MODULE 5

GLOBAL CHALLENGES 2:
RESILIENCE AND DIGITALIZATION OF THE FINANCIAL MARKETS

JOACHIM HERZ STIFTUNG

CONTENT

AN OVERVIEW OF THE TEACHING MATERIALS

Target group	School students aged 14–18
Potential subjects	Social science subjects such as economics and politics, but the material is also well suited language courses (especially English) and bilingual lessons.
Time requirements	Depending on the materials chosen and if in-depth materials are used, approximately 2 teaching hours
Background	The materials are suitable for studies of international politics and economics, including changes and trends in these fields and the associated opportunities and challenges.
Content	The teaching material consists for the Global Classroom focus on the global challenges facing the G20 in the financial sector. Module 5 focuses on the topic of financial markets, taking an in-depth look at resilience, digital technology and fintechs.
How to use the materials	The materials offer an inside view into the G20 Finance Track. We do not provide standardized answers to the exercises. Teachers are free to select and reorganize the order of the materials at their discretion. Any questions concerning the materials can be answered via info@global-classroom.de.
Knowledge requirements	These instructional materials build upon the instructional units “The G20 and the Finance Track – why does it matter?”, “Introduction to Global Governance” and “Introduction to Global Finance.” Prior instruction in general financial matters, such as the global financial crisis or the issue of sovereign debt, is helpful but not required.
Curricular overlap	The subject matter covered in this module overlaps with the subject of international financial markets.
Objectives	Students • explain what is meant by the “too big to fail” problem and “financial contagion” effects. II • identify the basic characteristics of fintech companies. II • explain the role of digital technology in the financial sector as well as the opportunities and risks it presents. II • describe what is meant by the concept of financial inclusion. III • research examples of fintechs and present these business models to the Global Classroom. II • develop and assess business ideas for fintechs. III The targeted skills are indicated using “operative words.” These are verbs that indicate the activities the students are expected to perform when completing the exercises: Exercise category I comprises reproduction, exercise category II requires reorganization and transfer, and exercise category III asks for reflection and transfer. The numbers next to the individual skill descriptions indicate the exercise category. The skills are structured chronologically with respect to the module.

MATERIAL 1

RESILIENCE AND DIGITAL TECHNOLOGY IN FINANCIAL MARKETS

Economic Challenges Facing Europe and the World – Political Priorities of the Italian G7 Presidency and German G20 Presidency in 2017

A speech by Claudia M. Buch, Vice President of the Deutsche Bundesbank and G20 Central Bank Deputy.

Figure 1: Dr. Claudia M. Buch

1 Challenges

In the year 2016 we have witnessed important political events – some of them with unexpected outcomes and market reactions. Financial markets recovered rather quickly from the Brexit vote in June; they first plunged and then went up after the US presidential election in November; markets did not react much to this month's referendum about constitutional reform in Italy.

Post-crisis financial regulatory reforms sought to make the financial system more resilient against shocks. Market responses to the Brexit vote showed the importance of buffers in the system. Market participants built up liquidity buffers before the referendum, and the depreciation of the British pound cushioned some of the adjustment.

But the extent to which we have already seen the longer-term stock adjustment, the revaluation of assets, and the full response of markets to these events remains an open issue. Recent political developments reflect global challenges that go much deeper. There is a great deal of uncertainty about how the rising tide of populism and protectionism will affect the global economy over the longer term. The benefits of globalization are being questioned.

Policymakers must therefore strike the right balance between sustaining integration, fostering economic prosperity, and addressing concerns about inequality. In Europe, the 25th anniversary of the Maastricht Treaty and the upcoming 60th anniversary of the Treaty of Rome remind us of the many achievements of the European integration project. These include 70 years of peace and lasting democracy, freedom of movement, free trade of goods and services, and a rise in economic prosperity for many citizens. A precise measurement of the benefits of economic integration is hardly feasible, but a recent study estimates the gain in GDP per capita due to EU membership at approximately 12% (Campos et al., 2014).[1]

At the same time, economic integration has distributional consequences. Not every individual, not every firm benefits from free trade and from increasing (international) competition. There is a need for appropriate policy responses such that both potential winners and losers continue to share a feeling of belonging together.

INFO

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Many of the policy issues involved go well beyond the analytical contributions that economists can provide. And they also extend far beyond the policies that central banks have at their disposal. Let me therefore focus on the two main topics that Germany has made its priority under its G20 presidency, which began this month. These topics address two key challenges for global and, in particular, European policymakers: resilience and digitization.

