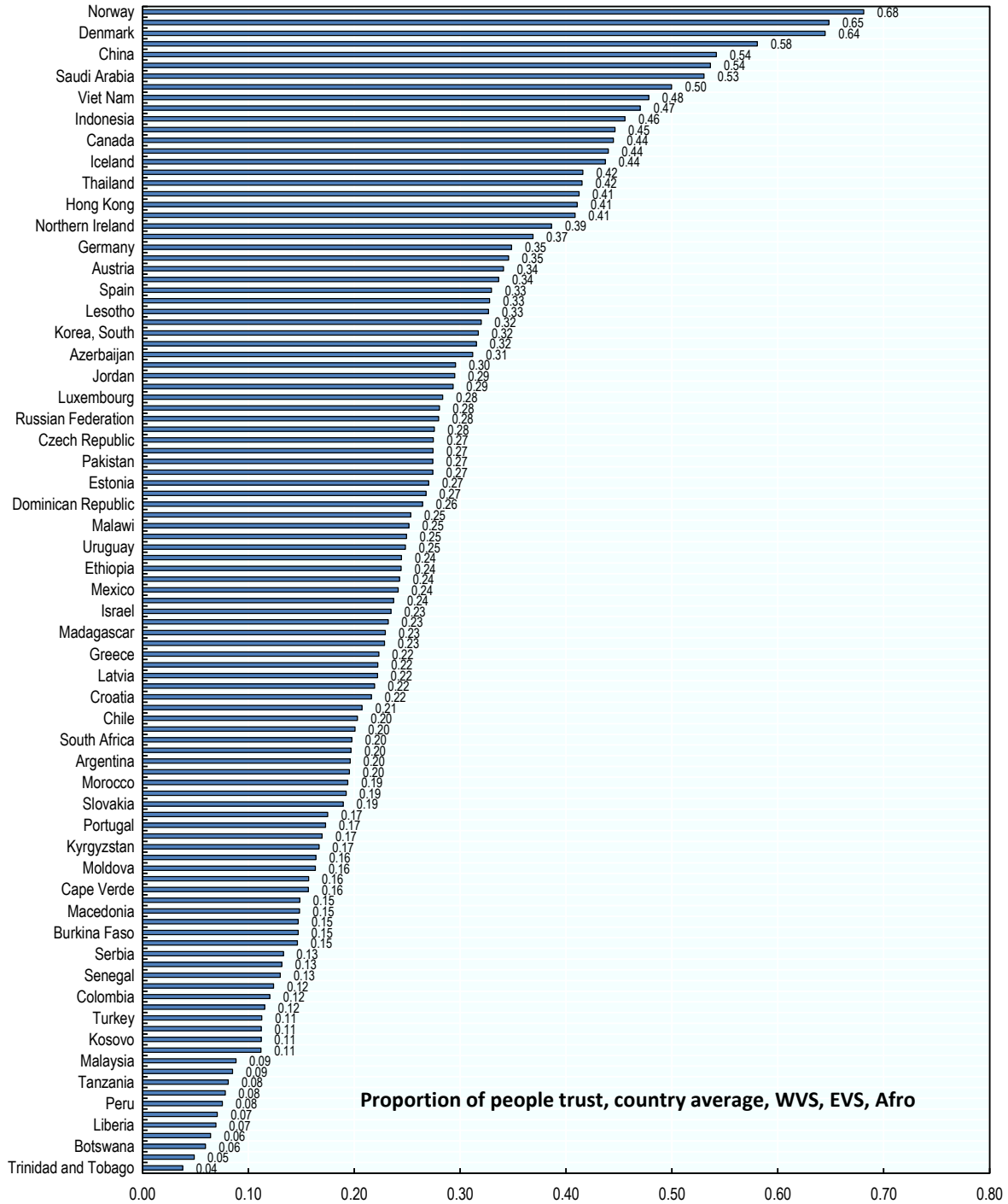
Survey-based questions on trust are good predictors of macro-economic outcomes, but by themselves cannot disentangle the underlying mechanisms involved. Experimental measures of trust can do so, but they cannot be conducted on a wide scale. Experiments carried out on representative samples could shed light on the exact nature of social attitudes and on the extent of bilateral co-operation between individuals in the larger population, not only WEIRD subjects. In addition, with a few exceptions, identical experiments are not repeated in different countries, so it is difficult to understand if there is cross-country variation in the underlying mechanisms of trust. The *TrustLab* project has the potential to overcome these limitations. For the first time, researchers, civil society and government can compare social preferences drawn from an identical experimental setup based on representative samples for different countries.

10.5. What can we say based on available evidence?

International surveys have yielded evidence of large differences in trust levels across countries. In Norway, the country with the highest level of trust in the sample, more than 68% of the population are trusting others (Figure 10.4). At the opposite end of the ranking lies Trinidad and Tobago, where only 4% of the population report high levels of inter-personal trust. In general, Northern European countries lead the ranking with high-average levels of inter-personal trust, while populations in African and South American countries seem not to trust others very much. The United States ranks in the top quarter of countries, with an average trust level of more than 40%. The extent to which people trust others, however, varies not only across countries, but also across regions in the same country. Algan et Cahuc (2014) show that trust levels vary remarkably between regions across Europe, the United States and in several other countries.

