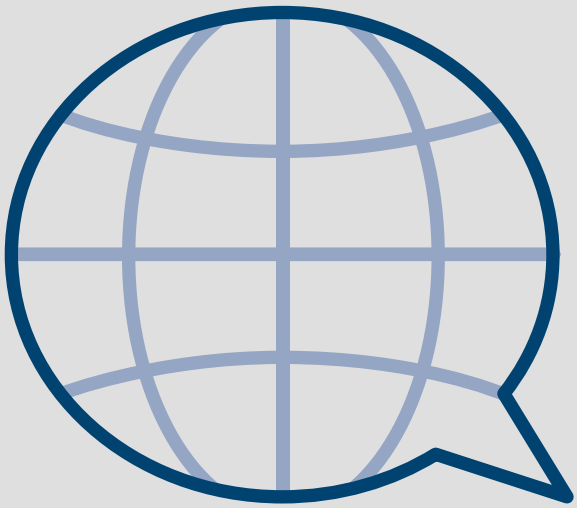
ifo WORLD ECONOMIC SURVEY

I
2018

February
Vol. 17



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ifo World Economic Survey
ISSN 2511-7831 (print version)
ISSN 2511-784X (electronic version)
A quarterly publication on the world economic climate
Publisher and distributor: ifo Institute
Poschingerstr. 5, D-81679 Munich, Germany
Telephone ++49 89 9224-0, Telefax ++49 89 985369, e-mail ifo@ifo.de
Annual subscription rate: €40.00
Single subscription rate: €10.00
Shipping not included

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ifo
WORLD ECONOMIC
SURVEY

VOLUME 17, NUMBER 1, FEBRUARY 2018

ifo World Economic Climate Improves Considerably

NOTES

The World Economic Survey (WES) assesses worldwide economic trends by polling transnational as well as national organisations worldwide on current economic developments in their respective countries. Its results offer a rapid, up-to-date assessment of the economic situation prevailing around the world. In *January 2018, 1,199* economic experts in *120* countries were polled.

METHODOLOGY AND EVALUATION TECHNIQUE

The survey questionnaire focuses on qualitative information: assessments of a country's general economic situation and expectations regarding key economic indicators. It has proven a useful tool, since it reveals economic changes earlier than conventional business statistics.

The qualitative questions in the World Economic Survey have three possible categories: "good / better / higher" (+) for a positive assessment resp. improvement, "satisfactory / about the same / no change" (=) for a neutral assessment, and "bad / worse / lower" (–) for a negative assessment resp. deterioration; The individual replies are combined for each country without weighting as an arithmetic mean of all survey responses in the respective country. Thus, for the time t for each qualitative question and for each country the respective percentage shares (+), (=) and (–) are calculated. The balance is the difference between (+)- and (–)-shares. As a result, the balance ranges from -100 points and +100 points. The mid-range lies at 0 points and is reached if the share of positive and negative answers is equal.

The survey results are published as aggregated data. For aggregating the country results to country groups or regions, the weighting factors are calculated using the gross domestic product based on purchasing-power-parity of each country.

ifo World Economic Climate improves Considerably

The ifo World Economic Climate improved considerably in the first quarter of 2018. The indicator rose from 17.1 to 26.0 points, soaring to its highest level since autumn 2007 (see Figure 1). Experts assessed the current economic situation far more positively than last quarter. Their economic expectations also showed an exceptional improvement. The worldwide upswing consolidated in the first quarter. The climate improved in all regions of the world (see Figure 2). Both assessments of the current economic situation and expectations rose particularly sharply in the USA, the European Union and in emerging and developing countries in Asia. In Latin America assessments of the current situation improved significantly, but expectations deteriorated slightly. According to experts, short and long-term interest rates will rise in the next six months. They expect world trade to pick up significantly (see Figure 6). The price increase in the world economy is expected to gather impetus in the months ahead (see Figure 7).

