THE SOCIAL-ECOLOGICAL MARKET ECONOMY IN GERMANY

General characteristics, main features and current challenges of a unique and successful economic system

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FOREWORD

GIZ is a federal enterprise in the field of international cooperation for sustainable development and international education works. It is active in more than 120 countries worldwide, supporting partner countries in implementing political, economic and social transformation processes for a better future. Over the past few years, our partners have increasingly sought a joint dialogue to exchange information on specific German policy experiences – for example the social-ecological market economy, decentralisation and fiscal decentralisation, or the dual system of administrative training.

Partner countries are keen to analyse these "Made in Germany" approaches, compare them with their own reform ideas and to examine which elements, approaches and experiences may be relevant for them. GIZ's Governance Fund commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) addresses this specific demand. Through a network of experts, it makes German experience and knowledge available to partner countries around the world, helping policy makers shape reform initiatives and thus supporting various reform processes. The aim is not to treat the German policy experiences as a mere blueprint, but to use it as a basis for a necessary joint identification of successful and useful elements and an analysis of their relevance for the respective partner country.

As a basis for a dialogue with our partners, the Governance Fund commissioned four studies that illustrate German policy experiences. The studies were discussed and revised in a peer review process by experts with practical policy experience (e.g. former state ministers), with specialists from GIZ and from partner countries.

So far, the following studies have been prepared:

1. The Social-Ecological Market Economy in Germany", carried out by Dr. Lars Handrich, Prof. Dr. Alexander Kritikos, Dr. Anselm Mattes and Franziska Neumann, commented by Jost de Jager, Schleswig-Holstein's Former Minister of Economic Affairs

2. "Federalism and Decentralization in Germany – Basic Features and Principles for German Development Cooperation", carried out by the University of Potsdam: Prof. Dr. Sabine Kuhlmann, Prof. Dr. Ulrike Fleischer and Prof. Dr. Harald Fuhr

3. "Reform and Future of Financial Equalization in Germany – Benefits for Development Cooperation", carried out by Dr. Michael Thöne (Executive Board Member of the Institute for Public Economics at the University of Cologne) and Jens Bullerjahn (Former Minister of Finance of Saxony-Anhalt)

4. "Elements of Success and Ideas for Transfer Based on Germany's Dual Public Administration Education", carried out by the German Research Institute for Public Administration: Raphael Marbach, Carolin Steffens, Marius Herr, Prof. Dr. Dr. Jan Ziekow

Prof. Dr. Alexander Kritikos and his colleagues of the German Institute for Economic Research (DIW), the authors of the study, and Jost de Jager, former Minister of Economic Affairs of the State of Schleswig-Holstein, bring together the scientific expertise and political experience that we want to combine in our project.

With the study, we want to encourage discussions with partner countries about the usefulness of the German experience in the field economic policy. It addresses policy makers as well as the broader professional public interested in reform processes and development policy. Our thanks go to the authors and to stakeholders and colleagues at home and abroad whose valuable comments contributed to the success of the study.

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EXECUTIVE SUMMARY

The economic system of Germany evolved over a period of many decades since WWII, but its roots go back even further. Since about the 1980s, the economic system of Germany can be characterised as a Social-Ecological Market Economy with the main focus on maximising common welfare. It consists of three pillars:

- **Economic prosperity:** At the core of the market economy is the individual human being. Indi-viduals act self-responsibly and interact with other individuals within a framework of balanced rules, which aim at maximising overall welfare. The German market economy operates within clear boundaries and institutions fostering vibrant competition and innovation creat-ing material wealth and economic growth.

- **Social cohesion:** A highly developed social welfare system and a progressive tax system ensure a broad redistribution of welfare gains among different social groups and across regions. A comprehensive social safety net protects individuals and secures the desired level of social cohesion, which in turn contributes to economic prosperity.

- **Ecological sustainability:** Unregulated markets tend to overly exploit natural resources and contribute to global warming. Hence, ecologically imperfect market outcomes require interventions to safeguard a healthy environment. Ecological policies in Germany rely on standards and regulation as well as on specifically designed market mechanisms.

The political and societal consensus in Germany to operate within the boundaries of the Social-Ecological Market Economy is stable over time – the most important prerequisite for a smooth func-tioning of the social-ecological market economy. These principles of the Social-Ecological Market Economy are rooted in the German constitution, which creates an "institutional memory" for social-ecological economic policies. This means that changes in government are not followed by fundamen-tal changes in policies as far as the concepts of the social-ecological market economy are concerned.

The German economic success story builds upon a large and innovative industrial sector, a strong base of medium-sized firms ("*Mittelstand*") and the integration into and commercial success in international markets. Germany's export strength does not build on abundance in cheap labour or natural resources, but on a long tradition of global excellence in manufacturing. In particular, the automo-tive sector, machinery, chemistry, medical technology and electrical equipment are successful industries. At the same time, Germany maintains high social standards and relatively high marginal tax rates. Maintaining high social and environmental standards may be costly in the short term, but these high standards are also key drivers for productivity growth and sustained long-term technological development. Germany's general approach is quite unique in the way it is actively shaping the social and ecological character of its economy through appropriate regulation, promoting private initiative and innovation and supporting development through public-private collaboration.

Therefore, the German institutional set-up and policy mix can provide important insights for policy makers in other (developing and emerging) countries, striving for long-run economic stability and smart, sustainable, and inclusive growth. However, there is no universal quick path for economic growth and social well-being. Both require trust and stability, whose development takes time.

Finally, it has to be noted that there are limits to the transferability of the German system. The German Social-Ecological Market Economy is an integrated system of coordinated rules, institutions and cooperating stakeholders. Thus, it will unfold only limited impact if selected policies or aspects of this system are copied and applied to other countries without adapting them to the country-specific circumstances. The report features several examples of policy transfer, including successful projects, but also limiting factors.

PREFACE

"Germany's economic performance is impressive" states the IMF in May 2018 (IMF, Germany: Staff Concluding Statement of the 2018 Article IV Mission, May 14, 2018). The German economic success story builds upon a large and innovative industrial sector, a strong base of medium-sized firms ("*Mittelstand*") and the integration into and commercial success in international markets. At the same time, Germany maintains high social standards and relatively high marginal tax rates. Strong labour unions are actively involved in corporate governance. Germany is also known for its passion for environmental protection and its energy transition ("*Energiewende*"). Economic, social, environmental and climate change policies are supported by a broad societal consensus. Maintaining high social and environmental standards is costly in the short term, but these are also key drivers for productivity growth and sustained long-term technological development.

The impressive German development has renewed international interest in the drivers of the success story. Therefore, the Advisory Fund for Structural and Regulatory Policy Reforms (FSRP), managed by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and funded by the German Federal Ministry of Economic Cooperation and Development (BMZ) commissioned DIW Econ with a report on the German Social-Ecological Market Economy, exploring its main features, institutions and key stakeholders. The German institutional set-up and policy mix can provide important insights for policy makers in other (developing and emerging) countries, striving for long-run economic stability and smart, sustainable, and inclusive growth. At the same time, however, the German example illustrates the limits and challenges of the transferability of institutions and policies into different contexts and the long periods that are required until reforms turn into success. The German unification serves as a natural experiment in this respect. Since 1990, formerly communist East Germany received a comprehensive transfer of institutions and rules, huge financial transfers, a change of elites and the dispatch of decision makers from the West. Whereas the economy in East Germany made remarkable progress in many aspects, there is still a significant gap in terms of productivity and wage levels. Despite the same language and a common heritage, similar cultural and widely shared social values, there is still a long way to go until working and living conditions will converge to the full extent. Keeping this in mind, we supplemented our analysis where suitable with examples for transferability of institutions and concepts, which we obtained through interviews with experts from GIZ.

Overall, the German experience is very valuable for policy makers. The study starts with an overview of the general concept of the German social-ecological market economy, followed by a more detailed discussion of the economic, social and ecological dimensions of it. The study then addresses current challenges for policy-making in Germany.

1. CHARACTERISTICS OF THE SOCIAL-ECOLOGICAL MARKET ECONOMY

The economic system of Germany evolved in response to social and economic structural changes and crises, caused by globalisation and European integration, demographic and environmental developments, innovation and technological change. Since about the 1980s, the economic system of Germany has been characterised as a Social-Ecological Market Economy with the main focus on maximising common welfare.[1] It consists of three pillars:

- **Economic prosperity:** At the core of the market economy is the individual. Individuals act self-responsibly and interact with other individuals within a framework of balanced rules, which aim at maximising overall welfare. The German market economy operates within clear boundaries and institutions fostering vibrant competition and innovation and a strong export-orientation creating material wealth and steady economic growth.

- **Social cohesion:** A highly developed social welfare system and a progressive tax system ensure a broad redistribution of welfare gains among different social groups and across regions. A comprehensive social safety net protects individuals and households and secures the desired level of social cohesion, which in turn contributes to economic prosperity.

- **Ecological sustainability:** Unregulated markets tend to overly exploit natural resources and contribute to global warming. Hence, ecologically imperfect market outcomes require interventions to safeguard a healthy and diverse environment. Ecological policies in Germany rely on standards and regulation as well as specifically designed market mechanisms.

The political and societal consensus in Germany to operate within the boundaries of the social-ecological market economy is widely shared and apparently stable over time – the most important prerequisite for a smooth functioning of the social-ecological market economy. The debate is about the specific kind and optimal level of policies and market interventions by the government. But neither the fundamentals of the market economy nor the necessity to regulate for social and ecological reasons are questioned. These principles are enshrined in the German constitution, which creates an "institutional memory" for social-ecological economic policies. This means that changes in government are not followed by fundamental changes in policies as far as the concepts of the social-ecological market economy are concerned. For example, it is not conceivable that a new German government would abolish all ecological taxes or nationalise private firms because such actions would not be in line with the principles of the social-ecological market economy. Similar binding constraints exist also at the European level and Germany as a member of the European Union is committed to the principles of the EU. The EU sets the direction in areas like trade and investment policy, competition and agriculture.

1.1 Ensuring prosperity through competitive markets

The term "market economy" determines the underlying framework for organising all kinds of economic exchange within a country. Market forces serve as drivers of overall prosperity and growth, through competition-induced technological progress and the efficient use of labour, capital, knowledge and other production factors. Competitive markets foster the division of labour and the improvement of skills, which leads to dynamic growth of productivity, innovation and an increasing general standard of living.

In a market economy the actors, i.e. individuals such as workers or organisations such as firms, freely exchange goods and services. Prices are generally determined by the forces of supply and demand (and not set or indirectly influenced through barriers to firm entry or firm exit by state authorities). Usually the price mechanism leads to efficient outcomes.

Even though markets in general have the potential to foster prosperity and growth, a well-functioning competitive market requires a government to intervene and correct market failures. The government sets and enforces basic rules for all, maintains institutions like the fair legal system ensuring individual property rights and levelling the playing field for all market participants. Such rules and institutions especially comprise

- that the government provides public goods (like public safety, basic research, transport infrastructure, or protection against natural disaster) in sufficient quantities,

- that it prevents collusion, monopolies and to a certain extent oligopolies (for instance by easy market access for potential entrants or by prohibiting certain

[1] Germany has an even longer long tradition of a Social Market Economy, which was gradually further developed into the Social-Ecological Market Economy.

mergers), or regulates the latter to prevent the abuse of market power, and

- that it strives to internalise negative or positive external effects wherever they occur (by incentivising instruments such as taxes, allowances, or compensations).

Furthermore, equity concerns are important reasons for government intervention. Each society must continuously debate and agree on the desired levels of intervention and redistribution.

Environmental concerns like preserving the environmental heritage and ecological diversity are important aims by themselves providing reasons for government intervention beyond market failures. The following sections are dedicated to these paramount objectives of the social-ecological market economy.

1.2 Objectives of the Social-Ecological Market Economy

A market economy – albeit subject to a reasonable level of regulation and intervention by the government – evolved as the generally accepted, superior economic system for achieving prosperity and sustained economic growth by focussing on the individual acting on their own responsibility. In a complementary way, the attributes "social" and "ecological" define a common understanding of further objectives beyond economic prosperity, ensuring social inclusion and ecological sustainability. Both, social inclusion and ecological sustainability overall positively influence productivity and are self-sufficient objectives, with a value that is independent of the immediate productive capabilities of humans and of natural assets.

The **social character** of the economic system is reflected in a comprehensive social welfare state and redistribution through a progressive tax system. The system secures social participation for all members of society by satisfying their basic needs and preventing poverty. The core of the German welfare state demands that all members of society contribute in a solidary manner according to their individual capabilities and take common responsibility for those who are – temporarily or permanently – unable to support themselves (ability-to-pay principle, in German "*Leistungsfähigkeitsprinzip*"). Striving for a social balance comprises equality of opportunities independent from individual wealth, gender, ethnicity, religion or any other individual circumstances. High-quality and free of charge education, a sophisticated vocational training system, and permeability of professional and social barriers are key to equal opportunities, the reward of merit and, as a result, social cohesion.