In addition to better understanding the distribution of trust across countries, researchers have expanded the evidence base on the three observed relationships that justify interest in trust: its relationship with economic activity and GDP growth, with people's subjective well-being, and with governance and public policy. Research on each of these relations is described later on.

Figure 10.4. Average trust in others across 109 countries, 2014



Source: Algan, Y. and P. Cahuc (2014), “Trust, growth and well-being: New evidence and policy implications”, in Aghion, P. and S. Durlauf (eds.), *Handbook of Economic Growth*, Vol. 2, Elsevier, North Holland, Amsterdam, pp. 49-120.

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10.5.1. Trust matters for economic activity and growth

Trust in others is the only statistically significant predictor for the cross-country variation in income per capita and GDP growth after controlling for education, ethnic fractionalisation (number, size, socioeconomic and geographical location of distinct cultural groups), legal origins and political institutions (Algan and Cahuc, 2014). One concern has been that this correlation, first noted by Knack and Keefer (1997), could go the other way around, i.e. from income to trust. Alternatively, the trust variable could be picking up the deeper influence of time invariant features such as legal origins, the quality of institutions, initial education, the extent of ethnic segmentation and geography.

More light on this issue is provided by Algan and Cahuc (2010), who established a steady causal relationship going from trust to income by controlling for confounding factors and reverse causality. Algan and Cahuc used time variation in *inherited* trust of children of immigrants to the United States to explain GDP growth in the countries of their forebears – since children inherit some of their trusting nature from their parents, one can work backward to estimate their immigrant forebears' trust, and use this to estimate the level of trust in the origin country at the time the forebear left. Since their forebears left their home country at different times, one can estimate the level of trust in the home country at different times, obtaining a dataset that traces changes in trust over time in different countries.² This structure of data – a panel dataset – allows the impact of changes in generalised trust on income per capita in the countries of origin to be estimated. By focusing on the inherited component of trust, the authors avoid reverse causality. By providing a time-varying measure of trust over long periods, they can control for both omitted time-invariant factors and other observed time-varying factors such as changes in the economic, political, cultural and social environments.

Algan and Cahuc find a significant impact. Income per capita in 2000 would have been 546% higher in Africa if, all else being equal, the level of inherited trust had been the same as inherited trust from Sweden. Inherited trust also has a non-negligible impact on GDP per capita in eastern European countries and Mexico. Income per capita would have increased by 69% in the Russian Federation, 59% in Mexico, 30% in Yugoslavia, 29% in the Czech Republic, and 9% in Hungary had these countries inherited the same level of inter-personal trust as Sweden. The effect, though less important, is also sizable in more developed countries. Income per capita would have been 17% higher in Italy, 11% in France, 7% in Germany and 6% in the United Kingdom if these countries had had the same level of inherited trust as Sweden. The authors also compare the effect of trust on income per capita and of time-invariant factors such as geography or institutions. For countries in Africa or Latin America, initial economic development and invariant factors have a large impact on income per capita. In contrast, change in income per capita in developed countries is overwhelmingly explained by inherited trust.

Progress has been made not only in understanding the role of trust at a macro-economic level, but also at a microeconomic level. Trust in others shapes the capacity to achieve common goals through pooling of resources, reduced transaction costs and co-ordination failures during economic exchanges, and more generally the way people live together (OECD, 2015). Therefore, innovation, investment, and the functioning of financial and labour markets are contingent on trust (Algan and Cahuc, 2009). Algan and Cahuc (2014) show different channels through which generalised trust can affect economic growth. Trust plays a preponderant role for economic activities – investment and especially innovation – that are affected by uncertainty on account of moral hazard and the difficulties of contract enforcement. The effect of trust also acts through the organisation of firms and the

functioning of the labour market. By facilitating co-operation among anonymous persons, trust favours the emergence and growth of private and public organisations (Fukuyama, 1995; La Porta et al., 1997; Bertrand and Schoar, 2006). Trust favours the decentralisation of decisions within organisations, allowing them to adapt better to alterations in the environment (Bloom, Sadun and van Reenen, 2012). Trust likewise influences the functioning of the labour market through several channels. For example, countries with higher generalised trust have higher levels of co-operative relations between labour and management (Aghion, Algan and Cahuc, 2011); in turn, the quality of employer-employee relations is associated with an array of factors that favour GDP growth and well-being.