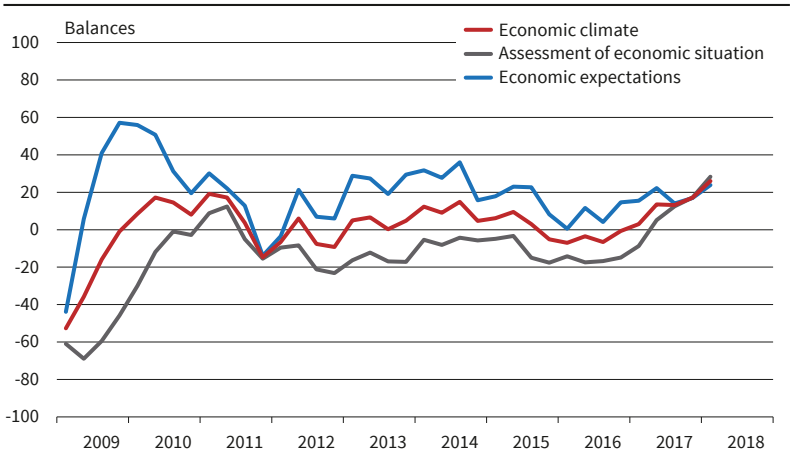
DYNAMIC UPSWING IN ADVANCED ECONOMIES IS EXPECTED TO CONTINUE

The economic climate indicator in all advanced economies continued to improve strongly (see Figure 9). Both components of the climate indicator, namely the current situation and the economic outlook, received better assessments than last quarter. The present cyclical upswing is clearly being led by the advanced economies (see Figure 2).

The ifo Economic Climate Indicator for the **Euro Area** hit its highest level since summer 2000 this quarter, rising sharply to 43.2 points from 37.0 balance points. According to experts, the current economic situation in particular continued to improve. Economic expectations also brightened slightly. The dynamic upswing is expected to continue. The improvement in the economic climate was primarily due to more positive assessments by experts in **France** and **Italy**. These two countries saw the sharpest rise of over 10 balance points in the climate indicator. In Italy economic performance was assessed as positive for the first time since summer 2007. The economic climate indicator also rose somewhat in Germany. In the **Netherlands**, by contrast, the climate deteriorated, but the country's present economic performance remains very good. In the euro area's large member states the economic situation improved. **Spain** was the only excep-