The G20 or "Group of Twenty" is an international forum for governments and central bank governors from 20 major economies. It was founded in 1999 with the aim of studying, reviewing, and promoting high-level discussion of policy issues pertaining to the promotion of international financial stability. The G20 presidency rotates among the G20 member countries – Germany's presidency follows that of China and will be followed by Argentina. While each presidency has its own key projects, continuity is key in the G20 process. With its focus on resilience, the German G20 presidency builds on previous work on structural reforms and growth-promoting policies.

2 Strong real economies are the basis of resilience

More resilient economies are less prone to severe downturns, rebound faster from negative shocks, and adapt more easily to structural changes. The ability of the private and public sector to absorb shocks is therefore an important factor affecting resilience. High levels of debt constrain this ability, in particular if low productivity growth weakens the ability to service outstanding levels of debt. A stable financial system and a resilient real economy are two sides of the same coin.

Yet productivity growth has declined over time in many countries. In the euro area, for instance, labor productivity is currently growing at a rate of 0.4%.[2] It lags behind the growth rates of the US and other advanced economies. The gap in productivity growth between Europe and the US has been widening since the mid-1990s. Empirically, it is difficult to attribute differences in productivity growth across countries and regions to specific factors. Factors such as institutions, demographic trends, or the macroeconomic environment interact and are difficult to isolate.

Regional differences in productivity within countries can also be very persistent. And here I am not referring to regional differences within Italy. Instead, what I have in mind are differences between eastern and western Germany. The former East German states have developed very differently than the West German states since German reunification. After the wall came down and markets were opened up, there was a rapid convergence process. Over the first ten years following reunification, investments per employee that were 30% above the western level made firms more efficient and boosted productivity (IWH, 2014).

In the first half of the 1990s, GDP per capita in eastern Germany rose from 43% of the western German level to 66% (German Ministry of Economics, 2016). From then on, convergence practically stopped. More than 25 years after the wall came down, income per capita still stands at about 70% and productivity at roughly 80% of the western level (IWH, 2014). Eastern German firms remain smaller and less internationally integrated than their western German counterparts; there are few headquarter activities located in eastern Germany.

Hence, unification brought many new opportunities in terms of free travel and gains in economic prosperity. However, the adjustment process was also very painful. Many East German firms became insolvent; unemployment rates increased sharply.

Investment into research and development (R&D) can promote innovations and thus growth. But triggering R&D investment is not easy. In eastern Germany, public subsidies have been used to stimulate R&D investment in structurally weak regions. Recent research shows that such subsidies can indeed increase gross value added and productivity in the private sector (Dettmann et al., 2016). But the effectiveness of public subsidies also depends on the right combination of an educated workforce, a supportive regulatory environment, and demand for new products.

One important insight gained from the recent globalization period is the importance of integrated markets for productivity growth.[3] On the one hand, international trade linkages and foreign direct investment allow technological advances to diffuse, thereby boosting productivity. On the other hand, firms which are small and insufficiently productive cannot shoulder the fixed and variable costs of market entry. Hence, barriers to international integration are more binding for small and mid-sized firms than for their larger – and more productive – counterparts.

3 High levels of debt weaken resilience

Let me come to the second factor that affects resilience – the level of debt. Here, crisis legacies still weigh on the world economy. Debt levels in the private and public sector remain high. At the end of 2013, world total debt (ex-financials) stood at over 210% of global GDP, up from about 160% at the beginning of the 2000s (Buttiglione et al., 2014). More recent data from the Bank for International Settlements covering 42 advanced and emerging economies indicate a further increase in debt at the global level, in particular due to rising debt ratios in emerging market economies. In the third quarter of 2015, total non-financial debt levels amounted to 218% of GDP.[4] In the euro area, public debt currently amounts to 91%; debt of the non-financial private corporate sector stands at 105% of GDP.[5]

Post-crisis reforms of financial regulation play a vital role in making economies more resilient. These reforms have the explicit goal to enhance the stability of financial systems at the national and global level. Many of them are coordinated by the Financial Stability Board (FSB), an international body that monitors and makes recommendations regarding the global financial system. It was established at the initiative of the G20 in 2009.

The key to a resilient banking sector is higher capital. Better-capitalized banks have stronger cushions against unforeseen risks. This increases the stability not only of individual banks but also of the entire financial system. Recent research by the Bank for International Settlements shows, in addition, that better-capitalized banks lend more to the real economy and have lower funding costs (Gambacorta and Shin, 2016).

Post-crisis reforms were also aimed at reducing the too-big-to-fail problem in the banking sector. Insolvent banks differ from insolvent firms. Because dealing with distressed banks is difficult, large banks typically enjoy an implicit subsidy. Therefore, making large banks more resilient by imposing additional capital buffers has been a major goal of reforms. Other important reforms have dealt with establishing central clearing of derivatives trading, and transforming shadow banking into market-based finance.