Trust matters for subjective well-being

Trust and subjective well-being are positively correlated, and there is growing evidence for this in the literature. For example, Helliwell and Wang (2011) show that trust can mitigate the impact of bad shocks on individuals and is associated with lower suicide rates. Helliwell and Putnam (2004) and Helliwell and Wang (2011) provide cross-country micro evidence on the positive relationship between trust and subjective well-being, and estimate how much this relationship is “worth” in terms of the effects on income. From the 2006 wave of the Gallup World Poll, they use the wallet trust question for 86 countries. Individuals are asked what is the likelihood of the respondent’s lost wallet (with clear identification and USD 200 cash) being returned if found by a neighbour, a police officer or a stranger. Helliwell and Wang estimate that an increase in income by two-thirds is necessary to compensate the welfare loss associated with thinking that no one will bring back your wallet and your documents. For example, to live in a country like Norway (highest mean expected wallet return of 80%) rather than in Tanzania (lowest mean expected wallet return of 27%) is equivalent to a 40% increase in household income. Boarini et al. (2012) take this analysis further, and show that average levels of inter-personal trust at the country level are strongly correlated with the life satisfaction of individuals living in these countries, independently of the individual’s own trust, and after controlling for demographic and economic variables. A more general study on the country’s endowment of relational capital, proxied by the share of the co-operative sector, finds that more co-operativeness is associated with more happiness, after controlling for countries’ Human Development Index and other variables (Bruni and Ferri, 2016).

All these studies focus on cross-country correlations. But the same type of evidence holds within a given community, and changes in trust over time are associated with changes in subjective well-being over time. Helliwell et al. (2009) show that the same result holds in the workplace. Using micro data from Canada (the 2003 wave of the Equality, Security and Community Survey) and the United States (the 2000 wave of the Social Capital Benchmark Survey), the authors find that the climate of trust in the workplace, in particular workers’ trust in their managers, is strongly related to the subjective well-being of workers. On a 1-10 scale, an increase by one point of workers’ trust in managers has the same effect on their life satisfaction as an increase in household income by 30%.

There is also evidence to suggest that generalised trust correlates positively with better health outcomes for individuals (Boreham, Samurçay and Fischer, 2002; Arber and Ginn, 2004). For example, Hamano et al. (2010) studied around 200 neighbourhoods in Japan and found that high levels of generalised trust (along with high levels of membership of associations) were linked with better mental health after controlling for age, sex, household income and educational attainment. A study of Chicago neighbourhoods showed that high levels of reciprocity, generalised trust and civic participation were associated with lower

death rates and rates of heart disease, after controlling for neighbourhood material deprivation (Lochner et al., 2003).

However, the causal pathways between trust in others and well-being are still unclear. One possible explanation of the associations described above is that less-trusting individuals may have a tendency towards social isolation, thereby depriving themselves of many of the positive health benefits of supportive social networks (Glass and Balfour, 2003). Another possible explanation is that people living in higher-trust communities have lower levels of social anxiety, and thus lower levels of chronic stress (Wilkinson, 2000).

To get more causal evidence, recent research has looked at the physiological reaction and brain images of participants depending on their degree of co-operation in the game. Zack, Kursban and Matzner (2004) show that when people co-operate with others in trust games, they increase production of oxytocin. The authors also tested a variant in which the receiver receives a monetary transfer not from a real person but from a lottery. In this variant, the level of oxytocin does not rise with the money received. This result illustrates that it is trust that is associated with sentiments of happiness, and not the mere fact of receiving money. These results have been confirmed by brain images: as soon as individuals do not co-operate in trust games, the insular cortex activates (Sanfey et al., 2003). This area of the brain is known for being active in states of pain and disgust. The main conclusion from this research is that the non-monetary dimension of having trusting behaviour with others affects happiness by more than the monetary gains derived from co-operation. All in all, these results suggest that trust affects many dimensions of social progress, including both economic development and life evaluations, and is a key component of human development at large.