Figure 1

ifo World Economic Climate

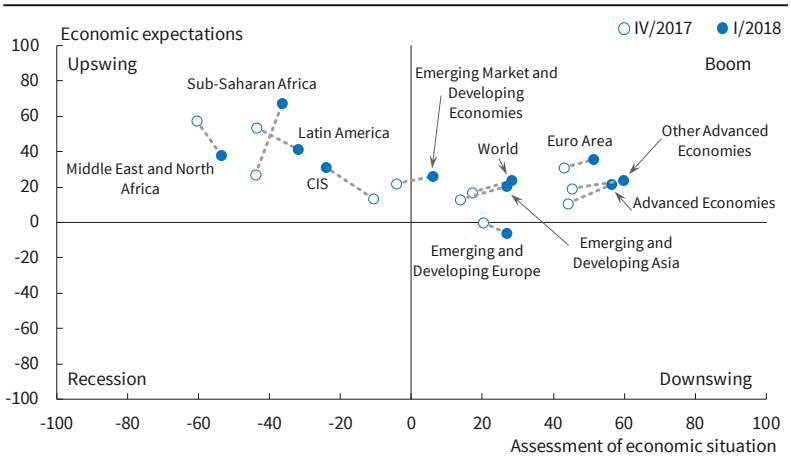


Source: ifo World Economic Survey (WES) I/2018. © ifo Institute

Figure 2

ifo Business Cycle Clock for selected Aggregates

Change from IV/2017 to I/2018; balances



Source: ifo World Economic Survey (WES) I/2018. © ifo Institute

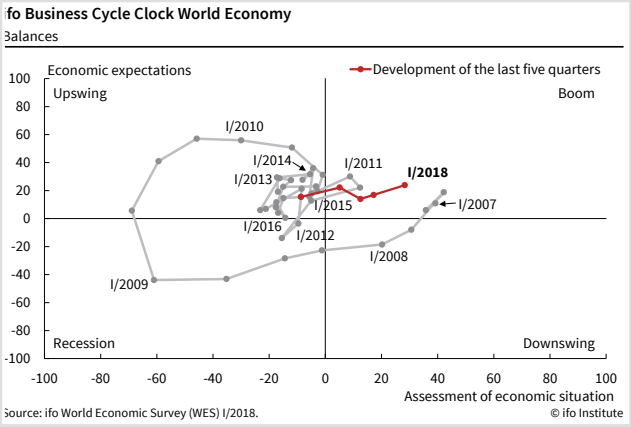
Box1

IFO BUSINESS CYCLE CLOCK FOR THE WORLD ECONOMY

A glance at the ifo Business Cycle Clock, showing the development of the two components of the economic climate in recent years, can provide a useful overview of the global medium-term forecast. The business cycle typically proceeds clockwise in a circular fashion, with expectations leading assessments of the present situation.

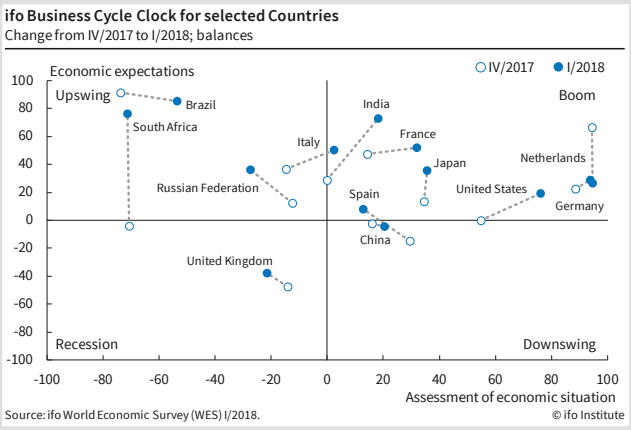
According to the January 2018 survey, the ifo Indicator for the world economy remained in the boom quadrant for the fourth quarter in a row (see Figure 3). Experts assessed the current economic situation, as well as economic expectations, more positively than in the previous survey. The indicator climbed slightly upwards as a result. The strong upward momentum of world economic climate is expected to carry on in 2018

Figure 3



To further analyse which countries are the main drivers behind this global upturn, we plotted the main advanced economies and key emerging markets in the Business Cycle Clock below and visualised the change from last quarter to the current quarter (see Figure 4). The main advanced economies are clearly in the boom quadrant, with the Netherlands, Germany and USA taking the lead. Italy is also following suit in this quarter. The UK, on the other hand, is clearly falling behind, as it moves further into the recession quadrant. The Business Clock also illustrates that the main emerging markets are also benefitting from the upswing in the Advanced economies, although not as strongly. Brazil, South Africa and Russia, moved further into the Upswing quadrant of the boom in this quarter.

Figure 4



The ifo World Economic Climate is the arithmetic mean of the assessments of the current situation and economic expectations for the next six months. The correlation of the two components can be illustrated in a four-quadrant diagram ("ifo Business Cycle Clock"). The assessments on the present economic situation are positioned along the abscissa, the responses on the economic expectations on the ordinate. The diagram is divided into four quadrants, defining the four phases of the world business cycle. For example, should the current economic situation be assessed as negative but expectations as positive, the world business cycle is in an upswing phase (top left quadrant).

tion to this rule, although economic expectations did brighten there too.

In **Estonia** assessments of the current situation improved further, reaching 95.2 on the balance scale. The economic outlook, however, points to economic stabilisation as fewer experts expect any further improvement over the next six months. **Greece** is the only euro area county with a negative economic climate of -24.3 on the balance scale. This, however, marks the least negative economic climate since spring 2008. Both demand indicators, consumption and investment, were negatively assessed, but WES experts in Greece expect improvements in these areas in the next six months. Growth in the euro area now seems more broad-based than in the last survey (see Figure 5).

There are several drivers behind the general upswing in the euro area. A growing number of survey participants reported an uptick in investment activity and private consumption, which they expect to generate marked growth in the months ahead. Experts also expect foreign trade to pick up and see an inflation rate of 1.7 percent in 2018, following the 1.5 percent increase in consumer prices in 2017. At the same time, fewer survey participants expect interest rates to rise in the long term. Experts assessed access to bank loans as largely restrictive.