Whereas questions of social justice have historically been at the core of policymaking, **ecological concerns** are a rather recent addition to the policy mix, with the limits of resources and planetary boundaries becoming increasingly visible: climate change, the irreversible destruction of natural habitats, declining ecological diversity and depletion of resources. Consequently, economic growth urgently needs decoupling from the use of natural resources (including land). However, market forces, by their very nature, typically do not account for common assets (or "public goods") such as a healthy and diverse environments. Market prices do not reflect ecological harm because the latter comprises an external effect. Therefore, societies need to actively take measures for environmental protection and preservation. Specifically, the ecological character of the German market economy is reflected in

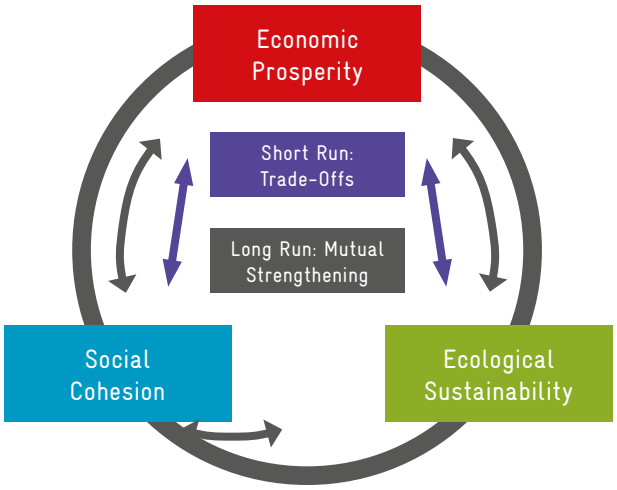
- the internalisation of external effects on the environment, for example through pricing greenhouse gas emissions and obliging producers to mitigate environmental pollution,
- the active further development in order to decarbonise technologies, and
- a transition towards a circular economy, supported by recycling of resources and increased efficiency of material and energy use.

1.3 Balancing the objectives of the Social-Ecological Market Economy

In the short run the three objectives of economic prosperity, social cohesion and ecological sustainability are apparently traded off against each other. For example, phasing out environmentally harmful technologies (e.g. coal-fired power plants) or the obligation to impose measures for environmental protection or restoration result in immediate higher (monetary) costs of production. High standards of social protection and strict industrial safety regulations may reduce – in the short term – international competitiveness. But in the long run such policies have strengthened the productivity of the workforce and preserved natural assets. Furthermore, such policies trigger innovation and technological advances at the firm level to stay competitive.

Specific policies always need to strike a balance between various valid interests. Trade-offs between short-term economic performance and long-term social and ecological sustainability are a daily occurrence.

FIGURE 1-1: THE SHORT-RUN TRILEMMA AND LONG-RUN SYNERGY OF THE OBJECTIVES OF THE SOCIAL ECOLOGICAL MARKET ECONOMY



Source: DIW Econ.

In the long run however, there is no systematic contradiction between prosperity, social welfare and environmental preservation, but rather mutual interdependence. None of these objectives can be neglected for long without also harming one of the other two. Furthermore, obligations that may be costly in the short-run may prove beneficial even in terms of income in the medium and long run, as technological improvements are typically path-dependent. For example, the cost of power generation from renewables declined steeply and eventually renewables turn out to be less costly than power generation from fossil fuels such as coal.

The social welfare state promotes high levels of overall and individual productivity and public safety, which forms the basis of societal stability and individual well-being.

2. THE MARKET ECONOMY

2.1 Characteristics

In 2017 the German economy featured a gross domestic product (GDP) of EUR 3.26 billion, and was the fourth largest economy worldwide. In terms of GDP per capita, which amounted to EUR 39.5 thousand in 2017, Germany belongs to the richest ten percent of all countries.[2] Germany is an open, export-oriented and highly industrialised economy.

Germany's economy relies especially on a relatively broad and strong tier of medium-sized companies ("*Mittelstand*"), many of whom are global technological leaders in their special markets ("hidden champions") and thus engage intensely in international trade. Germany has a strong tradition of companies managed by their owners (*inhabergeführte Unternehmen*) not only in retail and service-oriented sectors but in manufacturing as well. Family owned companies act differently in times of crisis, possess longer time-horizons and maintain closer relationships with their employees.

Germany's export strength does not build on abundance in cheap labour or natural resources, but on a long tradition of global excellence in manufacturing. In particular, the automotive sector, machinery, chemistry, medical technology and electrical equipment are successful industries. "Made in Germany" is a well-known brand and German products are characterised by high quality and steady innovation. However, in the context of digitisation, other sectors such as ICT and business services gain importance.

2.2 Economic policies

Three main drivers of the German economic success are (i) **sound economic policies**, (ii) **responsibly co-operating stakeholders** and (iii) **well-designed framework conditions** fostering business activities and economic growth.

With regard to economic policy-making, one can distinguish between **regulatory policies** and **discretionary policies**. The former set the legal and institutional framework within which firms, employees and consumers operate and interact. The objective of regulatory policies is to build framework conditions that ensure an effective functioning of markets and foster economic growth. Germany has a long tradition of rule-based economic policies, following the tradition of ordoliberalism ("*Ordoliberalismus*") where sticking to well-designed rules is favoured over discretionary interventions by policy-makers. A set of such framework conditions is discussed in section 3.4.

[2] Absolute values obtained from the Federal Statistical Office 2018 (National Accounts 2017). Worldwide ranking following the International Monetary Fund, World Economic Outlook Database 2017.

In contrast to long-term oriented regulatory policies, discretionary policies are rather short-term oriented and often designed to exert immediate influence over the business cycle or to influence recent economic developments via instruments such as government spending, tax rates, tariffs and quotas, subsidies or interest rates set by the central bank.

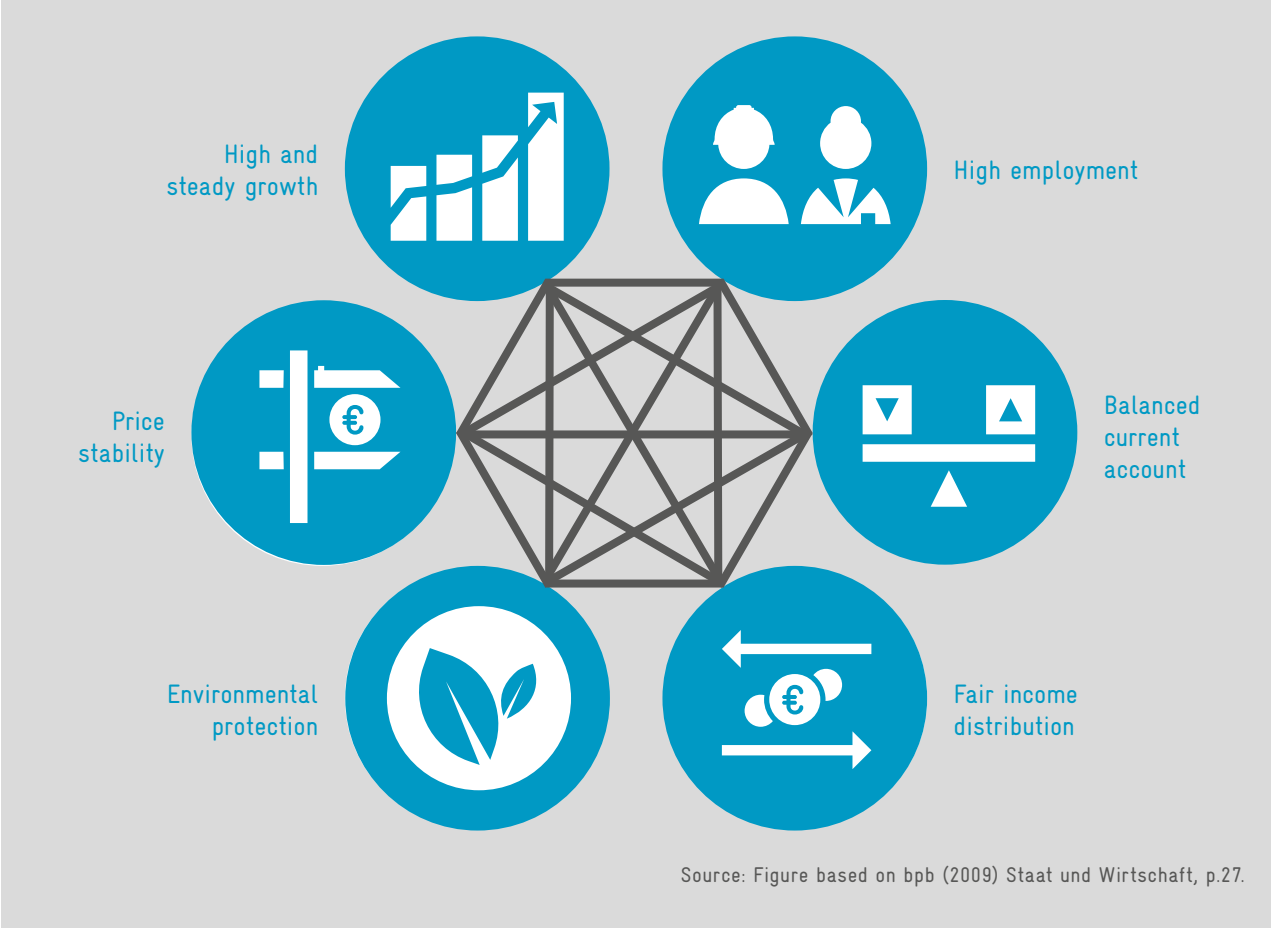
Both types of policies have to be considered in the respective context and both seek to maintain a strong economy, to shape and control the functioning of the market. A popular representation of the main goals of economic policies is the magic square of economic policy ("*Magisches Viereck*") set down in the stability and growth law of the Federal Republic of Germany ("*Stabilitätsgesetz*"). It represents four main goals of macroeconomic policy-making: a high and steady economic growth rate, a high employment rate, price stability, and a balanced current account.

Over the years, it has been suggested that economic policy should no longer be limited to the pure economic dimension, but also to include broader societal objectives. The idea of the magic square of economic policy targets has thus been enlarged by two additional elements, forming a "magic hexagon": a fair income distribution (see section 4) and environmental protection (section 5).

One policy area of particular interest is economic growth policy ("Wachstumspolitik"), i.e. policies aiming at high growth rates of economic output, usually measured by the gross domestic product (GDP). On the one hand, economic policy-making must ensure a stable macro-economic environment, e.g. a stable currency with low, predictable inflation rates and minor fluctuations in macro-economic demand. Such policies are often short-term, discretionary policies such as fiscal stimuli. While fiscal policy is still a relevant macro-economic steering instrument of the government, especially at the occurrence of crises, monetary policy in the Euro-area has been assigned to the European Central Bank, i.e. it is coordinated on a supranational level. On the other hand, and more importantly, sustained economic growth is not only based on macro-economic factors and policies, but primarily on providing optimal and equal framework conditions for firm of all sizes (from small to large) and industries, for investors and entrepreneurs.

In general, growth-enhancing policies need longer periods of time to show results than the democratic election cycle. This timely mismatch is not very attractive for policy-makers seeking re-election because they cannot exert directly perceptible, short-term influence on economic growth. Nevertheless, one key factor of German success in eco-

FIGURE 2-1: THE "MAGIC" HEXAGON



Source: Figure based on bpb (2009) Staat und Wirtschaft, p.27.

nomic policies is that there is a consensus on all established parties that governments remain committed to long-run growth policies and to providing stable and predictable framework conditions for economic growth. If policy changes occur, they are often more gradual and carefully phased-in over time. A pivotal example for such policies is innovation policy. All German governments – independently of the political party currently in charge – are committed to ensure and improve the innovative capacity of German firms and the overall economy. This includes continuous long-term investment in public funded research, the protection of intellectual property rights (e.g. patents), ensuring competition between firms and open markets, a highly educated workforce and also subsidies for innovative activities within firms.

2.3 The concept and stakeholders of "social partnership" and co-determination

The concept of social partnership is a key element of Germany´s political and economic system and a fundamental part of the "social market economy". Apparently opposing interests between employers and employees are balanced through a system of social partnership and co-determination with the goal of achieving consensual solutions, to minimise economic losses due to strikes and other labour conflicts and to maximise welfare and its fair distribution. Article 9 (3) of the German Constitution establishes the basis of social partnership, by protecting the rights of

- freedom of association (*Vereinigungsfreiheit*) and
- freedom of collective bargaining (*Tarifautonomie*).

In consequence, employers as well as employees have the right to associate in groups with common interests and to negotiate wages and labour conditions in a process of collective bargaining and without the involvement of the government.

Trade unions are key actors within the system of social partnership, as they represent the employees of a specific sector. Employees, who individually have inferior structural power than their employers, can organise in trade unions to articulate their collective interests and to increase their bargaining power for higher wages, better social security or improved working conditions. Additionally, trade unions provide their members with legal protection to defend them from actions taken by employers, such as dismissal or other law suits. In contrast to many other countries, unions in Germany are non-partisan, often single unions, i.e. there are not several unions in one sector with competing ideological positions.

Business associations are formed (on a voluntary basis) to represent business interests towards negotiating partners from abroad or other industries, the government and other public institutions, or the general public. A specific form of business associations are **employers' organisations**, which act as the counterparts of trade unions in collective bargaining representing employers' interests in negotiations with trade unions.

Wages and working conditions in Germany are generally set by **collective bargaining** agreements between labour unions and employers' organisations. The underlying principle of social partnership and collective bargaining is subsidiarity, i.e. agreements that affect an entire sector should be negotiated at the lowest possible level of governance. The reason for this is that employees and business representatives in a specific sector of the economy are generally better informed about the detailed conditions in their respective sector than others, such as the national government. Therefore, they are in the best position to efficiently decide on most appropriate levels of wages and working conditions.