Ultimately, these reforms aim at mitigating the negative side-effects of financial integration and allowing countries to enjoy the benefits. There are two ways in which financial integration can contribute to economic prosperity.

First, financial integration allows the channeling of funds to productivity-enhancing investments, which fosters economic growth. Research suggests that financial integration can affect economic performance through higher total factor productivity (Bonfiglioli, 2008).

Second, integrated financial markets can improve international risk sharing and help absorb adverse shocks hitting the domestic economy (Balli et al., 2012). Equity in particular provides an ex ante risk-sharing mechanism, namely a claim on real assets. Debt, by contrast, is a claim on nominal assets and is insensitive to a borrower's situation. An adjustment to idiosyncratic shocks can only occur through new lending or through haircuts on existing loans after risks have materialized. By contrast, the value of equity adjusts if the borrower's situation changes.

The stabilizing features of equity contracts have been visible during the European debt crisis. In Europe, debt finance has been more prone to capital flight than equity finance. Furthermore, diversified cross-border equity holdings help detach consumption from business cycle fluctuations. Cross-border equity allows more effective cross-border risk sharing and consumption smoothing. Increased reliance on equity finance would be particularly beneficial in the European Monetary Union, where nominal exchange rates cannot adjust to cope with (regional) macroeconomic shocks.

Yet, the global financial crisis has revealed that financial integration can be a double-edged sword. Financial linkages can lead to financial contagion. Financial markets are highly connected across borders; the financial and real sectors within countries are closely linked. Financial regulation must therefore take a system-wide perspective. Against this backdrop, promoting and improving the international financial architecture has been on the agenda of the G20 for many years.

4 Digital financial services affect the efficiency and stability of financial markets

While financial development promotes global growth, it might also have made "the world riskier" (Rajan, 2005). Therefore, it is important to shape financial regulation and other policies to allow for a beneficial interaction of financial markets and productivity.

The opportunities that are offered by digital technology can be a driving force to achieve this goal. One important topic of the Finance Track under the German G20 presidency is the spread of digital technology in the financial sector. The quantity, quality, and diffusion of technological innovations are at the heart of productivity growth.

One explanation for the growing productivity gap between Europe and the US is strong productivity growth in the US. This, in turn, can be attributed to information and communication technologies or ICT (Havik et al., 2008). The contribution of ICT to US growth went up from 43% for the period 1971-1995 to 59% for the period 1995-2000 (Jorgenson et al., 2008). The growth contribution of increased investment in ICT capital almost doubled. ICT is a general purpose technology with a broad impact on many sectors of the economy.

New digital technologies might spur productivity growth in a similar manner as the last wave of information and communication technologies. They can contribute towards closing gaps in productivity. We therefore need policies that create an environment in which such innovations diffuse easily and create positive spillovers.

Innovative digital financial services can contribute to well-functioning financial markets. Fintech firms and innovations such as crowd-funding and distributed-ledger technologies are at the center of this debate. Fintechs can facilitate access to financial services. These innovations can foster competition, lower transaction costs, and improve risk sharing – thus promoting innovation and growth. But financial innovations might also affect systemic risks. They might induce pro-cyclical behavior. Risks posed by cyber-crime need to be monitored closely and, where necessary, addressed. This is to say that digital innovations should not undermine secure, transparent, and stable financial markets.

5 Conclusion

There is no lack of short- and long-term challenges facing Europe and the world. Under the German G20 presidency, we will be addressing two important issues: resilience anddigital technology.

Strong real economies are the basis for resilience. Economic growth is therefore not an end in itself. Strong growth is rather the basis for inclusive growth, as it opens up space for redistributive policies. Strong growth is also built on innovation, which can contribute to sustainable growth.

Robust financial markets are the second pillar of resilience. As we are completing the reform agenda, we are gradually moving from policy implementation to (ex post) impact assessments. We need impact assessments to demonstrate the long-term benefits of the reforms – benefits in terms of financing innovation, growth, and the allocation of risk in the economy. We need to look at the effectiveness of individual reforms, the interaction between reforms, and their aggregate affect.

At the global level, maintaining a dialogue on economic policy is crucial. The G20 as well as the

G7 are fora that play an important part in addressing the above challenges. They allow countries to learn from best practice across countries and to develop their policy framework. The member countries have diverse experience with regard to stability issues and national policy discussions. Every financial crisis may be different, but core elements and mechanisms repeat themselves. Therefore, by sharing experiences, policymakers can collectively learn from each other and improve their policy responses.