The economic climate in the remaining **G7** countries, with the exception of the United Kingdom, is very favourable. In the **United States** and in **Japan** both components of the economic climate were more positively assessed than in the previous survey, causing a sharp increase in the climate indicator. In Japan economic performance was assessed at 35.5 balance points, the highest value since winter quarter of 2007. Capital expenditure is currently the main driving force behind this upturn and may be related to the Olympic building boom for the summer Olympics in Tokyo in 2020. Inflation expectations were upwardly revised by 0.2 points from 0.8% in 2017 to 1.0% for 2018 (see Table 1). They nevertheless continue to lag a long way behind the Bank of Japan's 2.0% target. Current assessments of private consumption waned somewhat, but are expected to pick up in the next six months. Access to bank loans was only mentioned by 26.7% of experts as a constraint on the Japanese economy (see Table 2). In the **United States** both capital expenditure and private consumption are driving this upturn in economic performance and growth is expected to continue in the near future. Investment is benefitting from US tax policy changes. The majority of US WES experts expect both short and long-term interest rates to increase in the next six months. The ability of firms to obtain bank loans was only considered as a constraint by 23.4% of US experts (see Table 2). Experts see the euro and Sterling as slightly overvalued vis-à-vis the US dollar. The Japanese yen, by contrast, was considered to be at its proper value. Although economic performance was more favourably assessed than in the last survey, expectations in **Canada** clouded over considerably.

Table 1

Inflation Rate Expectations for 2018 and in 5 Years (2023)

Aggregate*/Country	2018	2023	Country	2018	2023
Average of countries	**4.1**	**4.5**	Bosnia and Herzegovina	1.2	2.2
EU 28 countries	2.0	2.5	Brazil	3.8	3.8
Euro area a)	1.7	2.2	Bulgaria	2.1.0.	5.6
			Cabo Verde	1.9	2.5
Advanced Economies	**1.8**	**2.4**	Chile	2.4	2.9
Australia	2.3	2.8	China	2.0	3.1
Austria	2.1	2.2	Colombia	3.5	3.2
Belgium	1.8	2.1	Croatia	1.7	2.3
Canada	2.0	2.2	Ecuador	0.9	2.4
Czech Republic	2.4	3.0	Egypt	17.0	8.0
Denmark	1.6	1.9	El Salvador	2.9	3.6
Estonia	3.2	2.3	Georgia	4.7	5.2
Finland	1.3	1.9	Guatemala	4.8	4.2
France	1.5	2.1	Hungary	2.7	3.2
Germany	2.0	2.2	India	5.0	4.4
Greece	1.4	2.1	Kazakhstan	7.0	5.5
Hong Kong	2.1	3.5	Kenya	6.8	7.0
Ireland	1.4	2.1	Kosovo	3.1	1.7
Israel	1.5	4.3	Lesotho	5.1	4.5
Italy	1.4	2.1	Malaysia	3.5	4.1
Japan	1.0	1.6	Mexico	5.3	3.8
Latvia	2.8	3.0	Morocco	2.2	2.4
Lithuania	2.8	2.2	Namibia	6.5	6.7
Netherlands	1.6	2.2	Nigeria	14.3	10.2
New Zealand	1.9	2.2	Pakistan	6.3	7.5
Norway	2.0	2.6	Paraguay	4.5	4.3
Portugal	1.6	2.0	Peru	2.3	2.6
Republic of Korea	2.2	3.0	Poland	1.6	2.6
Slovakia	1.9	2.7	Romania	3.2	4.3
Slovenia	1.7	3.3	Russian Federation	4.7	7.1
Spain	1.9	2.7	South Africa	5.5	5.4
Sweden	1.9	2.1	Sri Lanka	6.1	4.9
Switzerland	0.6	1.3	Thailand	1.8	3.0
Taiwan	1.1	1.5	Togo	1.7	2.9
United Kingdom	3.0	2.6	Tunisia	7.3	6.8
United States	2.1	2.7	Turkey	10.1	6.6
			Ukraine	12.3	6.5
Emerging market and developing economies	**5.7**	**6.0**	Uruguay	7.2	7.3
Argentina	19.3	7.5	Zambia	6.8	5.9
Bolivia	4.7	6.8	Zimbabwe	5.3	6.9

* To calculate aggregates, country weights are based on gross domestic product based on purchasing-power-parity (PPP) in international dollars (database IMF's World Economic Outlook). – a) Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Spain, Slovenia, Slovakia.