Co-determination

A German peculiarity is a very comprehensive system of **co-determination** at the establishment level as well as at the firm level. The German **Betriebsverfassung** (firm/establishment constitution) assigns an important role to works councils. Works councils are elected in a democratic manner by all employees within a firm or its establishments. Works councils are quite powerful and have extensive rights regarding the day-to-day organisation and conditions of work within a firm or its establishment. These comprise inter alia information rights (e.g. on employee data, firm strategies, wage levels), consultation rights (e.g. on operational procedures or on planned layoffs), the right to propose changes in working conditions, and co-determination (e.g. on working hours of shift workers).

Furthermore, employees and labour unions are entitled to delegate representatives to the supervisory board of large firms such as public listed companies. Depending on the size of the company, worker representatives have a third up to a half of all votes in the supervisory boards. Thus, employees and trade unions do not only influence day-to-day work conditions, but feel also responsible for their firms by being included in the definition of long-run firm strategies (e.g. expansion in foreign markets or investment into new technologies).

Advantages of social partnership and co-determination

The system of social partnership has many advantages. In contrast to other countries, where firm owners and employees (or trade unions and employers´ associations) strive for their own short-term benefits, in the system of

social partnership both sides share the common interest of a well-functioning company and fairly-treated employees. Therefore, the aim of negotiations is to achieve a consensus. From the perspective of trade unions, it has the main objective to let employees participate in the gains of productivity growth and to have a say in labour conditions. In this way, by carrying out a distributive function, the system of social partnership is an important driver of social cohesion. In addition, the regular, institutionalised dialogue between workers councils and firm management as well as between employers' associations and trade unions forms an essential element of economic and social stability.

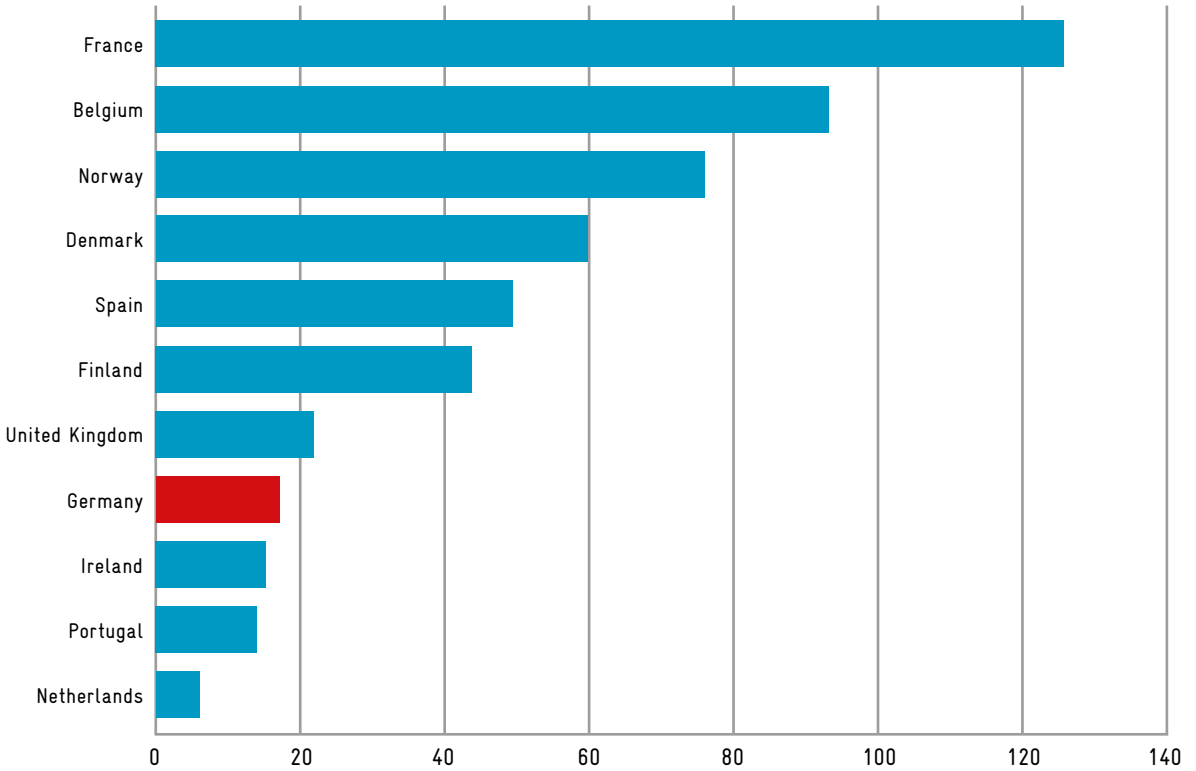
Additionally, within the system of social partnership, both sides negotiate and develop concepts for structural and technological change, health and safety at work, social topics, and measures in times of crises like short-time work. Such negotiations are conducted on equal terms in a way that balances out the interests of companies and the employees. The law grants both sides the right to use forcing measures (e.g. trade unions: strikes; employers' associations: lock-outs). However, due to the cooperative relationship between trade unions and employers and because of industrial peace obligations during the duration of collective agreements, such measures are rarely used in Germany, as indicated by Figure 2-4:

Strikes and similar conflicts bear immense costs for the economy as a whole through the loss of production. By effectively confining the times of strike through dialogue and a general balance of power, the system of social partnership saves society from a great deal of conflict costs.

2.4 Framework conditions as factors of growth

The success of the German social-ecological market economy depends on stable and economic growth-friendly framework conditions and less on short-run discretionary policies. Overall, the growth-related aspect of the German framework conditions is their institutional character and the ability to reduce both, risks and transaction costs, what allows economic agents more freely to pursue economic activities. The most important institutions that reduce risk and transaction cost and drive the economic prosperity of Germany are – inter alia – the reliable legal system (section 3.4.1), an effective public administration and a fair regulatory system with well-designed competition policies (section 3.4.2), and a high-quality infrastructure (section 3.4.3). Last but not least, the system of education and research completes the picture (section 3.4.4).

FIGURE 2-4: AVERAGE DAYS NOT WORKED DUE TO INDUSTRIAL ACTION PER 1,000 EMPLOYEES (2010-2016)



Source: European Trade Union Institute (2017).

2.4.1 A reliable legal system

To allow market forces to unfold, it is of crucial importance that state authorities set up and sustain an appropriate legal framework enforcing property rights. Property rights define an owner's rights to use a good or asset for income generation and/or consumption, for instance farmers' rights to grow crops on their fields and sell or consume their harvest. Property rights protect owners from expropriation through authorities or theft from other individuals or organisations.[3] Protected property rights, in concurrence with freedom of contract and a stable legal system, increase economic prosperity through the following four channels:

- Individuals have **stronger incentives** to exert effort, take risk and **engage in productive activity**, when they know that they will be able to reap the rewards.
- Enforceable property rights allow individuals to spend less time and resources on defending their property (less risk and reduced transaction costs), the latter being an unproductive activity from an economic point of view.
- Property rights allow the use of property as collateral and thus **facilitate the functioning of credit markets**. In turn, credit provision accelerates economic growth. Clearly defined property rights in combination with enforceable contracts ensure that means of production are put to their **most productive use**.

Thus, the reliable German legal system secures property rights which is fundamental to economic prosperity. But how can property rights be preserved? It is of key importance that no single (political) institution has incentives and/or possesses power for excessive expropriations. Importantly, the power of any state authority has to be limited, even if it is considered as benevolent, as institutions otherwise cannot credibly commit to securing property rights. Several features of the German system ensure proper incentives against extractive behaviour by state authorities:

- State power is limited through the **division of powers**, in particular through **independent courts**. A crucial factor for an effective legal system is the speed of decisions by courts, i.e. that property rights can be enforced within a reasonable time.
- If **long-term reputation** matters for **political institutions** which is the case in Germany, they have an additional incentive not to engage in extractive behaviour.
- The state mandates the **monopoly to use force**. i.e., the state must be able to exert power to protect property rights, as the only enforcer of rights. Article 20 of the German constitution codifies this so-called *Gewaltmonopol*. While it is key that the power of particular institutions of the state is limited, this does not imply a weak state.
- Basic **rights are codified in the constitution**. In case these rights are violated through laws or the action of state authorities, every citizen can turn to the **Constitutional Court**. The Constitutional Court has the final say on all legal matters. The German constitution guarantees in particular:
- **Freedom of contract** is guaranteed implicitly through Article 2 of the German constitution.
- The **right to property** is codified in Article 14 of the German constitution. This article also states that property shall be used also for the common good, including social cohesion.
- Article 3 of the German constitution guarantees **equality before the law**. Thus, all people can exert their rights, independent of personal characteristics such as income, religion, gender or race.
- Article 20a of the German constitution demands the state to **protect the natural foundations of life** for future generations by pursuing ecological objectives.

[3] This applies in a similar way to intellectual property rights, too. The protection of intellectual property rights, for example by patent registers, incentivises private research and development. That is because it allows firms (for a limited timespan) to take advantage of the exclusive rights over their product or technology, which enables them to recover their expenses and receive a risk premium.

FIGURE 2-2: PROPERTY RIGHTS, LEGAL SYSTEM AND ECONOMIC PROSPERITY

Source: DIW Econ.

2.4.2 Public administration, regulation and competition policies

The previous section has pointed out the importance of well-defined property rights and non-extractive institutions for economic prosperity. **Low transaction costs** generally allow for the best use of resources. In particular, **registering** means of production as one's **property** must be possible **quickly** and at relatively **low costs**. This is but one aspect of the **ease of doing business**.

The Ease of Doing Business Index, created by the World Bank[4], ranks countries according to various factors measuring how easily companies can be set up and operate in the market. As of 2017, Germany was ranked 20th of 190 countries. An effective administration requires stronger property rights, but other aspects matter, too. **Quick and effective courts** imply that individuals and companies can exert their rights at relatively low costs.

Commercial law is important in supporting investors and the private economy in general. Complex regulations make it difficult to understand the legal circumstances of any investment. An important step, therefore, is the comprehensive codification of legislation. Overregulation of commercial activity prevents entrepreneurs from starting a business and investors from investing in productive businesses.

The other side of the coin of regulation, the issue of corruption, must also be addressed. The level of corruption has negative impacts on business and investment activities in a country, as it increases the (informal) costs of doing business and distorts economic decisions.[5] A first step in **fighting corruption** is limiting the power of particular state authorities and bureaucrats (among others by a codification of economic rules and laws) and by introducing an independent and sufficiently funded judiciary system with reasonably paid judges. Moreover, the following measures have proved successful in the German case:

- The German Criminal Code makes it **illegal for any person to offer, pay or accept bribes** without exceptions.
- The Administrative Offences Act holds **companies responsible for corruption offenses** committed on their behalf.
- **Civil servants (*Beamte*) have a special legal status** and relationship with the state. The loyalty is regarded as mutual, civil servants have a duty of service (*Dienstpflicht*), and the state has a special duty of seeing to their welfare (*Fürsorgepflicht*). This means that *Beamte* enjoy several privileges and are appointed for life – a status considered very attractive in Germany. This incentivises civil servants to act in line

[4] See http://www.doingbusiness.org.

[5] Again, consider the example of renting out machinery to a producer. Well-defined property rights ensure that the owner is – in principle – entitled to regain possession of the machinery at the end of the rent contract. However, if judges are corrupt, substantial costs might be related to the assertion of this right. This might make the machine owner reluctant to rent the machinery out in the first place.

with the requirements of their position. Furthermore, penalties for corruption are relatively severe – prison of up to five years for holders of public offices and up to ten years of prison for judges (§ 332 of the German Criminal Code).

- **The Federal Court of Auditors** (*Bundesrechnungshof*) examines the financial management of the federal government and various public institutions. In addition, it provides recommendations to state authorities to improve measures against corruption. It operates independently from the federal government and its role is codified in the German constitution (§ 114).

- Many public authorities have implemented **internal and/or external auditing** processes. The auditing units are independent from the rest of the office and as such fulfil the role of another supervisory authority, improving efficiency and compliance at public authorities.

The role of the state also includes legislation on the **self-governing bodies** of the business community. By law, there are 81 Chambers of Commerce (*Industrie- und Handelskammern*) in Germany. Equivalents exist for the skilled trades (*Handwerk*) and professions. Membership is mandatory for every firm and goes along with a fee according to the size and turnover of the individual company. This mandatory membership is subject to controversy, but the Chambers play a very important part in regional lobbying, business and technology development and participation in legislation when business interests are involved (consultative function). Government authorities also delegated some public administration responsibilities to the chambers as well as tasks in promotion of foreign trade and vocational training (see section 2.4.4).

Although this is no exclusive characteristic of the German economic model, it seems as if in Germany this interaction of enterprises and policy making on all levels of the state organization has proved to be particularly successful. This might be the case because the German system of regional self-organisation of businesses is met by a decentralized state architecture that ensures a direct approach to political and administrative decision-making throughout the country. In this context, it needs to be emphasized that for a successful economy, municipal leaders need to be committed to create an excellent local business climate (efficient, fast administration, excellent primary and secondary education, and good health services). It is essential that municipal leaders have an incentive to create "hands on" the right environment for productive firms in their community. In Germany, municipalities are therefore entitled to a share of the locally produced tax-income and a local business tax (*Gewerbesteuer*), rewarding their efforts to create an attractive business environment.