Trust in institutions and social and economic progress

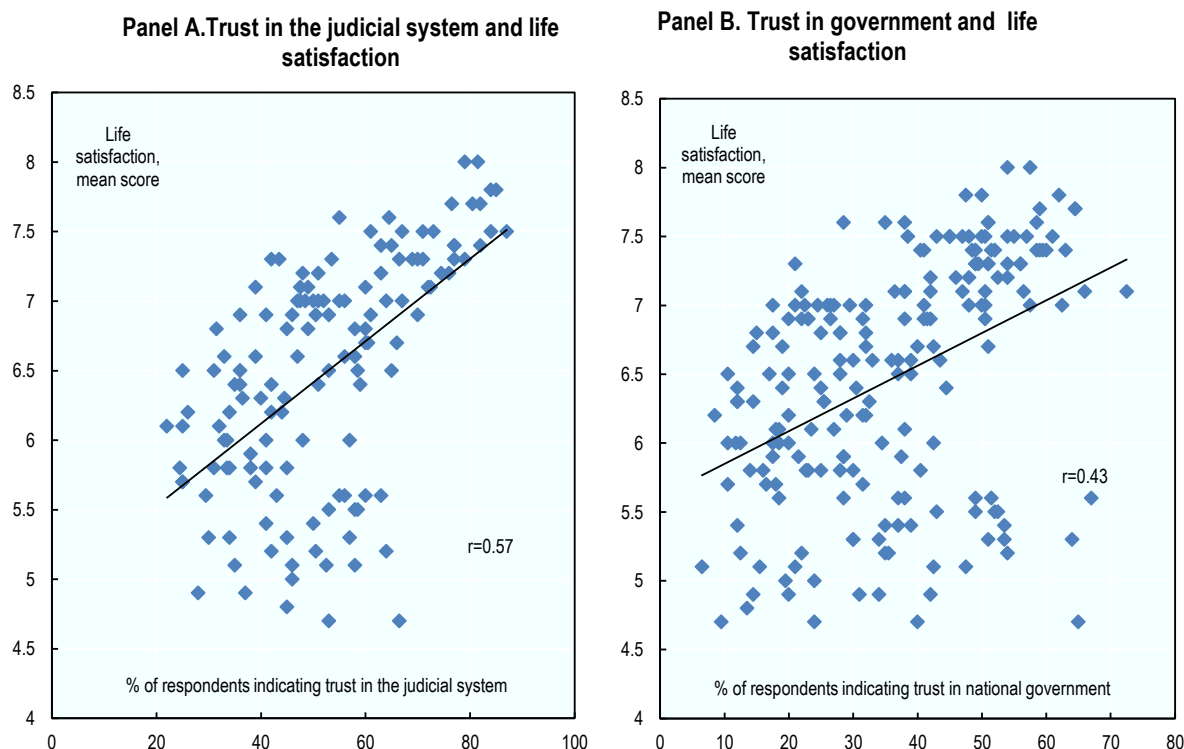
There is also good evidence of a positive relationship between institutional trust and citizen support for government policy (OECD, 2016). In one of the earliest studies on this subject, Knack and Keefer (1997) analysed responses to the World Values Surveys across about 30 countries, finding a positive correlation between measures of citizens' confidence in government and objective indicators of bureaucratic efficiency. In a cross-country analysis, Zhao and Kim (2011) highlight a positive correlation between institutional trust and levels of foreign direct investment. Murphy, Tyler and Curtis (2009) find a strong positive relationship between trust in regulators and voluntary compliance in the area regulated; while Daude, Gutiérrez and Melguizo (2012) find a strong relationship between institutional trust and willingness to pay taxes. There is also a robust cross-country correlation between people's trust in institutions and their perceptions of corruption (OECD, 2013). These studies, based on the correlation between citizen support for government and trust in institutions, need to be understood in a context where there is almost certainly reverse causality, i.e. people are less likely to trust inept or corrupt institutions (highlighting the issue of interpretation of the institutional trust measure discussed above). It should be stressed though that most of these studies are based on correlations and the research still needs to make progress in establishing a causal link between trust in institutions and economic progress.

Trust in institutions is also necessary to maintain democratic systems. The recent trust crisis in Europe is a good illustration of the risks. Algan et al. (2017) show that the financial crisis and Great Recession that followed it, and the inability of European institutions to cope, led to a sharp decline in trust in European and national parliaments, associated with a rise in extreme votes and populism. Algan et al. find a strong relationship between increases in

unemployment and voting for non-mainstream, especially populist parties, and a decline in trust in national and European political institutions. In an effort to advance on causation, the authors extract the component of increases in unemployment stemming from the pre-crisis structure of the economy, and in particular the share of construction in regional GDP, which is strongly related both to the build-up and outbreak of the crisis. Crisis-driven economic insecurity is a substantial driver of populism and political distrust. An important policy implication from the European economic crisis is that national governments and the European Union should focus not only on structural reforms, but also on protecting the trust of their citizens from economic insecurity.

Trust in institutions is also directly related to subjective well-being. Figure 10.5 shows positive correlations between life satisfaction and trust in the judicial system (panel A) and in the government (panel B). This relationship can be explained if trusted institutions function better, and are therefore associated with better outcomes that raise people's life satisfaction. The causality can also go in the other direction though, with people trusting institutions that function better. But there is also evidence of a direct impact of trust in institutions on people's subjective well-being. Frey, Benz, and Stutzer (2004) and Frey and Stutzer (2005, 2006) show the importance of "procedural utility" (i.e. the process through which people are *involved* in making important collective decisions) for people's subjective well-being, independently of the actual outcome of the decision. In this perspective, although a policy decision might increase total income, the welfare effect could be reduced due to the losses resulting from a decision-process perceived by people as unfair or non-democratic. This literature may be important to understand the current rise in populism in much of the world.

Figure 10.5. Institutional trust and life satisfaction, 2006-15



Note: Life satisfaction data comes from the Gallup World Poll. Data on trust in the judicial system and in government are sourced from the Eurobarometer.

Source: OECD (2017), *OECD Guidelines on Measuring Trust*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264278219-en>.