Source: ifo World Economic Survey (WES) I/2018.

Canada's weaker economic outlook may be due to over-stretched consumers and domestic consumption is expected to slow down in the months ahead. The possible unravelling of NAFTA may also be sapping business confidence. In Canada only 16.7% of respondents indicated that bank loans were restricted. WES experts in the **United Kingdom** assessed the present economic situation as unfavourable and are very pessimistic about the future. As Brexit negotiations continue, WES experts are also calling for an early resolution, as the negotiation procedure itself is giving rise to a great deal of business uncertainty. As Figure 4 in the Box 1 shows, the United Kingdom is the only large European country that is in the recession quadrant, according to the WES experts.

The dynamic upswing in the euro area can also be seen in **Other Advanced Economies**. Assessments of the current situation in particular improved further from an already high level. The **Czech Republic's** economic performance was assessed with the highest points on the balance scale for the third time in a row. Its economic climate nevertheless deteriorated slightly, as experts do not foresee any further improvement in the months ahead. Both private consumption and capital expenditure are currently assessed as highly satisfactory; but they are expected to cool down in the next six months. Only 25.0% of WES respondents in the Czech Republic considered bank lending to firms as constrained by bank specific factors. At the same time, all experts were of the opinion that short-term interest rates will be increased in the next six months. In **Norway** private consumption and investment are currently favourably assessed, but experts are slightly less optimistic about the next six months. This was also reflected

in the economic outlook, with experts scaling back their assessments. They are now still optimistic, but more cautious. 60.0% of respondents reported that the banks' condition was hindering the availability of loans to firms. **Australia's** economic climate indicator dropped slightly, as economic expectations clouded over somewhat. Although capital expenditure is expected to increase further, survey participants do not anticipate any further upturn in private consumption. The Japanese yen and Sterling are seen as slightly overvalued vis-à-vis the Australian dollar, while the other currencies (euro and dollar) are deemed to be at their proper value. In Australia a small majority of WES experts also reported that the supply of bank credit to firms is constrained by bank specific factors. The economic climate among **the Asian Tiger** countries improved sharply, as both components were considered more favourable than in previous survey. The economic upswing that started in the second quarter of last year looks set to continue. The main driver behind this uptake is domestic consumption, which was assessed as far better than in the previous survey. Trade is also expected to pick up further (see Figure 7). Inflation expectations for 2018 are set at 1.8%, marking an increase of 0.4% versus 2017. Inflation expectations in 5 years were pegged at 2.5% (see Table 1). 59.4% of WES experts in this region reported constraints on bank lending to businesses (see Table 2).

RECOVERY IN EMERGING MARKET AND DEVELOPING ECONOMIES CONTINUES TO FIRM UP

The climate for emerging markets and developing economies remained positive for the fourth quarter in a row. The indicator increased by 7.2 points to 15.6 on the balance scale. At 6.0 points, the current economic situation reached its highest level since autumn 2011. Although the current situation was more positively assessed in most regions, the improvement in the aggregate indicator can be attributed to Emerging and Developing Asia and Europe (see Figure 2).