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1 This number refers to the average effect per country for the whole post-accession period up to 2008.
2 This number refers to the year-over-year growth rate in the third quarter of 2016 (ECB calculations based on Eurostat data).
3 For a review of recent literature, see Melitz and Redding (2014).
4 These are aggregate numbers based on conversion to US dollars at purchasing power exchange rates.
5 These figures refer to the first quarter of 2016.

EXERCISES ON THE TEACHING MATERIALS

MATERIAL 1

RESILIENCE AND DIGITAL TECHNOLOGY IN FINANCIAL MARKETS

Group Work: Resilience and digital technology in financial markets

In this exercise, we would like you to assume the role of experts participating in a panel discussion on “Resilience and digital technology in financial markets”.
To prepare for the discussion, divide the class into five teams. Teams 1–4 should prepare a section of the speech by Claudia Buch as follows:

<u>Section 1</u>	“Challenges”: Team 1
<u>Section 2</u>	“Strong real economies are the basis of resilience”: Team 2
<u>Section 3</u>	“High levels of debt weaken resilience”: Team 3
<u>Section 4</u>	“Digital financial services and the stability of financial markets”: Team 4
<u>Section 5</u>	“Conclusions”: To be prepared by all teams

Team 5 will manage the ensuing discussion among Teams 1–4.

To start the discussion, each team (1–4) should give a brief presentation of their key findings. If possible, findings should be visualized on a board, flip chart, PowerPoint presentation, etc.

Starting from there, team 5 will start a discussion among the various teams, for example by (a) identifying differences/disagreements in their findings that may trigger a lively debate and/or (b) finding common ground that may allow the group to identify further steps and a plan for action.

A good way to finish the discussion may be to ask each team to prepare a brief final statement that highlights the positions they held prior to the discussion and how the discussion may have impacted these positions.

MATERIAL 2

A PRIMER ON FINANCIAL TECHNOLOGY COMPANIES (FINTECHS)

In the financial world and at this year's G20 meeting in the finance track, new business models in the financial technology sector (called fintechs for short) are a topic of particular interest.

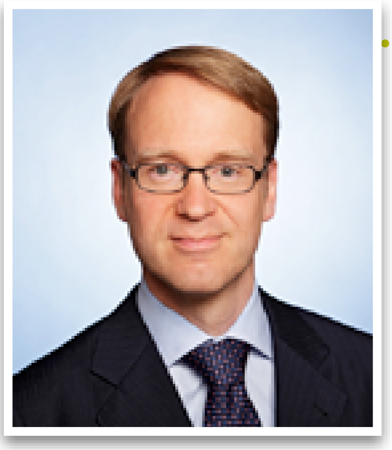

Figure 2: Jens Weidemann

Bundesbank President Jens Weidmann: Uniform regulatory regime needed for fintechs

Speaking at a conference at Schloss Biebrich in Wiesbaden during Germany's presidency of the Group of Twenty (G20), Bundesbank President Jens Weidmann said a common regulatory approach is needed for fledgling financial technology (fintech) businesses. Fintechs boasting fresh business models and digital solutions such as smartphone apps have made inroads into the financial community, where they are rivalling traditional credit institutions. This, the Bundesbank President explained, means they have the potential to disrupt the market for financial services.

However, there are many countries where these fintech start-ups enjoy greater freedom than traditional players in the financial services sector, and this, Mr Weidmann noted, is an issue that regulators and central bankers need to address. "Our goal is to draw up a set of joint criteria for regulating fintechs," he stated, adding that it would be wrong for fintechs to base their business models on regulatory loopholes. Using regulation that is too lax as a way of attracting business is a mistake that had already been made before the latest financial crisis, Mr. Weidmann cautioned. "It is important to get a clearer picture of fintechs' business activities if we are to better understand whether and in what way they might pose a threat to financial stability."

Mr. Weidmann also used the conference to underline the importance of free global trade. International cooperation and open markets, he said, offer benefits for all countries and peoples. "It is crucial for our policy for us to offer fresh opportunities in all our societies," he remarked. "Let us not forget that."

Benefits outweigh risks

Speaking at the same event, Mark Carney, Governor of the Bank of England, highlighted the benefits of new technologies in the financial industry. He explained how many traditional banks are now already cooperating with fintechs in a move to offer their customers new online services. This, Mr Carney said, could help make banks more productive and drive down costs. However, it is ultimately for governments to decide whether – and how – to ensure the benefits of these technologies outweigh the risks. Mr. Carney reported that the Financial Stability Board (FSB), of which he is the chair, is assessing the extent to which the risks associated with new financial technologies are addressed by existing regulatory frameworks.