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Trust and income inequality

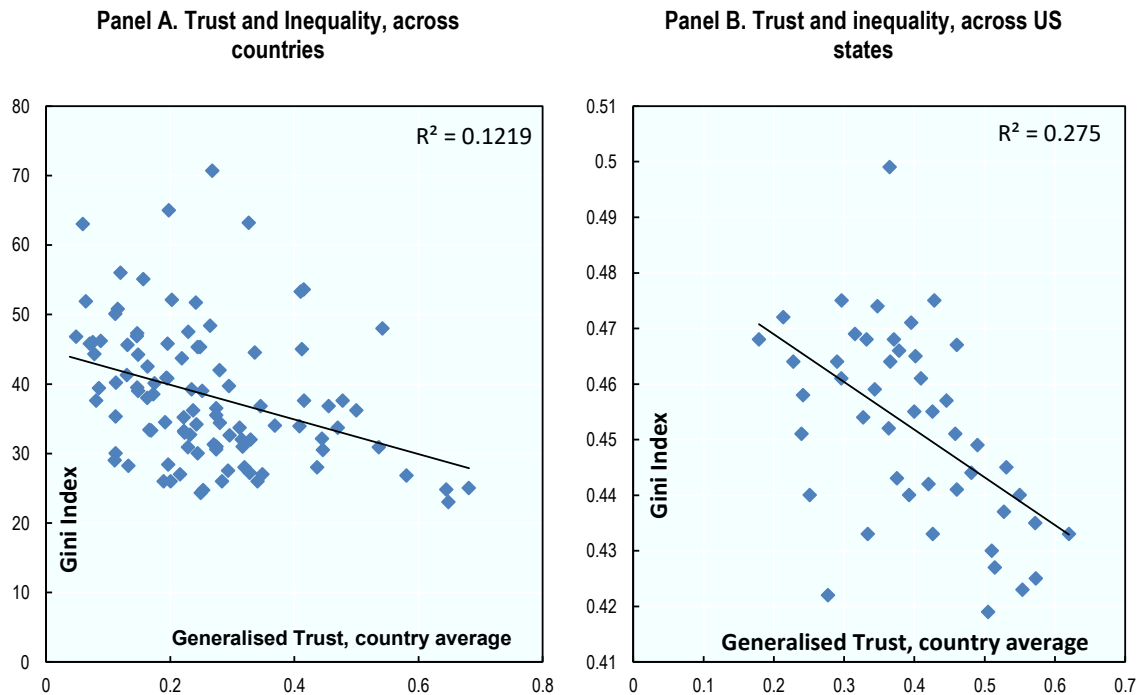
There is a strong negative correlation across countries between generalised trust and Gini indexes of income inequality, both across countries (Figure 10.6, Panel A) and across US states (Panel B). High-trusting societies are more equal (they have lower Gini coefficients), while low-trusting societies typically show higher levels of income inequality. Cross-country and cross-US states regressions controlling for income, population, education and ethnic fractionalisation confirm this correlation (Algan and Cahuc, 2014).

Alesina and La Ferrara (2000) show that this negative relationship between trust and income inequality also holds at a more local level within US counties and municipalities. Rothstein and Uslaner (2005) document a within-states correlation for the United States between the rise in income inequalities and the decline of trust over the last decades. A pending issue is that of causality. Inequality might correlate negatively with trust for several reasons. On the one hand, as suggested by Rothstein and Uslaner, high levels of trust and co-operation might go along with high preferences for redistribution and thereby contribute to lower inequality.³ On the other hand, high inequality can make individuals perceive themselves as unfairly treated by people belonging to social classes different from their own, leading them to restrict co-operative action and trust to members of their own class (Rothstein and Uslaner, 2005). Kumlin and Rothstein (2005) also show that more

universalist and egalitarian welfare state regimes are associated with higher levels of trust than corporatist welfare state systems that divide social benefits by status.

Research is still needed to nail down the causal effect of income inequality on generalised trust. The application of behavioural surveys looking at co-operation between individuals depending on their demographics, status and income would improve the investigation of this causal relationship.

Figure 10.6. Income inequality and generalised trust across countries and US states



Note: Inequality is measured by the average of the Gini Index between 2005 and 2012 (World Bank). Generalised trust is measured as the country average from World Values Survey (1981-2009) and European Values Survey (1981-2008). For the United States, inequality is measured by the Gini index in 2010 (US Census Bureau). Generalised trust is taken from the General Social Survey (1973-2006).

Source: Algan, Y. and P. Cahuc (2014), “Trust, growth and well-being: New evidence and policy implications”, in Aghion, P. and S. Durlauf (eds.), *Handbook of Economic Growth*, Vol. 2, Elsevier, North Holland, Amsterdam, pp. 49-120.

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How can policy affect trust?

Trust varies significantly within countries, depending on income, education, employment status and household type (OECD, 2017). Both generalised trust and trust in institutions are higher among higher income groups and among more highly-educated people, and lower among unemployed people and single-person households with at least one dependent child.

While these patterns hold true across the majority of OECD countries, it is important to study the drivers of trust in the context of countries’ specific circumstances, and how policy-makers could develop such an important type of social capital. If trust plays a key

role in explaining economic and social outcomes, it becomes urgent to identify the institutions and public policies needed for it to develop.

Research on this subject is still in its early stages, due mainly to the lack of adequate behavioural measures across time and localities. Part of the literature considers trust to be a deeply rooted cultural component, whose determinants must be searched for in the long history of each country, with little room for immediate action. However, recent studies on immigrants show that their level of trust gradually converges to the average level of trust prevailing in their country of destination. This ambiguity is well illustrated by the two conflicting views of the evolution of trust given by Robert Putnam. According to “Putnam I” (Putnam, Leonardi and Nanetti, 1993), social capital is largely determined by history. In this account, higher levels of social capital in the regions of northern Italy compared to those in the south originated in the free-city experience during the medieval period. On the other hand, according to “Putnam II” (Putnam, 2000), trust evolves from one generation to the next, and is strongly influenced by the environment. In *Bowling Alone*, Putnam shows that the levels of social capital, as measured by membership of associations and clubs, have starkly declined in the United States since World War II.