The role of competition policy

Market forces foster the optimal and most productive use of resources. However, markets unfold their full effect only if both demand and supply are competitive, i.e., when there are many buyers of a product, who can choose between products by different producers or can easily switch to a different product. In absence of competition firms may abuse their market power by setting high prices and selling less products and lack incentives to innovate and improve their products. Therefore, the aim of competition policies is that ideally **no single company exerts strong market power**.

In case of the **network industries** such as railways, power and gas distribution, postal services and telecommunication competition on the market is limited and high shares of market concentration are not avoidable due to natural monopolies. To prevent abuse of dominance and market failures regulatory intervention is required. In Germany, the network industries are regulated by the **Federal Network Agency** for Electricity, Gas, Telecommunications, Post and Railway (*Bundesnetzagentur*), which monitors non-discriminatory access to the networks under transparent circumstances, and examines the access charges, decides on tariffs charged and secures consumer-friendly, efficient, and environmentally sustainable supply of services and products. This approach can be summarized by the slogan "**as much market as possible, as much state as necessary**".

The **Federal Cartel Office** (*Bundeskartellamt*) is an independent competition authority whose task is to protect competition in Germany and serve the interest of consumers. The protection of competition is a key regulatory task in a market economy. Its tasks include

- Exposing and sanctioning cartels

- Deciding on potential mergers and acquisitions

The independence of the competition authority is of high importance. If, for example, politicians had to decide on mergers and acquisitions, they would tend to decide in favour of their electorate and lobby interests and not necessarily in the interest of competition and consumers in the entire country. Competition can be further stimulated by low barriers for market entry and market exit.

Box 1: Transferability – the example of competition policy

Competition between enterprises is one of the key success factors for any market economy. However, competitive markets depend on a strong legal framework and strong institutions. In Germany, there is a system of national and EU-level competition policies and laws setting the level playing field for private firms. These competition laws are enforced by the German Federal Cartel Office (Bundeskartellamt).

In the aftermath of the 1997 Asian financial crisis, the IMF mandated in exchange for the rescue package for Indonesia the creation of a competition authority. GIZ supported the introduction of a modern competition policy and law in Indonesia (and subsequently in the entire ASEAN). A major obstacle was initially that the Indonesian establishment demanded the law to be directed at large Chinese-Indonesian enterprises, but not at Indonesian firms. However, sound competition policy – in particular from a German, ordoliberal perspective – must address all firms equally, irrespectively of size, type, and nationality of ownership. Due to continuous Indonesian high-level political support and technical assistance from Germany, including a former head of the German Federal Cartel Office as a senior advisor, the Indonesian parliament adopted a modern competition law. However, the technical implementation of the law and the establishment of the new competition authority presented some difficulties. For example, traditional Indonesian market regulations included price controls; influencing prices indirectly – through competition policy – was a very new approach. A significant challenge was to establish a competition authority in a corrupt environment. This included its independence from the government, but also strong internal control and proper incentive mechanisms. Also, other institutions and private sector players continued to question the new authority. But the new competition authority could quickly demonstrate the benefits of its existence to consumers and firms by introducing competition in the previously monopolised domestic air travel market and by breaking up of a cartel in the mobile telecommunications industry. Both competition cases lead to lower prices and significant welfare increases for consumers and hence, contributed to the popularity of the competition commission.

However, in the long run, a competition authority can provide welfare increasing results only as long as it enjoys sufficient support from other institutions, such as the parliament, which needs to approve its key personnel, the government and its executive agencies, courts, and the private sector. As such support weakened in recent years in Indonesia, only few more successful competition cases followed. The Indonesian example demonstrates that complex concepts, such as competition policy, can in principle – but not easily – be transferred to other countries.

Source: Interview with Frank Tibitanzl, competition policy expert at GIZ.

2.4.3 High-quality Infrastructure

Economic performance fundamentally depends on reliable and efficient physical infrastructure for transport, communication, energy and water supply. Furthermore, it is crucial that such infrastructure does not only exist, but that it is also commonly available for everyone.

Transport infrastructure covers roads and railways, ports and airports, but also widely available and reliable public transport. It is absolutely necessary both for private and business matters, ensuring personal freedom of mobility and low transport costs for interregional and international trade. Germany has traditionally been a top performer with regard to road infrastructure, which is necessary for public as well as individual transport to be quick and generally affordable. A high-quality and dense network of roads and highways (Autobahn) is crucial for market access and a determinant for spatial inclusion, so that no region is left behind for being far off the commercial and cultural centres. The German state maintains and provides this network as a common good.

Digital networks – especially mobile communication and broadband – turned into crucial infrastructure, as they present an essential prerequisite of the digitisation of wide areas of business and society. This pertains to various forms of interaction among consumers and businesses as well as production processes. While Germany enjoys a rather competitive mobile communications market the current roll-out of broadband is lacking behind. Having had the benefit of a universal and high-quality public switched telephone network (PSTN) during the last century, Germany still widely relies on those lines for digital information transmission. It has become evident lately, however, that due to the limited potential of copper lines for high-speed synchronous data traffic, there is a need to roll out glass fibre networks as one way to keep pace with the latest

technical and commercial developments. Still, less than ten percent of the German population have access to glass fibre lines by now. While state aid will in any case be necessary for a speedy and universal availability of fibre networks, the design of efficient instruments, keeping the costs low for consumers and society as a whole, presents a challenge not yet solved.

Besides physical infrastructure, broad and easy access to financial infrastructure presents another crucial determinant for a healthy business environment. The German state – in this case the states and local governments – provides a decentralised structure of state owned banks, business development agencies and guarantee funds which ensure access to finance and funding as well as availability of commercial space for small and medium sized enterprises (SMEs), which are the backbone of the German economy. As a general rule, these support structures do not operate in parallel to commercial banks and financial services as a kind of subsidy scheme but are obliged to cooperate with the private sector in consortiums and function as providers of guarantees for restructuring processes and investments.

Box 2: Transferability – the example of cooperative banking and public saving banks

German banking is a three pillar system featuring private banks with a relatively small market share in international comparison, as well as cooperative banks and public savings banks. Cooperative banks and public savings banks enjoy a long tradition and mainly serve private clients and small and medium-sized enterprises in Germany (so called "Mittelstand"). Public savings banks are particularly committed to the cities and towns of their residence and usually in municipal ownership. Often, local cooperative banks were initially developed as self-help organizations for SMEs.

The basic idea of cooperative banks is very close to the modern idea of micro-finance. Therefore, the German banking system attracted interest from many developing countries. Various GIZ programmes successfully promoted the idea of local cooperative banking and engaged in the transfer of the related banking know-how, e.g. in China from 2006 to 2013.

But the concept of public savings banks proved hard to transfer to other countries. These banks are not under direct state control, but still ultimately in public ownership. Therefore, the sector needs strong control mechanisms and checks and balances to avoid that corrupt local elites exploit local savings banks and the deposits of local retail clients for their own advantage. GIZ experience shows that in many developing countries, such checks and balances to control local elites are hard to implement.

Source: Interview with Thorsten Giehler, finance expert at GIZ.

2.4.4 Education & Research

Technological progress has been identified as the (only) source of long-run economic per capita growth. Technological progress involves research and development in order to create new products and businesses, ultimately increasing productivity, but it likewise requires the workforce to be adequately educated to play their parts in state of the art production technologies.

The rapid transformation towards **knowledge-based economies** is under way, with fast increasing levels of automation, digitisation and use of artificial intelligence. The most prosperous economies are at the same time the most technologically advanced. Especially in the light of limited resources and increasing environmental pressures, future welfare gains will depend strongly on innovative, resource-saving products and processes. Consequently, maintaining prosperity and economic growth will crucially depend on education and research, **open not only to a minor elite, but to the whole population**.

Free of charge high-quality public schools and public universities accordingly form the basis for the German knowledge-based society and economy. Primary and lower secondary education is compulsory for every child. Everyone, regardless of their financial and social background, is admitted to free of charge upper secondary and tertiary education at public schools and universities. This means that education is not a privilege of the wealthy and only individual abilities restrict admission to higher education. There is a broad acceptance of higher education as a public good. From an economic perspective, this is efficient: With a socially permeable educational system, the entire economy does not waste potential by excluding highly capable people from knowledge and skills, thus confining them to low-skilled work.

For the society, tax funding education pays back by raising overall productivity and, thus, high tax revenues and higher social insurance contributions. But beyond that, free of charge education is also a basic requisite for achieving social cohesion: Skills and knowledge form the necessary equipment for professional and financial advancement, thus providing for social permeability.

The **vocational education and training system**, a worldwide highly recognised feature of education in Germany, has proven remarkably successful at producing large numbers of professionals who are able to combine excellent theoretical skills with practical knowledge. The vocational training system is set up in a way that it produces standardised skills which closely match the current demand on the labour market. Thus, the vocational training system reduces risks and transaction costs for both, employers and successful trainees. Only few other European countries have similar kinds of vocational education, although its characteristics imply some major advantages:

- It combines theory, taught at public vocational schools, and training in real-life work environments, often in small and medium sized companies.
- There is close cooperation between state institutions and private enterprises, which is regulated by the Vocational Training Act of 1969 (amended in 2005).
- Trainees obtain nationally (and internationally) recognised standardised professional certificates, issued by competent bodies.
- For many companies, dual training provides an advantageous form of recruitment as they avoid the risk of hiring employees that do not have the appropriate skills. Furthermore, the training period provides trainees with the opportunity to develop long-term commitment and identification with the company.

Box 3: Transferability – the example of vocational education

The German dual vocational education and training system relies on the institutionalised, long-term cooperation of the Chambers of Industry and Commerce and state bodies with private firms. Although its elements cannot be copied easily, the system's underlying principles may serve other countries as guidelines for implementing (dual) vocational education and training systems that fit to their local institutional and economic as well as cultural conditions.

To this effect, GIZ together with a number of other development cooperation institutions in Germany have defined a set of five "quality characteristics", derived from the German system, to provide starting points for implementing vocational education and training systems and, at a later stage, reference for evaluation:

1. cooperation between public institutions and private sector associations, chambers or single enterprise
2. on-the-job learning
3. societal acceptance of standards
4. training of teaching staff
5. institutionalised research and consultancy services

With regard to the acceptance of standards, Albania, EU candidate since 2014, forms an interesting example. Development cooperation in Albania aims at providing its young professionals with appropriate qualifications not only for the domestic, but also for European markets. The GIZ project "Sustainable Economic development, employment promotion and Vocational Education and Training" in Albania accordingly supports the implementation of higher quality standards oriented at Germany and the EU, for instance by establishing the new concept of a "Multifunctional Vocational Education Centre", developing adjusted curricula and training teachers. Fields such as elderly care and ICT network management are in the major focus. The project joined the efforts of the responsible Albanian agency[6], industry representatives, researchers and German vocational education institutions.

Source: Bundesinstitut für Berufsbildung (BIBB), GIZ (2017). 10 Jahre Qualitätsmerkmale im Praxistest – Deutsche Berufsbildungszusammenarbeit aus einer Hand and interview with Kristin Hausotter, expert at GIZ.

[6] National Agency for Vocational Education and Training and Qualification (NAVETQ).

Germany maintains a **broad and well-positioned science and research infrastructure**. The German state funds different types of research institutions, including universities, universities of applied sciences, and non-university research institutes. Most of the latter are closely affiliated to universities (e.g. Max Planck Institutes, Fraunhofer Institutes, Helmholtz Institutes and Leibniz Institutes) and thus contribute to a creative R&D ecosystem. These ecosystems are also frequently fuelled by knowledge-based start-ups. The close cooperation of research institutions with the private sector is a specific feature of the German R&D and higher education system. The research institutions take on different roles along the path from basic research and applied research up to product and process development. The latter is often privately co-funded and conducted in public-private cooperation and networks. Technology transfer is perceived as a core task of German higher education and research institutions.

With regard to basic research especially, providing it publicly is highly beneficial for technological progress and economic success. This is largely because basic research is rarely commercially viable, but it often forms the basis for a broad range of possible further developments and applications. With those applications turning into marketable innovations, social welfare increases as well as tax revenues. There is yet another reason for maintaining an excellent research infrastructure: By attracting world-class researchers and providing cutting-edge research results, there is a high chance to also attract high-tech firms and establish international, commercially successful high-tech hubs.

Whereas basic research is mostly beneficial to provide publicly, it is crucial for modern knowledge-based societies to also make it worthwhile to privately conduct specialised and applied research that builds upon the translation of the knowledge created by basic research.

Box 4: Transferability – the example of higher education

Political partners are increasingly interested in implementing higher education programmes following an integrative approach of development cooperation and academic cooperation which

- perceives the private sector as a regular partner to foster the practice-orientation of study programmes and thus enhance the employability of graduates;
- strengthens industry linkages in R&D (cooperation in basic and applied research for technology transfer);
- implements a triple helix model of innovation (interactions between academia, industry and government);
- focusses on research-based doctoral training and education; and
- strengthens inter-institutional and international networking for joint knowledge generation and knowledge sharing; sector-crossing cooperation for knowledge transfer;

One successful example of transferability is the bilateral NoPa Programme (Novas Parcerias, "New partnerships for innovation in sustainable development") with Brazil. The NoPa Programme entails innovative concepts as it works in the interface of technical and scientific cooperation. Among other activities, the project implemented a "Research-into-Use Workshop", a technical advisory group and a platform for sector-crossing dialogue to shape the innovation ecosystem, including matchmaking events. Thematic research areas were derived from sectors relevant for the strengthening of a social-ecological market economy in Brazil: Renewable energy, energy efficiency, Biodiversity, Protection and sustainable use of tropical forests, land and environmental regularization as well as vulnerability and adaptation to climate change. Within NoPa, the triple helix model was even extended: The bilateral cooperation is based on a sector-crossing and international multi-actor partnership between GIZ (development cooperation), the German Academic Exchange Service (DAAD) as well as German universities and research institutes, and enterprises on the German side and Brazilian ministries, CAPES as research funding agency, universities, research institutes and enterprises on the Brazilian side. The NoPa model with its holistic and participative approach is now used by a number of partners in Brazil for future research and sector-crossing cooperation supported by a conducive innovation ecosystem. As an unexpected result, other countries will also apply the NoPa model. Two new technical cooperation programmes in Peru and Ecuador have integrated it into their methodological approach and will use it to promote innovation and a closer cooperation between technical cooperation for sustainable development and Science and Technology Cooperation in these countries, with Peru integrating

Source: The content of this box was provided by GIZ.