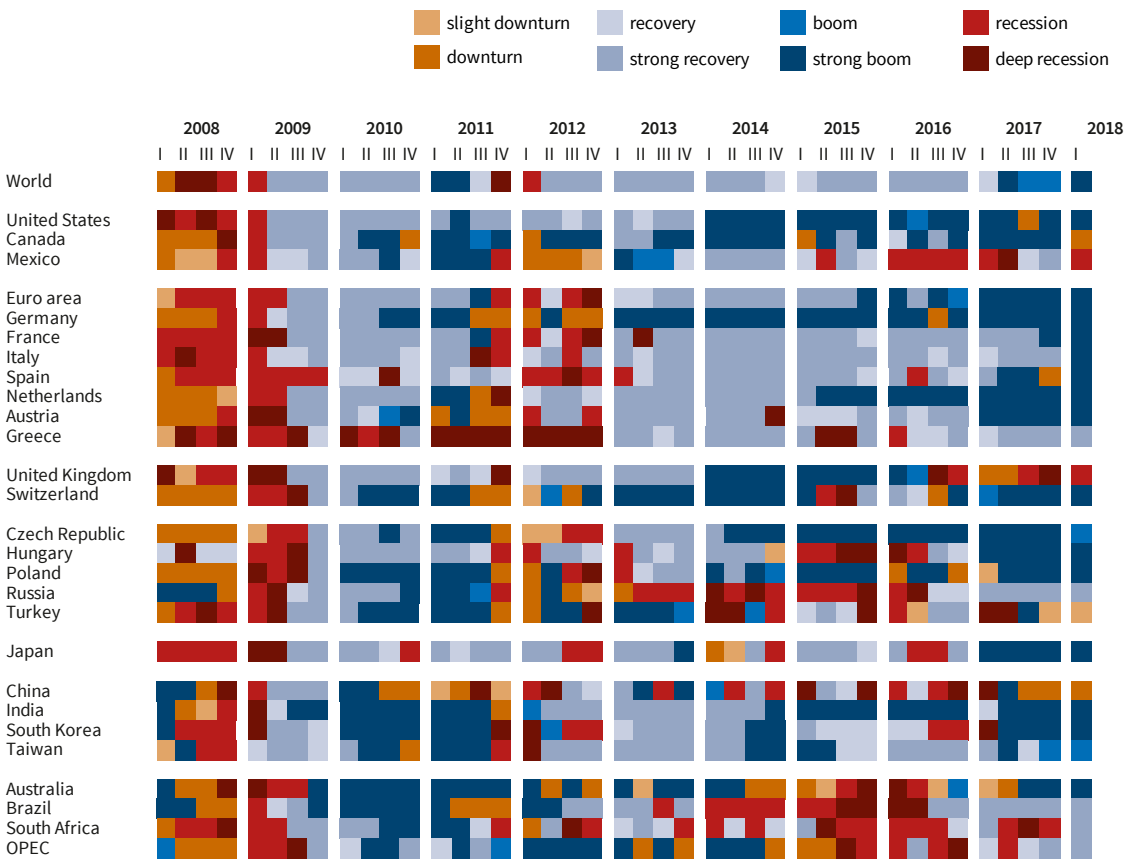
Economic performance in the main emerging markets (**Brazil**, **Russia**, **India**, **China** and **South Africa** – **BRICS**) also improved. The current economic situation was more positively assessed at 7.0 points and is now deemed satisfactory. This marks its highest value since autumn 2011. Expectations also improved, indicating a further strengthening of the recovery in the months ahead. The further improvement in **India**'s economic climate was the main driver behind BRICS' aggregate uptake. The economic climate indicator in India rose sharply to 43.9 points from 13.8 points in the previous survey. Both private consumption and capital expenditure are expected to improve in the months ahead. Volume in trade for both imports and exports are set to pick up further. As far as the four main currencies are concerned, the euro is slightly overvalued, whereas the Japanese yen is considered to be undervalued against the Indian rupee. More experts than in the previous survey believe that both short and long-term interest rates will increase (see Figure 8). Inflation rates for 2018 are expected to be 0.2% higher than in 2017 (see Table 1). In **China**, the economic climate indicator remained at the same favourable level. Domestic demand seems to be the main driver, as capital expenditure is assessed as weak, with no improvement expected in the near future. Out of the four main currencies, only the US dollar is deemed to be slightly undervalued vis-a-vis the Chinese renminbi. The other three currencies are assessed as being at their proper value. A growing number of Chinese respondents expect interest rates to increase in the next six months (see Figure 8). Credit loans to the private sector are considered by 87.5% of the respondents as restrictive (see Table 2). In **Russia**, current economic performance was assessed as unfavourable, but the economic outlook brightened somewhat, leading to a very small improvement in the economic climate indicator. The indicator turned positive for the first time since 2012. There is nevertheless room for improvement for both demand and investment. The export sector, on the other hand, is expected to pick up further. 81.8% of Russian respondents report that the supply of credit to firms is constrained (see Table 2). In **Brazil**, assessments of economic performance were more positively assessed than in the previous survey, albeit at a low level. Combined with the optimistic outlook, this results in a climate of 4.4 points on the balance scale. This is the first positive climate value since summer 2013 and suggests that a firmer recovery is expected in Brazil. All four main currencies are considered as undervalued vis-à-vis the Brazilian real. This may boost exports, as experts also indicate an uptake in the sector. Inflation expectations for the current year were set at 3.8%. As far as interest rates are concerned, experts expect them to fall, but not to the same extent as in the last survey. 75.0% of experts also reported constraints on bank lending to firms. In **South Africa** assessments of the current economic situation deteriorated somewhat, but expectations remained optimistic, leading to an improvement in the overall climate to -11.6 points on the balance scale. The optimistic outlook may be related to the election of Cyril Ramaphosa as leader of South Africa's ruling ANC party. There are hopes that he will pursue a more open policy towards the Western world and the international community than his predecessor Jacob Zuma; and many are now hoping this election will restore investor confidence.