Depending on which perspective we take, “Putnam I” or “Putnam II”, the room for policy intervention would be small or large. In fact, both approaches have an element of truth. Trust is partly inherited from past generations and shaped by historical shocks, as the underlying beliefs regarding the benefits of trust and co-operation are transmitted in communities through families (Bisin and Verdier, 2001; Benabou and Tirole, 2006; Tabellini, 2008; Guiso, Sapienza and Zingales, 2008). But another part of trust is shaped by personal experience from the current environment, be it social, economic or political. In Bisin and Verdier’s terminology, both the vertical channel of transmission from parents to children and the oblique/horizontal channel from the contemporaneous environment are at play in building trust. This debate is also influenced by what generalised trust really measures. If trust consists of beliefs about the trustworthiness of others, it is likely that individuals update their beliefs depending on the environment where they live, the civic spirit of their fellow citizens and the transparency of their institutions. If trust consists of deep preferences and moral values, transmitted in early childhood and disconnected from personal experience, as suggested by Uslaner (2002), it might take more time to adjust. Another interpretation is that there are equilibria that persist and are hard to change, unless citizens are nudged with relevant public policy (Hoff and Stiglitz, 2016).

The role of education

The bulk of the existing policy-relevant evidence on the drivers of trust is on education programmes. There is some evidence that more education is associated with higher social capital (Helliwell and Putnam, 2007; Glaeser, Ponzetto and Shleifer, 2007). However, variation in the average years of education of the population across developed countries is too small to explain the observed cross-country differences in trust. Algan, Cahuc and Shleifer (2013) propose a complementary explanation by looking at the relationship between how students are taught and students’ beliefs in co-operation. They show that methods of teaching differ widely across countries, both between schools and within schools in a country. Some schools and teachers emphasise vertical teaching practices, whereby teachers primarily lecture, students take notes or read textbooks, and teachers ask students questions. In this model the central relationship in the classroom is between the teacher and the student. Other schools and teachers emphasise horizontal teaching practices, whereby students work in groups, do projects together, and ask teachers questions. In this model, the central relationship in the classroom is among students.

Consistent with the idea that beliefs underlying social capital are acquired through the practice of cooperation, and that social skills are acquired in early childhood, Algan Cahuc and Shleifer (2013) show that horizontal teaching practices can develop social capital. This evidence calls for adding questions on social capital and teaching methods in traditional cross-country educational surveys such as PISA.

Several studies provide justification for policy intervention in the form of early childhood interventions aimed at developing children's social skills. Recent longitudinal studies suggest that much of the impact of programmes that improve adult achievement (such as the Perry Preschool program or Project STAR in the United States) flows through some sort of non-cognitive channel (Heckman and Kautz, 2012 and Heckman et al., 2013). Algan et al. (2012) use data from a large and detailed longitudinal study following the social, cognitive, and emotional development of men who were kindergarteners in neighbourhoods of low socioeconomic status in Montreal in 1984. The study incorporates a randomised evaluation of an intensive two-year social skills training programme at the beginning of elementary school for the most disruptive children. Those who participated in the training programme had significantly more favourable social and economic outcomes upon reaching adult age. By distinguishing between the different cognitive and non-cognitive channels through which this intervention operates, the authors conclude that non-cognitive skills are the main channel shaping economic outcomes in adult life.

The role of institutions

This chapter has so far treated inter-personal trust and institutional trust separately. But as we have mentioned, a key ingredient of inter-personal trust is the belief that others will behave in a fair and co-operative way. The role of institutions is crucial to strengthen co-operation. This is a real policy lever to build trust in the short-run by improving the integrity and transparency of institutions

Figure 10.7 first shows a strong positive correlation between generalised inter-personal trust and the quality of the legal system for a sample of 100 countries. This correlation is robust to using different measures of institutional quality commonly used in the economic literature (such as the rule of law, the strength of property rights, the enforcement of contracts, as well as government effectiveness, accountability and corruption) and to controlling for other influences of institutional quality.