3. SOCIAL COHESION

3.1 Social security and social inclusion in Germany

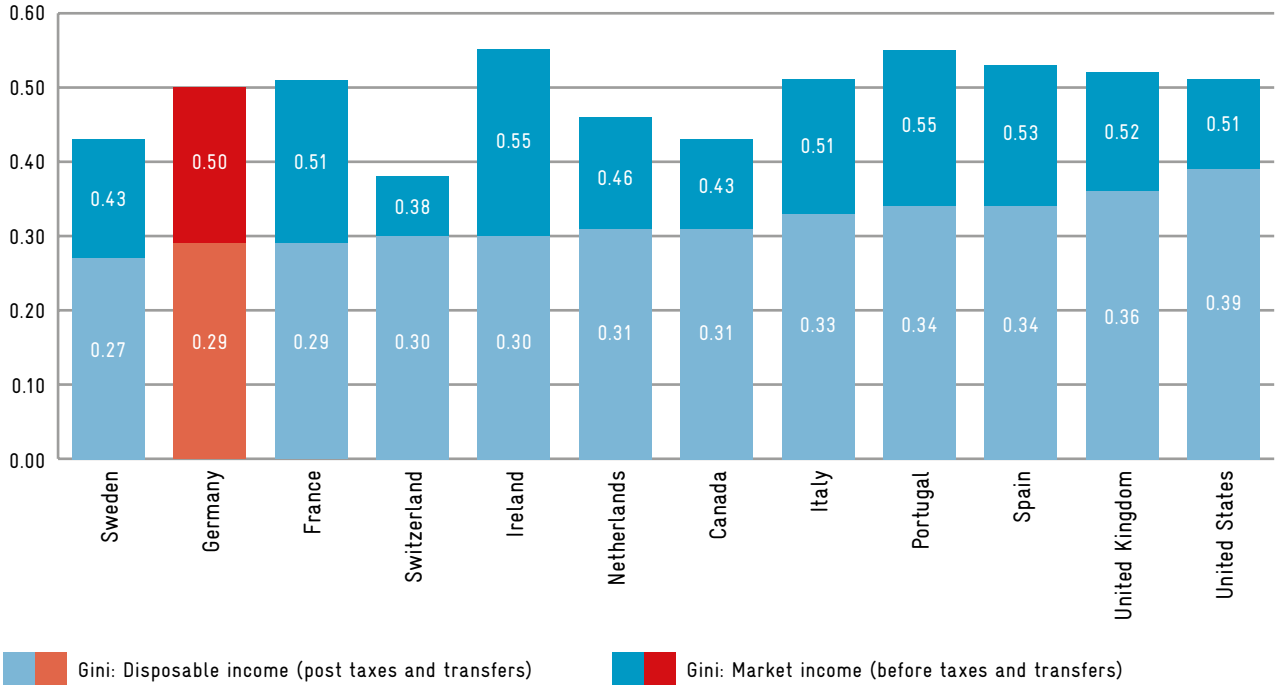
The German social welfare state has a long tradition, with social security and social inclusion forming some of the most important and generally little disputed objectives of German policy-making. Social policies are important ingredients of the German market economy. Social spending as measured by the OECD accounted in 2016 for 25.3 % of German GDP, what is well above the OECD average of 21 %.[7]

Both, social inclusion and security command that everyone contributes to society and community according to their own abilities (ability-to-pay principle), while afterwards the proceeds are redistributed in a manner that all participate in the prosperity created by the market economy.

The German redistribution policies can be best illustrated by calculating the Gini-coefficient before and after redistribution. Based on market income before taxes and transfers, the Gini coefficient of inequality takes a value of 0.50 in Germany, which is mid-range compared to other countries.

However, after redistribution by taxes and transfers the German value of 0.29 is among the countries with rather low Gini coefficients among OECD countries (Figure 3 1).[8] Only few other countries achieve similar levels of redistribution. For example, market income before taxes and transfers is similarly distributed in the United States with a Gini coefficient of 0.51. But redistribution policies in the USA are much less comprehensive, resulting in higher inequality of disposable income post taxes and transfers with a Gini coefficient of 0.39. In the Netherlands, one of Germany's neighbours, market income is more equally distributed than in Germany, with a Gini value of 0.46 compared to 0.50, but taxes and transfers play a minor role such that disposable income is more unequal, with a coefficient of 0.31.

FIGURE 3 1: GINI COEFFICIENTS OF INEQUALITY OF HOUSEHOLD INCOME BEFORE AND POST TAXES AND TRANSFERS, 2014



Note: Indicators are based on the central concept of "equivalised household disposable income", i.e. the total income received by the households less the current taxes and transfers they pay and plus the transfers they receive, adjusted for household size with an equivalence scale. Higher Gini values indicating higher levels of inequality. The coloured spaces indicate by how much inequality is reduced through redistribution.

Source: OECD 2018, Dataset: Income Distribution and Poverty, available at OECD.Stat.

[7] OECD (2018), Social spending (indicator); doi: 10.1787/7497563b-en, available at https://data.oecd.org/socialexp/social-spending.htm.

[8] The Gini coefficient, describing the distribution of income across individuals, is a widely accepted measure of inequality in a country. It is based on the proportions of overall income belonging to cumulative shares of the population by order of income level. Accepting income to be non-negative, Gini coefficients range between zero and one, with zero indicating perfect equality. If total income was claimed by only one individual, this would imply a Gini coefficient of one.

3.2 A fair and balanced income distribution as economic growth factor

Although taking care of those who are in need is a matter of humanity and hence an end in itself, redistribution in order to avoid poverty, social security and equality of opportunity are also important means of achieving an economic balance and sustained growth.

There is an intensive discussion with regard to the negative macroeconomic effects of rising inequality. This has several reasons. First, macroeconomic stability requires a convergent development of supply and demand. A fair and balanced wage distribution mediated by collective wage bargaining as laid out in section 2.3 as well as income redistribution by progressive income taxation are important factors for demand to keep pace with growth in domestic supply, driven by productivity improvements.

Furthermore, in order to maintain a motivated, creative and capable workforce, it is crucial to keep them from immediate existential threats and material deprivation. First of all, healthy and content workers are more productive than deprived workers. Apart from immediate health and security, labour productivity crucially depends on motivation and identification with one's employer. People tend to reduce their working efforts when they feel unfairly treated or even exploited by their employers.

3.3 Key elements of the German social welfare state

Ever since is the German social welfare state getting more and more comprehensive and caring. Total German social expenditures accounted in 1960 for 18.3% of GDP, growing until 1990 to the level of 24.1% of GDP and until 2017 to the highest ever recoded level of 29.8% of GDP or an estimated total of EUR 962 billion. The current projections of the German Federal Ministry of Labour and Social Affairs indicate that social expenditures will stay at the current level of GDP until 2021 (BMAS, Sozialbericht 2017, T-1).

The key element of the German social welfare state is the statutory social insurance system, which comprises pension insurance, health and nursing care insurance, unemployment insurance, and occupational accident insurance. This statutory social insurance system accounts for EUR 586 billion or 61.8% of total social expenditures in 2017 (see table 3-1). Mandatory social insurance contributions are collected from individual employees, hence are bound to employment. Participation in social insurance is generally compulsory for both employees and employers. The obligations to social contributions ensure that all employees and employers take responsibility for society as a whole, due to the common sharing of risks.

Social insurance spending is to a great extend independent of direct government control and state budgets. Most expenditures are regulated by law and individual contributions to the system are generating individual claims. All branches of the statutory social insurance system and the different insurance funds are governed by representatives of employers as well as employees (i.e. labour unions). In this respect Germany differs from social welfare states like in Scandinavia or the United Kingdom, where social expenses are funded from the general tax revenues.

TABLE 3-1: GERMANY'S SOCIAL BUDGET AND ITS COMPONENTS

		1991		2000		2010		2015p		2017e	
		EUR billion | % of social budget									
	Social Budget (total)	**395.5**	**100**	**608.0**	**100**	**768.7**	**100**	**885.4**	**100**	**962.0**	**100**
1	**Social insurance systems**	**252.7**	**64.9**	**396.7**	**66.3**	**471.4**	**62.0**	**534.2**	**61.1**	**586.7**	**61.8**
11	Pension insurance	133.2	32.1	217.4	33.8	253.7	31.6	282.5	30.7	304.5	30.4
12	Health insurance	92.7	22.4	132.1	20.5	173.9	21.7	211.9	23.0	232.2	23.2
13	Nursing care insurance	0.0	/	16.7	2.6	21.5	2.7	27.9	3.0	37.3	3.7
14	Occupational accident insurance	7.6	1.8	10.8	1.7	12.1	1.5	12.9	1.4	13.4	1.3
15	Unemployment insurance	35.6	8.6	49.7	7.7	36.2	4.5	27.4	3.0	30.6	3.1
2	**Special schemes**	**3.6**	**0.9**	**5.7**	**0.9**	**27.9**	**3.5**	**33.0**	**3.6**	**35.8**	**3.6**
21	Age insurance for farmers	2.5	0.6	3.3	0.5	2.9	0.4	2.8	0.3	2.7	0.3
22	Pension funds of the professions	1.1	0.3	2.0	0.3	4.3	0.5	5.6	0.6	6.4	0.6
23	Private pension	0.0	/	0.0	/	0.2	0.0	0.4	0.0	0.5	0.1
24	Private health insurance	0.0	/	0.0	/	19.7	2.4	23.1	2.5	24.7	2.5
25	Private nursing care insurance	0.0	/	0.5	0.1	0.8	0.1	1.1	0.1	1.5	0.1
3	**Public sector schemes**	**35.7**	**8.6**	**51.6**	**8.0**	**59.7**	**7.4**	**71.4**	**7.8**	**77.3**	**7.7**
31	Pensions for civil servants	23.3	5.6	34.9	5.4	43.8	5.5	53.1	5.8	57.7	5.8
32	Family allowances	5.9	1.4	7.0	1.1	3.0	0.4	3.5	0.4	3.6	0.4
33	Aid ('Beihilfen')	6.5	1.6	9.6	1.5	12.9	1.6	14.8	1.6	16.0	1.6
4	**Employers' schemes**	**41.8**	**10.1**	**52.7**	**8.2**	**65.5**	**8.2**	**82.2**	**8.9**	**85.1**	**8.5**
41	Sickness benefit	23.3	5.6	26.8	4.2	30.0	3.7	42.2	4.6	44.4	4.4
42	Occupational pensions	11.2	2.7	16.6	2.6	23.6	2.9	26.8	2.9	27.0	2.7
43	Supplementary pension	6.0	1.4	8.2	1.3	10.7	1.3	11.9	1.3	12.4	1.2
44	Other Benefits	1.3	0.3	1.1	0.2	1.2	0.2	1.3	0.1	1.4	0.1
5	**Compensation schemes**	**8.7**	**2.1**	**6.4**	**1.0**	**3.2**	**0.4**	**2.6**	**0.3**	**2.7**	**3.0**
51	Social compensation	6.5	1.6	4.5	0.7	1.9	0.2	1.1	0.1	1.0	0.1
52	Burden sharing ('Lastenausgleich')	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	Restitution ('Wiedergutmachung')	1.0	0.2	1.2	0.2	0.9	0.1	1.0	0.1	1.1	0.1
54	Other compensation	0.8	0.2	0.6	0.1	0.3	0.0	0.5	0.0	0.6	0.1
6	**Support and care schemes**	**55.6**	**13.4**	**100.3**	**15.6**	**149.0**	**18.6**	**168.8**	**18.3**	**181.3**	**18.1**
61	Child benefit and family allowances	10.4	2.5	33.1	5.2	42.0	5.2	43.2	4.7	45.0	4.5
62	Child-raising/ parental benefits	3.2	0.8	3.7	0.6	4.8	0.6	6.8	0.7	6.5	0.7
63	Basic security benefits for job seekers ('Grundsicherung')	0.0	/	0.0	/	46.4	5.8	42.2	4.6	43.9	4.4
64	Unemployment assistance/ other employment promotion	9.0	2.2	15.1	2.3	0.6	0.1	0.7	0.1	1.5	0.1
65	Training and career promotion	1.3	0.3	0.9	0.1	2.2	0.3	2.4	0.3	3.0	0.3
66	Social benefits	18.1	4.4	25.8	4.0	25.6	3.2	36.6	4.0	39.7	4.0
67	Child and youth services	10.9	2.6	17.3	2.7	25.6	3.2	36.3	3.9	40.4	4.0
68	Housing benefits	2.5	0.6	4.3	0.7	1.9	0.2	0.7	0.1	1.3	0.1

Source: BMAS (2017): Sozialbericht 2017; note: p – preliminary values, e – estimated values.