Opportunities presented by the spread of digital technology

Besides illuminating the challenges presented by fintechs, the participants at the G20 conference also debated the opportunities and risks associated with rising levels of digitalisation in the financial industry as a whole. German Finance Minister Wolfgang Schäuble used this debate to

Figure 3 Queen Máxima of the Netherlands and Dr. Schäuble, German Finance Minister

draw attention to the benefits that digital funding solutions present for some parts of Africa that are still cut off from financial services. The potential offered by new capabilities can only really be harnessed, Dr. Schäuble remarked, by not giving too much credence to the risks. Yet he, too, called for the creation of a uniform set of competitive rules for the digitalised world. "Any democratic environment needs rules," Dr. Schäuble said.

Queen Máxima of the Netherlands explained that, for all the new digital capabilities that are available, financial services are still not universally accessible. Even in the United States and Europe, she said, there are still millions of people who are cut off from the financial system and find it difficult to get the right insurance cover or take out a loan. "We succeeded in bringing 700 million more people into the formal financial system between 2011 and 2014 – but 2 billion remain cut off," said Máxima in her capacity as the United Nations Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA).

German Federal Minister of the Interior Thomas de Maizière drew attention to one drawback of the increasingly digitalised financial world – our growing digital vulnerability to increasingly smart malware – and called for greater investment in cyber security, noting that preventing cyber attacks is the key to preserving confidence. "Customers need to be sure that their money is safe," Mr de Maizière announced.

The conference held as part of Germany's presidency of the G20 was entitled "Digitising Finance, Financial Inclusion and Financial Literacy".

EXERCISES ON THE TEACHING MATERIALS

MATERIAL 2

A PRIMER ON FINANCIAL TECHNOLOGY COMPANIES (FINTECHS)

1. Short essay: What are fintech companies and how do they affect your life?

   Write a text on fintechs (200–400 words). For this exercise, imagine that you have traveled back in time to the year 1900. Try to describe the phenomenon of fintechs to someone you meet (for example, a banker from the year 1900 to whom you explain future aspects of his business). Your description should explain the term, the main features of fintechs, examples of fintech companies, and your assessment (positive? negative? both? why?) of fintechs.

2. Group Discussion: The pros and cons of financial sector digitalization

   Explain (a) how the spread of digital technology affects the financial sector and (b) what opportunities and risks digital technology brings to this part of the economy. To do this, break out into two groups for a discussion. Group A will argue that the benefits of digitalization in the financial sector outweigh the risks. Group B will argue the reverse, focusing on the potential risks and costs.

   First, each group should make an opening statement. Then both groups should debate the topic. What are your conclusions? Can you reach a consensus? Make sure your arguments are as specific as possible (including concrete examples to back up your positions).

3. Design a campaign ad (for example, a poster) on financial inclusion

   Work in teams of two and discuss: what is meant by “financial inclusion”, and why is it important? Start your investigation by reading the statement by Queen Máxima of the Netherlands (who serves as special representative of the UN General Secretary for Financial Inclusion and Development). Then visualize your findings by designing an ad for a campaign to promote (and possibly raise funds for) financial inclusion.

   You can upload your posters and material to the Global Classroom to discuss them with members of your class. You can also upload your posters and material to the Global Conference Room, and ask students from other countries for their feedback.

OPTIONAL EXERCISES

Global Conference Room: Develop a fintech business model.
You can work by yourself or in teams of 1–3 people.

1. As a first step, you are asked to do some background research on examples of fintech companies. What kinds of services do they provide? Who uses or buys their services, and what does it cost? Do they have growth potential and why? Present your findings and the different business models to other members in the group. Can you identify common factors that lead to success (or failure) among the examples you have been discussing?

2. As a second step, put your findings into practice by developing your own business ideas for fintechs. What is the service you would like to deliver? Who are the consumers you are targeting, and why would they benefit from this service (and hence be willing to pay for it)? Upload your ideas in the Global Conference Room on my-global-classroom.de to discuss them with participants from other schools and countries.

SOURCES

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GLOBAL CLASSROOM IN THE G20 FINANCE TRACK

The Global Classroom is a joined project of the German Federal Ministry of Finance and the Joachim Herz Stiftung. It provides teaching materials covering up-to-date topics of the G20 Finance Track 2017, like different aspects of economic growth and financial stability as well as the role of international organizations in global and national politics. The materials can be used in all social science classes such as economics and politics, but are also well suited for languages (especially English) and bilingual lessons.

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