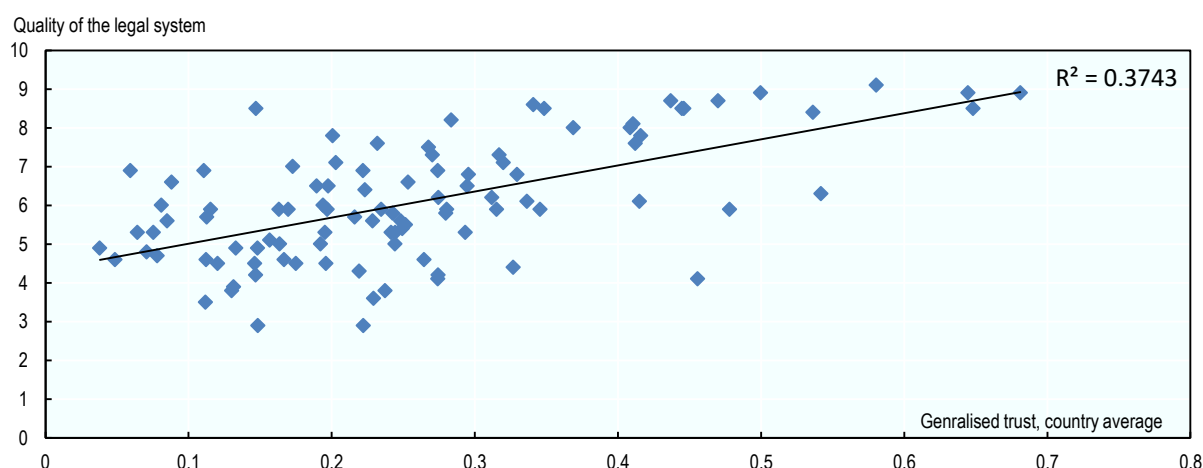
Several papers try to go beyond this correlation by showing a causal impact of legal enforcement on generalised inter-personal trust. Tabellini (2008) provides evidence that suggests that generalised morality is more widespread in European regions that used to be ruled by non-despotic political institutions in the distant past. Weak legal enforcement also forces citizens to rely on informal and local rules, and to develop limited trust as opposed to generalised trust. This pattern is well illustrated by the experience of the Italian Mafia. According to Gambetta (1993), feudalism was formally abolished in Sicily much later than in the rest of Europe, and the state was too weak to enforce private property rights concerning land. The Mafia benefitted from this institutional vacuum by offering local protection through informal patronage.

Other evidence shows that the transparency and integrity of institutions are important drivers of generalised trust not only in a cross-section of countries (Rothstein and Stolle, 2008), but also in an experimental context to isolate causality (Rothstein and Eek, 2009). The main theory behind this channel is that citizens who think that civil servants are corrupt extrapolate the same belief to others and to the population in general (Sønderskov and Dinesen, 2016).

Democratic institutions also have an impact on co-operative behaviour. Bardhan (2000) finds that farmers are less likely to violate irrigation rules when they themselves have set up those rules. Frey (1998) shows that tax evasion in Swiss cantons is lower when democratic participation is greater. All these different works suggest an impact of democracy on co-operation.

An alternative approach for identifying the effect of institutions on co-operation is to mimic formal and legal rules in experimental games. Formal and legal rules implemented in experimental games obviously differ from real institutions. But this setting has the advantage of providing a controlled experiment to estimate how people change their co-operation and trust depending on exogenous variations in the rules of the games. Fehr and Gächter (2000) analyse co-operation in a public goods game, showing that free riders are heavily punished even if punishment is costly and does not provide any material benefits to the punisher. The opportunity for costly punishment causes a large increase in co-operation levels because potential free riders face a credible threat. In the presence of a costly punishment opportunity, almost complete co-operation can be achieved and maintained during the games. Herrmann, Thöni and Gächter (2008) have used this set-up to measure conditional co-operation in 16 different cities across the world. They find that co-operation for the funding of the public good is the highest in Boston and Melbourne and lowest in Athens and Muscat. This ordering is highly correlated with the rule of law and the transparency of institutions in the corresponding country. Similarly, Rothstein (2011) uses various experiments with students in Sweden and Romania showing that their generalised trust and trust in civil servants decline substantially when students witness a police officer accepting a bribe. His interpretation is that the absence of transparency in institutions and of civic spirit by public officials can have very large damaging effects on generalised trust: if public officials, who are expected to represent the law, are corrupt, people infer that most other people cannot be trusted either.

Figure 10.7. Generalised trust and quality of institutions



Note: Measures of the quality of the legal system are taken from the Economic Freedom of the World Index (2007). Generalised trust is measured as the country average from World Values Survey (1981-2009).

Source: Algan, Y. and P. Cahuc (2014), “Trust, growth and well-being: New evidence and policy implications”, in Aghion, P. and S. Durlauf (eds.), *Handbook of Economic Growth*, Vol. 2, Elsevier, North Holland, Amsterdam, pp. 49-120.

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10.6. Conclusions

We propose three main recommendations to make progress on the measurement and analysis of inter-personal trust and institutional trust, and on how to reinforce the complementarities between survey measures and experimental measures.

10.6.1. Survey measures of trust

Survey measures will always out-perform experimental platforms in terms of sample size and coverage, but there is room for improvement, harmonisation and expansion. As discussed above, current survey measures have various shortcomings: their small sample size, which makes it impossible to get a comprehensive description of the level of trust at the local level and to analyse the economic, social and policy determinants of trust; their relatively poor coverage, particularly over time, which makes it difficult to analyse how policy reforms affect the evolution of inter-personal trust and trust in institutions; and the heterogeneity across surveys in question wording and response scales.

We recommend two steps:

- Invest in research about methodological issues such as question wording, scale use, and priming effects (i.e. how memory of a preceding stimulus influences response to the question being asked) in trust questions; and move towards a common and integrated approach to measurement for data producers. Institutional trust in particular would benefit from additional methodological research. The *OECD Guidelines on Measuring Trust* are an important step into this direction and include a set of prototype question modules that cover both inter-personal and institutional trust and can be readily inserted in household surveys.