3.3.1 The German pension system

Within the German statutory social insurance system, the pension insurance is the most important scheme with expenditures of EUR 304 billion comprising 30.4% of total German social expenditures in 2017. The pension system protects people against the loss of income in old age or due to invalidity. It is organised as a pay-as-you-go-system, meaning that contributions of current employees are turned immediately into pension payments to current retirees. Individual pension rates are calculated following a formula based on the equivalence principle, which essentially governs that everyone receives payments according to their previous contributions to the system. Pension payments for civil servants (57.7 billion Euros) and farmers (2.7 billion Euros) are organised outside the mandatory pension insurance, as well as corporate pension schemes (27 billion Euro) (see table 3-1). Finally, a state-subsidized and special deduction funded, basically privately funded individual retirement scheme (called *Riester-Rente*) complements the old age income insurance in Germany. Total state funding of the "*Riester*" pensions accounted for 3.7 billion Euros in 2014 (RVaktuell 03/2017).

3.3.2 Health care insurance

Health insurance is compulsory for all employees, but it leaves a choice between two types of insurance. The majority of the German population participates in the statutory health insurance offered by various health insurance funds. The total expenditures of the statutory health insurance in 2017 amounted to 232 billion Euros or 23.2% of total social expenditures. Based on the solidarity principle, contributions of fund members increase with their income, while all fund members receive the same benefits. Hence, statutory health insurance contributions grow with the individual income and redistribution takes place within the statutory health insurance system (between rich and poor members and between healthy and ill members).

The second option is to opt out of the statutory health insurance and get a personalised private insurance. This is possible only for few persons whose salary exceeds the amount of currently 6,200 euros per month and for those who are self-employed. In a private health insurance fund every member pays contributions according their personal health status and anticipated health risk (calculated by age, state of health, etc.) and their own choice of insurance level. Private health insurance expenditures accounted for 24.6 billion Euros in 2017 (table 3-1).

3.3.3 Taxation and redistribution

The tax system is the main redistribution mechanism for a more equal distribution of disposable income. The Germany tax system is highly elaborated and features different taxes with often complex rules. The aim is to achieve justice and fairness in each particular case.

Income tax and the value added tax (VAT) are the most important sources on the revenue side in Germany. The income tax has a distributive effect in itself, because it is designed as a progressive tax. The progressive income taxation follows the ability-to-pay principle. According to this principle, everyone should contribute to community well-being according to his or her own performance, i.e. the earners of high incomes pay higher tax rates than poorer persons. Progressive taxation in Germany implies first that everyone is granted a tax-free allowance for the fulfilment of their own and their partner's and children's basic needs. Income beyond the minimum for subsistence and social participation is taxed at rates rising in income, with a minimum tax rate of 14% and a peak rate of 45%[9].

The federal, state and local governments run a high number of various social programs funded through taxes. The support schemes (see table 3-1, Number 6) from child benefits and parental allowances to housing benefits account for EUR 181.3 billion in 2017.

Redistribution through taxation does not only take place vertically, across individuals, but also horizontally, across regions. In Art. 72 of the German constitution, equivalent living conditions are specified as an objective for the federal and regional governments. Most importantly, measures include the reallocation of financial resources collected by taxes between the different German states ("*Länderfinanzausgleich*") or the funding of subsidies and specific investments in public infrastructure by dedicated contributions (e.g. "*Solidaritätszuschlag*"). The objective of spatial redistribution of resources is to ensure decent living conditions in all regions across Germany. Further, the European Union has assumed considerable responsibility for regional development and cohesion, for example by financing comprehensive programmes through different funds such as the European Regional Development Fund (ERDF).

[9] Although social policy itself is explicitly exempt from the responsibilities of the European Union, European coordination of tax policies has increasingly gained importance especially with regard to corporate taxation, due to the rise of global players, online businesses, and transnational value chains. European countries need to cooperate in order to avoid both double taxation and tax evasion, which is important not only because of the need for public funding, but also for social cohesion and a general perception of justice.

3.3.4 Social welfare and poverty

The broad agreement of the German population to the social market economy is based on the promise that participation in the prosperity, which generated by the society and economy as a whole, is possible through personal achievement and is also given to those who cannot reach the minimal sociocultural subsistence level by their own efforts. This includes ensuring that society takes precautions against general life risks and protects special circumstances in the welfare state. In addition, it should (re)enable people to live a self-determined life and help create equal opportunities for all. The income distribution in Germany is remarkably stable with ratio of around 70:30 between income shares for the upper and lower half of income earners (The German Federal Government's 5th Report on Poverty and Wealth). The at-risk-of-poverty rate measures the proportion of the population with an income below 60 percent of median equivalised net income before transfers. It is therefore primarily a measure of income inequality. Employees have a significantly lower at-risk-of-poverty rate than the general population.

The tax funded social welfare system cares for the long-term (more than one year) jobless ("Arbeitslosengeld II") and supports working poor with co-payments ("Aufstocker") so that they are lifted above the subsistence minimum. The subsistence minimum in 2016 was EUR 12,765 annually for single persons.

4. ECOLOGICAL SUSTAINABILITY

4.1 Ecological considerations as a fundamental objective of German policies

Many economic activities affect the environment with greenhouse gas emissions, pollution and noise emissions, land and water consumption, the use of finite resources, or waste and wastewater production. Markets tend to fail to reflect the negative effects of economic activities on the environment, as market prices by themselves do not reflect ecological harms. The objective of environmental policy-making is to account for such adverse effects of economic activity on the environment. Therefore, the government is responsible to establish and enforce rules that internalise the costs of environmental damage, and thus ensure that consumers bear the burdens through higher prices. The internalisation of external costs provides incentives for producers to avoid or treat negative environmental impacts. Thus, environmental policies must ensure that any kind of environmentally unsustainable behaviour is costly for individuals and consumers – as it is for society – by regulatory instruments and incentives for more environmentally friendly behaviour. In this way, taking account of environmental degradation that makes others worse off, helps correcting market outcomes towards the social optimum.

However, environmental policies must not be so strict that they choke economic activity. Although a healthy environment is an essential prerequisite for human well-being, the same is true for economic activities. Environmental policy-making accordingly faces the paramount challenge of optimally combining environmental protection and economic prosperity.

The alignment of environmental and economic policy-making is at the heart of global attempts for sustainable development. The decoupling of economic activity from environmental pollution and resource consumption can only succeed under the coordinated efforts by policy makers, enterprises and consumers. Technological progress and innovations are a key factor in addressing this challenge.

4.2 Key Stakeholders

4.2.1 Environmental Groups and Organisations

Germany is a country with both strong industrial and environmental interest representation groups. Environmental Groups and Organisations (EGOs) advocate a broad swath of environmental issues at the federal level. They are organised in regional chapters mainly made up of volunteers who contribute financially in the form of membership fees and donations, which pay for an administrative, a scientific and a lobbying staff. Such geographic and organizational structures enable German EGOs to address region-specific environmental issues while efficiently aggregating their members' opinions in a democratic, grass-roots-style way to influence federal and state environmental policies. Their primary concerns are climate change mitigation, a greener economy, transition towards renewable, non-fossil sources of energy, strengthening the organic agricultural sector, as well as the protection of waters of all kinds and endangered species in flora and fauna. The most prominent EGOs in Germany are Greenpeace, the "Environment Protection Union Germany" (NABU), the "Union for the Environment and Nature Conservation" (BUND) and the World Wide Fund for Nature (WWF). In 2010, those four EGOs had a budget of EUR 130 million. NABU and BUND alone had almost one million members, and close to 950,000 persons supported Greenpeace and the WWF through donations and volunteer work[10], highlighting the importance of environmental consciousness in German civil society.

4.2.2 Federal Ministry of the Environment and environmental agencies

Environmental protection gained in importance for the German society during the 1970s and early 1980s. In 1986 and shortly after the nuclear disaster of Chernobyl the German Federal Ministry of the Environment (BMU) was established along the growing consensus in society as a whole to put environmental protection on the agenda of policy-making. With the assignment of responsibility for the protection of the environment to state institutions, the German government took first steps towards creating instruments for the universal internalisation of environmental damage in economic activity.

Over time, the focus of environmental policies turned from ex-post treatment of ecological damage to ex-ante precautionary strategies, with environmental legislation based on the principle of sustainability. Today, the BMU is in charge of a wide range of policy areas including climate protection, water and waste management, soil protection, emission control, and nuclear safety, but also resource efficiency, transportation, as well as international cooperation in the area of environmental policy. [11] The responsibility for energy policy was transferred from the BMU to the Ministry of Economic Affairs due to the great overlap and interdependence between environmental and economic policy-making.

Besides the federal and state ministries in charge of ecological affairs, several other dedicated state agencies operate on different institutional levels, some of them independently working, with the aim of conducting environmental research, gathering data, and providing policy advice and information to the public. The most import is the Federal Environment Agency ("*Umweltbundesamt*") established in 1974 and which is entrusted with the tasks of checking and ensuring the implementation of environmental law, filing and evaluating environmental risks, and promoting international environmental cooperation.

International cooperation is among the crucial challenges of environmental policy-making. With open markets providing the opportunity to relocate economic activity to countries with less strict regulations, there are significant incentives for governments to neglect environmental protection for the short-run end of stimulating the economy. From economists' point of view, a country's decision on the level of environmental protection is similar to a prisoner's dilemma: Each individual country's potential to contribute to global environmental protection is limited, but substantial benefits arise from making environmental regulation less strict than elsewhere, resulting from the avoided costs of pollution abatement or treatment. However, if every individual country succumbs to these incentives, the whole world will be worse off than under universal strict environmental regulation. In order to work on overcoming this dilemma, the German government is an active participant in shaping international climate policy.

[10] http://www.bpb.de/nachschlagen/lexika/handwoerterbuch-politisches-system/202197/umweltschutzverbaende.

[11] http://www.bmu.de/en/service/chronology/chronology-a-timeline/.

4.3 Environmental policies

4.3.1 Regulatory instruments for environmental protection

Environmental regulation has several options in order to support environmentally advantageous behaviour: Apart from simply prohibiting harmful products or technologies, the government can also introduce steering instruments (incentives) such as taxes and subsidies. From a market economy perspective such policies set incentives for the development of more environmentally friendly technologies while allowing gradual adjustments in line with market dynamics. This prevents economic shocks by sudden and forced technological changes. Currently, there is a wide range of regulatory instruments in place to support environmental protection.

- Bans on the use of extremely harmful materials and/or technologies, especially when their use is of limited benefit or if substitutes are readily at hand. In cases where firms or sectors are using certain out-dated technologies statutory phase-outs over a given time span allow producers to adjust accordingly.[13]

- Imposing obligations to treat hazardous emissions and waste (e.g. livestock excrements) before releasing them into the environment: If producers cannot dispose harmful materials directly, they are required to buy licences for having them treated by dedicated waste management service providers. Since 1990, shortly before new regulations with regard to the redemption of sales packaging came into force, a range of producers joined forces to establish the "dual system" for separately collecting and recovering sales packaging ("*Grüner Punkt*") instead of disposing of them as residuals. Since then, producers with sales packaging falling under the said regulation buy licences from a service provider that collects and treats the packaging. Consumers pay for this service when buying packaged products at the cash register of their respective retailer. The German dual system has become an international role model for its successes in significantly increasing recycling quotas and reducing waste disposal.

- With regard to measurable environmental flows, taxes can be levied upon large-scale emitters or emitters need to obtain tradable emission permits. Such an approach is useful when productive activities are associated with environmental harm, but immediate avoidance is impossible or economically unreasonable because there are no viable alternatives. The setting of artificial prices nudges producers to develop solutions to reduce pollution, thus correcting market outcomes by better reflecting its true social cost. For example, the German Energy Tax Act levies taxes on the consumption of energy with different tax rates for fossil fuel and renewables. The energy tax sets incentives for consumers to conserve energy, with tax rates differing across different fuels and carriers of energy according to their ecological implications. In terms of revenue, the energy tax contributes significantly to the German state financing.[14] The energy tax is partly harmonised across EU member states, which helps to prevent tax evasion by offshoring of energy-intensive production.

- Subsidies for environmentally friendly technologies and environmentally advantageous products in order to incentivise pollution abatement. For example, the German government grants financial support for thermal insulation of the building stock to reduce overall energy consumption and greenhouse gas emissions of the economy.

4.3.2 The German "*Energiewende*" (energy transition)

A distinctive feature of Germany's economic and ecological policies is the current transformation of the energy generation system switching energy supply from fossil fuels to renewable resources. Some countries, such as Iceland and Brazil, have traditionally relied on renewable resources due to their specific geographic features. Yet, among countries with a history of high fossil fuel usage Germany features a comparatively fast transformation. Figure 4 1 demonstrates that, since the late 1990s, the share of electricity from renewables has increased from less than five percent to well beyond 30 percent recently.

[12] For example, Germany does not allow the private use of thawing salt due its noxious effect on soils.

[13] For example, the European Commission regularly tightens the limits for emissions of cars with combustion engines. The German nuclear phase-out, with all nuclear power plants shut down by 2022, is another example for the abolition of a technology that bears too high a risk.