OTHER EMERGING MARKETS

Within the other aggregates of emerging and developing economies, **Emerging and Developing Asia** leads this group in terms of its economic climate indicator (see Figure 2). Current economic performance is judged as very good and WES experts are optimistic about the future. Although the present situation was somewhat more positively assessed in **Emerging and Developing Europe,** WES experts remain cautious the months

Figure 4

World Economic Survey
Heatmap



Notes: The assessments of the current situation and economic expectations for the next six months are visualised as a Heat Map (see Figure 4). The results of the survey are represented by a four colour scheme that illustrates the four phases of a business cycle: boom, downswing, recession, and upswing. These colours are slightly lighter when the values of the assessment of current situation and economic expectations are within the rage of –20 and +20. To emphasise the different extends of the four phases.

Source: ifo World Economic Survey (WES) I/2018.

ahead. This resulted in no improvements in the economic climate, and recovery is expected to remain sluggish. In **Latin America** and the **Commonwealth of Independent States (CIS)** the economic climate remained poor. Although assessments of the present situation in Latin America improved, economic expectations were scaled back slightly. In the CIS countries a reverse pattern emerged: assessments of current economic performance deteriorated, but the economic outlook brightened. In **Sub-Saharan Africa** and the **Middle East and North Africa**, however, assessments of the current situation remained negative.

The improvement in the economic climate of **Emerging and Developing Asia** was mainly due to **India** and **Pakistan**. Current performance, as well as the economic outlook, was assessed more positively than in previous survey. The **Asean 5**[1] countries (see Figure 9) saw their economic climate improve due to better assessments of the current situation. Indicators for consumption and investment were nonetheless weaker than in the previous survey. Experts expect an inflation rate of 3.8% for 2018 (see Table 1). Out of the four main currencies, the euro was the only one deemed to be undervalued compared the various currencies of the Asean 5 countries. 36.5% of respondents reported constraints in bank lending to firms. With more respondents expecting exports to pick up in the months ahead, the trade balance is also expected to improve.

The economic climate indicator for **Emerging and Developing Europe** remains around 10 points on the balance scale. The aggregate nevertheless moved into the recession quadrant of the clock (see Figure 2) due to more pessimistic expectations. A small majority of respondents reported that bank lending to firms was constrained. Bulgaria, Hungary, Poland and Romania nevertheless stayed on track for recovery, with their economic climates remaining favourable. These countries in particular stand to benefit from the favourable external environment, as export demand from the euro area strengthens. In **Hungary**, the current situation was assessed less favourably than in the previous survey, but remains very satisfactory at 28.6 points. Investment is expected to pick up, but consumption

[1] Indonesia, Malaysia, Singapore, Philippines and Thailand.