- Include trust measures, especially the generalised trust question, in official (and unofficial) surveys. As shown above, the validity of the questions about interpersonal trust has been firmly established, and this dimension is critical for social progress and well-being. To maximise the use of these data, we need larger sample sizes, more detailed geographic locations, and time variation to provide policy-makers with more useful conclusions about the impact of trust and how to best support it. More research should be done on institutional trust. In addition to the shortcomings in coverage shared by inter-personal trust, we lack a sufficiently deep theoretical understanding of what the construct of institutional trust is. While institutional trust measures based on self-reported surveys are still worth collecting, further developing experimental measures of trust in institutions (discussed below) will be an important part of this line of research.

10.6.2. *Experimental measures of trust*

The important value-added of experimental measures is that they describe observed behaviours and provide a true sense of bilateral co-operation between different individuals and groups within a society. They are not better than survey measures in all respects, but they have a different and independent set of biases, so that we can learn something important from looking at the two approaches combined. We thus recommend expanding these measures, in particular *TrustLab* which combines classical laboratory experiments with a more traditional internet-based questionnaire based on a representative sample. Progress in this field requires actions to improve the validity of these two approaches:

- Develop behavioural measures of trust in institutions. Implicit Association Tests are a promising step in this direction, allowing attitudes difficult to capture through explicit self-reporting to be measured (Greenwald et al., 2002). Implicit Association Tests have been successfully applied to measure perceptions, stereotypes and attitudes towards commonly stigmatised groups such as black people, women or old people. The combination of these behavioural measures of institutional trust with survey questions and their application in different geographic contexts and over time will be of great help.
- Reinforce the complementarities between survey and experimental measures by harmonising questionnaires. Falk et al. (2016) have conducted representative surveys with a few questions first validated from small experimental samples of students showing a consistency between behaviours in the lab and self-reported surveys. It would be important to enlarge the focus beyond trust by developing and refining a short survey module on norms and values and include such modules in official surveys. The *Guidelines on Measuring Trust* refer to some questions of Falk's Global Preference module in their prototype question modules.

10.7. Wrapping up

If trust is so important for well-being and social progress, policy should focus not only on building it but also protecting it. Trust, and more generally social capital, is characterised by an important asymmetry: it is much more easily destroyed than built. And a negative shock to trust can have an enduring effect on the level of co-operation within communities, as illustrated by the persistent effect of the slave trade on contemporaneous trust in Africa (Nunn, 2009): slavery was a devastating shock, whose consequences lasted for centuries.

There are important lessons from this experience, for example on the response to more recent shocks such as the rapid deregulation of markets in transition economies and the financial crisis. As documented by Aghion et al. (2010), the sharp deregulation of markets in the 1990s in former communist countries, in the context of an initially low co-operative and trusting environment, led to a rise in non-co-operative values and in distrust towards others, and to a demand for the return to higher regulation to correct the negative externalities generated by antisocial attitudes. This natural experiment also shows the importance of considering the initial level of trust between individuals and in institutions before recommending any policy reform.

The recent financial crisis provides another illustration of how rapidly the stock of trust can be depleted. As shown by Algan et al. (2017), the financial crisis and the inability of European institutions to cope with its devastating economic effects led to a sharp and dramatic decline in the level of trust in institutions in some countries, especially Southern European countries that previously were the most trusting of the European project.

Governments need the trust of their people to successfully address current and future policy challenges, and to be able to convince the public about the efficacy and necessity of certain – a priori unpopular – policy choices. Inter-personal trust is an important factor for economic growth and development. The loss of trust might then explain the enduring economic crisis in some parts of the world. Trust might well be damaged persistently for generations, even after economic recovery. Insufficient measurement of non-monetised capital (such as human, social, and natural capital) will lead policy-makers to ignore it, and to invest insufficient resources to protect it. Inadequate investment to cushion shocks, for instance in social safety nets, means that the social capital and well-being of generations could be lost forever.

We need better measures of trust, at higher frequencies, with better geographic coverage and based on more representative samples in order to analyse how trust is affected by shocks, how it can be preserved, and how relevant policies can restore and reinforce it.

Notes

1. Coleman (1990) proposes a similar distinction between “strong ties”, defined as the quality of the relationship among family members; and “weak ties”, defined as the strength of social relationships outside the family circle.
2. For instance, by comparing Americans of Italian and German origin whose forebears migrated between 1950 and 1980, you can detect differences in trust inherited from these two source countries between 1950 and 1980. You can get time-varying measures of trust inherited from these two countries by running the same exercise for forebears who immigrated in other periods, for instance between 1920 and 1950.
3. This issue could be addressed in future research by looking at inequality in market income, i.e. before redistribution.

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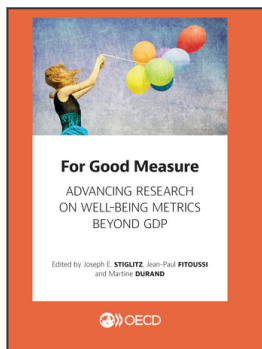
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