[14] http://www.bundesfinanzministerium.de/Content/DE/Standardartikel/Themen/Steuern/Steuerschaetzungen_und_Steuereinnahmen/2017-05-05-steuereinnahmen-nach-steuerarten-2010-2016.pdf?__blob=publicationFile&v=5.

Box 5: Energiewende – The German Energy Transition

Background

With a growing world population, finding solutions to the problem of rising global energy demand is one of the most pressing challenges of the 21st century. There are two main reasons: First, conventional energy supply is associated with high greenhouse gas emissions and therefore largely responsible for global warming. Second, fossil fuel resources are limited. This implies the necessity for developing alternative technologies, which must be mature for large-scale deployment as soon as possible.

Nuclear power, which once carried high hopes of solving the problem of energy supply, is highly controversial and objected by many due to the immense risks associated with nuclear incidents. After Fukushima's nuclear disaster in March 2011, the German government decided to phase out nuclear energy and shutdown all German nuclear power plants by 2022.

At the same time, the German government considers climate protection a paramount responsibility and thus holds it as a major goal of environmental policy. Germany aims at reducing its greenhouse gas emissions by 55 % until 2030 compared with 1990 levels, exceeding even the objectives of the European Union. Phasing out nuclear and ambitious climate targets require a massive expansion of energy supply from renewable sources such as wind and solar power and a restructuring of the German economy, in particular of electricity, heating and transport sectors.

This process is referred to as energy transition ("Energiewende"), a term that first came up around 1980. It comprises three major goals:

- to reduce ecological and health strains associated with the exposure to pollution resulting from fossil fuel combustion,
- to avoid the risks of nuclear power, and
- to provide long-run security of energy supply at acceptable costs.

Core elements

The transition processes cover three main areas:

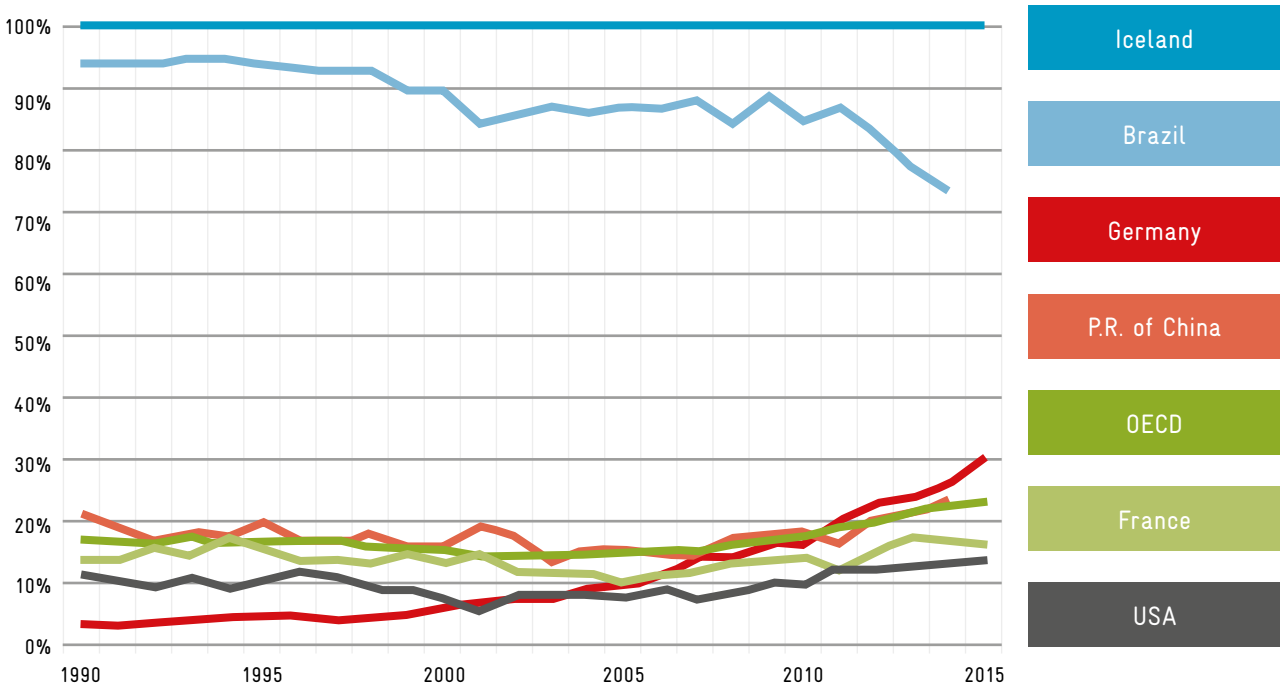
- **Supply:** a switch of production technologies from fossil fuels to renewable (and decentralised) resources.
- **Demand:** a substantial cutback of energy use through improved energy efficiency of appliances and industrial production processes.
- **Transmission:** the development and deployment of smart grids and large-scale storage capacities that manage demand and limit losses to an unavoidable minimum.

One legal cornerstone of the "Energiewende" is the **Renewable Energy Sources Act** (*Erneuerbare-Energien-Gesetz, EEG*), first implemented in 2000 and currently operating in its 2017 version. It provides the foundations for a reliable and predictable development of renewable energy production and its integration in the German energy market. Substantial subsidies for electricity from renewable sources are at its core, setting incentives to increase private and municipal investments in renewable energy plants. Private consumers largely finance these subsidies, as well as the necessary grid expansions, through a system of reallocation charges. In order to keep the costs tolerable and make a smooth transition to competitive conditions, an auction system replaced the former system of fixed feed-in tariffs in 2017.

Besides measures to support renewables, a national action plan comprises fundamental measures regarding energy efficiency improvements. It includes funding programmes for energy efficient construction and renovation of buildings, incentive programmes for climate-friendly production processes in manufacturing and compulsory energy audits for large enterprises, enhancing the implementation of energy management systems for energy-intensive production plants.

Source: DIW Econ.

FIGURE 4-1: ELECTRICITY GENERATION FROM RENEWABLE SOURCES AS PERCENTAGE OF TOTAL ELECTRICITY GENERATION



Source: DIW Econ based on data provided by the OECD (2018).

Besides its ecological benefits, the energy transition has considerable economic implications. Renewable energy systems have become drivers of employment in research and development, machinery production for the domestic and international markets as well as plant operation and maintenance. The Ministry for Economic Affairs and Energy recorded as many as 338,600 persons employed in renewable energies by 2016, three times as many as back in 2000.[15]

Apart from macroeconomic factors of the German energy transition, its success also relates to the strong tier of small and medium sized firms. Early adopters of sustainable and renewable energy production were small and innovative – often conviction driven – enterprises. Although the big corporations have caught up, there is still a sizeable SME share in the value chains of renewables.

4.3.3 EU Emissions Trading System

Germany is one of the initiators of the EU Emissions Trading System (EU ETS), which is the most important instrument of EU policy to reduce emissions of greenhouse gases. It works on the cap and trade principle: The overall volume of greenhouse gas emissions in a period is subject to a cap, but emission allowances are tradable among companies.

The idea of a cap and trade system is that those producers avoid emissions first for whom it is the least expensive. For society as a whole, this implies the lowest possible costs of abatement, given that trade in allowances works. However, the EU ETS has been criticised for being ineffective. Because the cap was initially fixed in advance and the trading period covers several years, the EU ETS could not respond to the unforeseen evets such as the global banking (2008/2009) and the European state debt crisis (2012-2016). Both events significantly reduced European output and emission allowances were oversupplied. The high amount of allowances has so far led to very low prices for emission allowances, which implies that it has been advantageous for firms to continue producing emissions instead of taking efforts to avoid them.

Still, the establishment of the EU ETS has been a great success for coordinating the efforts of 31 European countries. The EU ETS serves as a global role model for international carbon markets. Furthermore, the EU ETS is under constant development; including a broadening range of industries included and the transition from issuing free allowances to an auction system. The upcoming phases of the EU ETS have the potential to significantly reduce the amount of emissions in the participating countries. Effective climate protection is conditional on international cooperation and policy coordination. Germany is committed to the further development of the EU ETS.

Box 6: Transferability – the example of the German energy transition

Germany is globally renowned for its energy transition (*Energiewende*) from a fossil fuel based energy system towards renewable energy sources. Concurrently with this, the economy has significantly reduced its energy intensity. One of the cornerstones of the *Energiewende* is the German *Erneuerbare-Energien-Gesetz* (EEG, renewable energy act), which came into effect in the year 2000. Originally, it featured a fixed feed-in tariff for renewable electricity which provided large incentives to invest in wind energy, solar energy and other renewable energy sources. The law contributed to a quick expansion of renewable energies in Germany. Also, it contributed to the further development of renewable energy technologies and decreasing costs per unit of electricity. However, the German case also showed that fixed feed-in tariffs can lead to unnecessarily high costs. Therefore, the system now relies mainly on public tendering.

The law was copied and adopted by many governments worldwide. But not only the EEG itself, but also the German energy transition as a political concept and its actual implantation attracted considerable attention in many parts of the world. In this sense, Germany served as an example of a large-scale implementation of support schemes for renewable energies and the feasibility of a transition of the energy system without harming the economy. This example inspired many countries. China, for example, introduced a similar scheme and invested heavily in renewable technologies and is now a global leader in the production of solar panels. However, in many other countries, the transition towards renewables is lacking behind due to a combination of high concentration of political power and vested interests.

Source: Interview with Jörg Baur, energy expert at GIZ.

[15] Information by the German Federal Ministry for Economic Affairs and Energy, available at http://www.bmwi-energiewende.de/EWD/Redaktion/Newsletter/2018/03/Meldung/direkt-erfasst_infografik.html.

5. CURRENT CHALLENGES

The German Social-Ecological Market Economy has proved to be successful in all three key aspects:

- In economic terms, Germany is an advanced, prospering economy,
- in terms of social inclusion, it maintains a relatively high degree of social cohesion and an elaborated welfare system with several unique features (such as co-determination and its system of social security based on social contributions instead of tax revenues),
- in terms of ecological sustainability, Germany is well-known for its Energiewende (energy transition) and its pioneering role in turning ecological policies into successful economic growth policies.

It has to be noted that the German success is based on a unique combination of historical circumstances, specific institutions, the European integration and many other factors. Hence, it is not possible to merely copy specific individual aspects and transfer them to other countries with different framework conditions.

Moreover, in spite of all these achievements, the German Social-Ecological Market Economy, faces future challenges. On the one hand, productivity growth is below desirable levels. On the other hand, poverty and social problems persist, albeit on internationally low levels, and Germany is still far away from a truly ecologically sustainable economy. Hence, there is still a long way to go to achieve complete sustainability in its comprehensive meaning of balancing and meeting the economic, social and ecological challenges the country has to face. In a global context, the sustainable development goals (SDGs) in the 2030 Agenda of the United Nations provide a framework for measuring sustainable development and designing policies for sustainability. Germany adopted its first sustainable development strategy in 2002. Since then it has been updated at regular intervals. The most recent strategy determines the course of sustainable development in Germany and is aligned to the 2030 Agenda.

Despite all past efforts and success regarding on the way to sustainability, in a fast changing world new challenges arise and call for proper responses. The remainder of this chapter addresses three of the most prominent current challenges.

5.1 Globalisation

Although free trade in goods and services indisputably generates efficiency gains and economic growth for all participating countries, globalisation is also associated with political, economic, social and ecological distress. There is broad and strong criticism with regard to rising globalisation, including the following aspects:

- Globalisation facilitates the circumvention of rules and social standards, eases tax evasion and offshoring to pollution havens. In the worst case, an economy's social and ecological standards are ineffective and disadvantageous at the same time.
- It exposes a country's workforce and businesses to international competition. When markets open up to cheap imports, local producers might not be able to compete, resulting in bankruptcies and rising unemployment.
- Large multinational enterprises ("global players") with power in international markets are able to exert pressure on policy makers.
- Internationally cross-linked financial markets allow for rampant speculation, implying the risk of bubbles and crises.
- Less educated wage earners are threatened to become losers of the globalisation through job loss.

In order to enjoy the benefits from free trade in goods and services as well as free movement of capital and labour, and not to end up in a race to the bottom with regard to regulation, countries worldwide need to cooperate, i.e. to establish common social and ecological standards. Governments also need to cooperate with regard to taxation, as for each country individually it proves advantageous to set tax rates lower than comparable countries in order to attract businesses from there.

Germany has so far been on the winning side of globalisation, facing a strong position in international trade arising from a strong and innovative industrial sector. However, its major strengths during past decades have been in mechanical engineering, cars and combustion engines. With growing trends in ICT and the digital economy and countries such as China and Brazil catching up fast, the German social ecological market economy needs continuously to develop further. Finally, tectonic political shifts in other countries in response to the challenges of globalisation, like the Brexit in UK and Donald Trumps "America first" doctrine, threaten to disrupt international trade flows and undermine the export oriented growth model of Germany.

5.2 Digital transformation

The on-going digital transformation of the economy and the entire society features many advantages. For instance, the digitisation of communication has immensely reduced transaction costs and thus promoted trade within and between countries, opening additional markets to the most productive firms and allowing them to grow. Germany has very much benefited from a flourishing export industry. Production processes have become easier, as firms are able to coordinate and exchange information quickly across different sites. Similar to the prior automation of many production processes, the digital transformation yet similarly comes with a range of challenges for regulatory authorities.

Whereas formerly, the exchange of goods and services took place mostly on local marketplaces, the trend now is for increasing transactions in digital spheres. With digital platforms attracting virtually unlimited numbers of vendors and buyers, and mutual benefits rising in the number of participants, there is a growing risk of market power exerted by global brokering platforms such as Amazon, Facebook or Google. There is a threat of local producers becoming dependent on platforms and losing significant shares of their value added to them. Global market dominance by few firms impose serious challenges on national governments to control their economic and political power and tax their profits, which will only be possible in close international cooperation. The trends towards globalisation and the digital transformation are, in many instances, intertwined and they mutually reinforce the need for action to develop modern, concerted regulatory frameworks. Areas requiring special attention include data security and privacy protection as well as prevention and prosecution of crime.

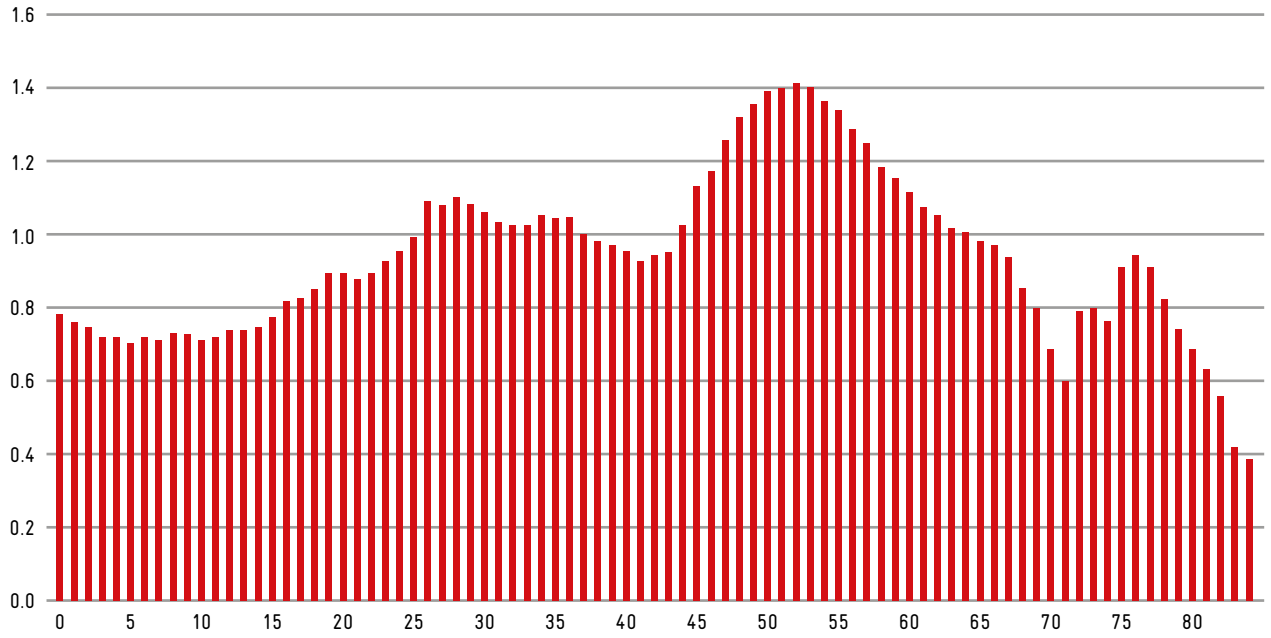
With the digital transformation on the rise, many jobs become superfluous. This creates frictions in the labour markets, with people losing their jobs and being forced to re-train or face unemployment. In order to maintain social cohesion, governments need to react to such economic trends. The challenge is to include digital training in the general education and the vocational training systems to prepare better for living and working in digital environments. Public administration needs to adjust as well, by adopting modern IT systems to keep pace with digital trends and create efficient frameworks for the economic development. Finally, local and national governments have to make sure that physical infrastructure for digital networks is of high quality and open and available for everyone.

5.3 Demographic change

A glance at the demographic structure of the German population reveals some remarkable developments (Figure 5-1): First, the number of births each year has been declining overall since the 1950s. In particular, there was a very constant and strong downward trend between around 1990 and 2010, with the cohorts now between the age of five and their late twenties. Only very lately, there has been some slight recovery. The share of the young in the population is accordingly shrinking. Second, the by far strongest cohorts are currently between their late forties and early sixties. With these cohorts quitting work for retirement, the share of the working population is threatened to evidently fall during the next decades. If this reduction in the working population is not compensated through immigration (as happened during the last decade for instance through high skilled immigration from other EU-member states), it may reduce on the one hand the skills available on the labour market, on the other it puts the social insurance system under stress. Given the growing life expectancy, people live longer after retirement. The Federal Statistical Office projects more than 10 million people above the age of 80 by 2050. In contrast, their number was only 4 million in 2008.

In effect, the number of pensioners in relation to the working-age population will increase significantly in the years ahead. This implies serious challenges for the statutory social insurance systems that are based on current income financing (pay-as-you-go financing). The associated problems can be alleviated, for example, by investing capital abroad, by attracting external immigration of workers, increasing the pension age or by experiencing strong growth in domestic productivity.

FIGURE 5-1: AGE STRUCTURE OF THE GERMAN POPULATION BY THE END OF 2016



Source: Federal Statistical Office 2018, forward projection based on the 2011 census.

6. CONCLUDING REMARKS

The lessons from the Social-Ecological Market Economy in Germany can help decision makers in other countries to better understand problems such as low economic output, low governance performance, poverty and social misery, rural depopulation, or the protection of natural resources. The relevance of these issues varies across countries. They are still relevant for Germany, but political and social structures, good governance structures, and well-designed policies have helped addressing the resulting pressures. In particular, the availability of strong governance structures throughout the country and on all levels of administration is an important factor for the ability to shape a country's economy and society. Although German politics is now more fragmented than in the last decades, the consensus-based system may serve as a role model for inclusive and considerate decision-making. Open public debate, an institutional memory and long-term accountability have proved a recipe for responsible policy-making.

The report has shown that the Social-Ecological Market Economy in Germany evolved over a long time and needs permanent adjustments and innovation because of the rise of new technologies, changes in social values and preferences and the constant challenges from globalisation, the digital transformation and a changing demography. This insight is universal to all economies and societies.

However, there is no universal quick path for economic growth and social well-being. Both require trust and stability, whose development takes time. Other countries might learn lessons from Germany's general approach of actively shaping the social and ecological character of its economy through appropriate regulation, promoting private initiative and innovation and supporting development through public-private collaboration.

The German Social-Ecological Market Economy is an integrated system of coordinated rules, institutions and cooperating stakeholders. Thus, it will unfold only limited impact if selected policies or aspects of this system are copied and applied to other countries without adapting them to the country-specific circumstances. However, there are some interesting and unique aspects of the German model that are worthwhile studying:

- The guiding principle for the functioning of the Social-Ecological Market Economy is to put the **self-responsibly acting individual in the centre of the economy**. This means to create a regulatory environment which combines a competition driven economy with social security for individuals and an ecologically sustainable use of natural resources. It should be emphasized that a competitive economy allows for turbulences in markets where individuals with better

ideas than those of incumbents are able to easily enter markets and unleash a creative destruction. In other words, incumbents should not be indirectly protected through opaque or overregulated system of rules or bureaucratic hassles directed against potential market entrants. The best starting point in this direction is the aim to cut red tape, to codify economic laws and streamline regulations which make it easier to start, run and close businesses. At the same time it is necessary to prepare for the negative effects of layoffs in incumbent firms that fail because of the new competition.

- **Social partnership and co-determination:** The cooperative relationship between trade unions and employers is a unique feature of the German success. The system allows to balance apparently opposing interests between employers and employees with a minimum of state interference. This way, the partners achieve consensual solutions, minimise economic losses due to strikes and maximise welfare and its fair distribution. However, the system relies upon a traditionally cooperative relationship between trade unions and employers, which cannot be determined by law, but must develop over time.

- The system of **vocational training** is an internationally recognised feature of education in Germany and has proven very successful at training professionals who are able to combine excellent theoretical skills with practical knowledge. Even though it relies on many other features of the Social-Ecological Market Economy – such as social partnership – and cannot be copied directly, the fundamental idea of cooperation between public schools and private firms and the combination of theoretical skills and practical knowledge can prove successful in other countries, too.

- The **German energy transition** (*Energiewende*): Even though not all aspects of the German energy transition worked out as planned and the economic costs turn out to be rather high, it is a prove of concept that even a large, industrial country can manage such a system change. As a starting point, feed-in tariffs for electricity from renewable sources proved to be very helpful in Germany. However, other countries should closely study the German case and try to avoid some of the mistakes the German government and firms (e.g. in the energy sector) made. Also, even though the principal idea of an emission trading system is highly convincing and the EU ETS proves that it such a system can work, the case shows that the system needs further improvements to actually affect GHG emissions to a significant extent.

However, we cannot exclude that the focus on specific and concrete features of the German Social-Ecological Market Economy may not unfold any positive impact in an economy. Many specific aspects of the German model rest on several prerequisites. Whatever country aims to introduce the model of the Social-Ecological Market Economy, needs a high willingness for institutional reform which typically includes the

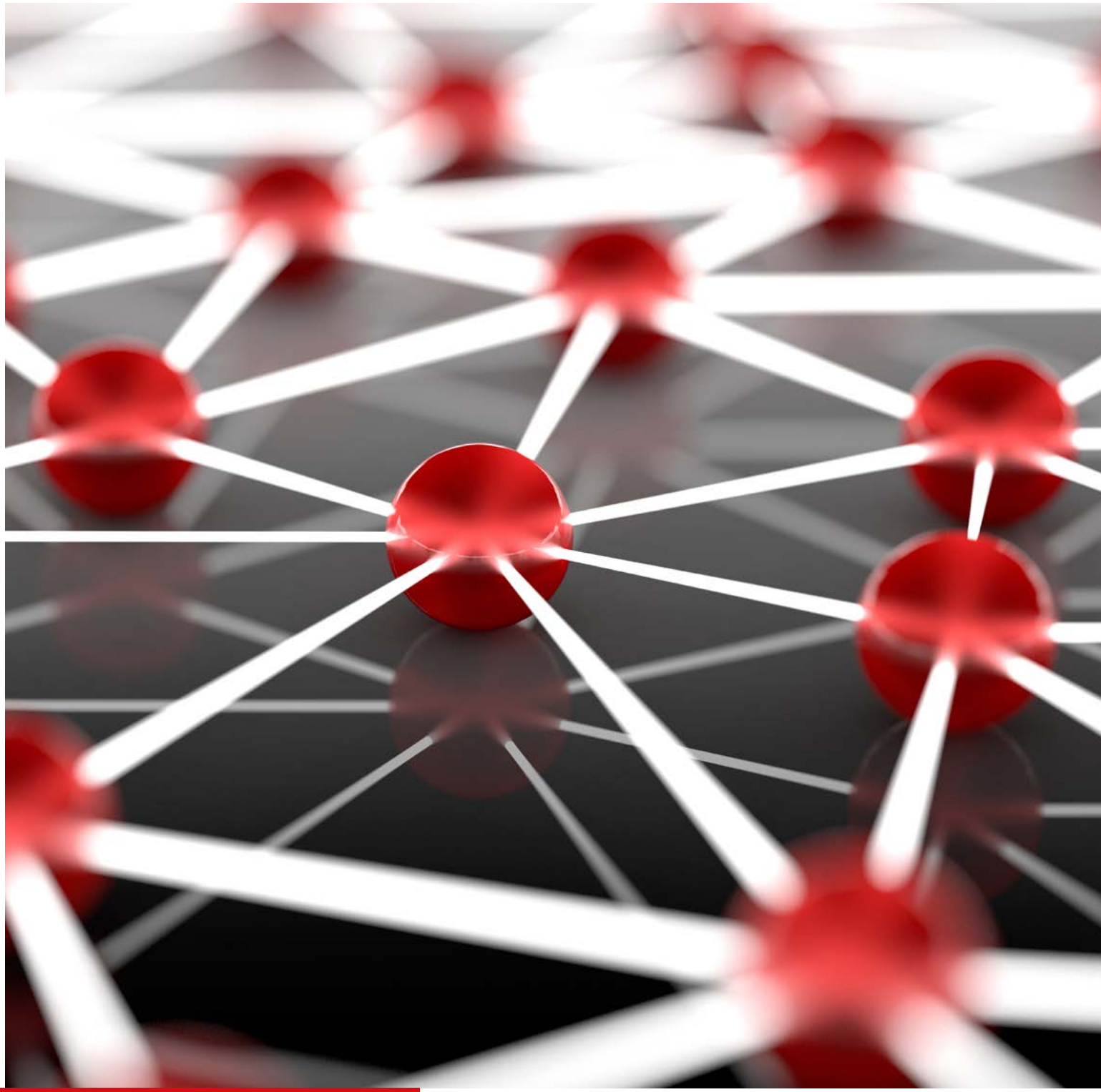
- willingness to highlight the role of the individuals in a country and strengthen their ability to act on their own responsibility in the everyday economic life,

- abandoning of discretionary measures by ruling parties and politicians,

- development of a certain kind of a strong state which creates a set of regulatory measures,

- development of monitoring and enforcing institutions which are independent of ruling parties and politicians.

Therefore, the major prerequisite for introducing the model of the Social-Ecological Market Economy in a country is the development of a political consensus on a future society draft which clearly defines to what ends the country should be developed in the medium to long term and how the introduction of such a model may help a country to realise these objectives.



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