Table 2

Supply of bank credit to firms

Percentage of experts who report moderate or strong constraints	
Cabo Verde	100.0
Hong Kong	100.0
Kenya	100.0
Malaysia	100.0
Nigeria	100.0
Zimbabwe	100.0
Greece	94.7
Ukraine	90.9
Italy	90.0
Namibia	85.7
Spain	84.6
Bolivia	83.3
Kazakhstan	83.3
Togo	83.3
Latvia	81.8
Russian Federation	81.8
Egypt	80.0
Romania	80.0
Slovenia	80.0
Portugal	78.9
China	78.5
Brazil	75.0
Israel	75.0
India	72.7
Ireland	70.0
Lesotho	66.7
Hungary	64.3
Chile	63.6
New Zealand	62.5
Uruguay	62.5
Bulgaria	61.5
Mexico	61.5
Norway	60.0
Thailand	60.0
Turkey	60.0
Colombia	58.8
Argentina	58.3
Australia	58.3
Netherlands	57.9
Georgia	54.5
Republic of Korea	53.8
South Africa	52.4
United Kingdom	51.5
Lithuania	50.0
Pakistan	50.0
Sweden	50.0
Peru	46.7
Slovakia	44.4
United States	42.1
Poland	40.0
Germany	38.8
Croatia	37.5
Belgium	35.7
Austria	35.0
Switzerland	35.0
France	32.0
Taiwan	28.6
Japan	26.7
Czech Republic	25.0
Finland	25.0
Paraguay	25.0
Philippines	25.0
Canada	16.7

Only countries with more than four responses were includedin the analysis.
Source: Ifo World Economic Survey (WES) I/2018

weakened somewhat. Experts are positive about the export sector. All of the main currencies are considered to be undervalued compared to the Hungarian Florint, but especially Sterling and the yen. Inflation rate expectations for 2018 were pegged at 2.7%, an increase of 0.5% compared to the expectations of 2017 (see Table 1). 64.3% of experts state that banks are constricted in their lending to firms. In **Poland**, by contrast, only 40.0% of experts reported financing constraints. In line with the situation in Hungary, respondents in Poland also expect inflation rates to rise. After a 0.4% upturn, inflation expectations are now 2.6% for 2018 (see Table 1). According to Polish WES respondents, the four main currencies are undervalued compared to the Hungarian Zloty and experts expect exports to pick up in the months ahead as a result. The economic climate in Poland is very favourable, and present economic performance is judged to be very good at 65.0 points. The main driving force behind this development is private consumption. Indicators for investment, by contrast, are very weak. **Turkey's** current economic performance improved, but its outlook worsened. This, however, had no strong effect on the overall economic climate. Investment was deemed to be weak, but consumption was positively assessed. Bank lending to firms was also assessed as restrictive by 60.0% of respondents. Although the euro, US dollar and Sterling were assessed as undervalued against the Turkish lira, imports are expected to pick up more than exports, resulting in a worsening of the trade balance.

Although the economic outlook clouded over somewhat in **Latin America**, the present economic situation was more positively assessed, albeit at a low level. This resulted in a positive economic climate of 1.5 points on the balance scale for the first time since summer 2013. Confidence in a cautious economic recovery may strengthen in the months ahead. Further downward revisions for **Venezuela** are offsetting this general upturn.[2] **Mexico's** economic climate deteriorated again as the economic outlook clouded over. Both investment and consumption are considered weak. A factor that could bring some economic growth would be an uptick in the export sector. Here experts voiced slightly more optimism. Inflation rate expectations for 2018 were set somewhat lower (5.3%) than the expectations for 2017 (5.9%) (see Table 1). 61.5% of the experts reported a restrictive supply of bank credit to firms (see Table 2).

The economic climate of the **Commonwealth of Independent States (CIS)** barely improved, remaining just above the zero-line. For the whole region experts assessed the six-month outlook more positively than the current economic situation. A factor in these optimistic expectations may be the recovery in oil prices, which underpin GDP growth. This tendency was identified by WES experts in **Azerbaijan** and **Rus-**

[2] The Aggregate of Latin America does not include data on Venezuela. Due to the current extraordinary economic circumstances.

sia. In **Armenia**, **Georgia** and the **Ukraine**, by contrast, the economic outlook was downgraded slightly. In the Ukraine this may reflect the lack of political effort to undertake reforms. The present economic situation was evaluated as the same or worse than in the previous survey in all countries except for Georgia, where it improved by 16.3 points. The expected inflation rate for 2018 in the CIS-Region was pegged at 6.1% (see Table 1). The currencies of the CIS-countries strengthened vis-à-vis all main currencies, which was mainly due to the appreciation of the Russian ruble.

Sub-Saharan Africa saw its economic climate indicator rise above zero for the first time since spring 2015 to 9.2 on the balance scale. The present economic situation was again assessed as negative, but better than in the last survey. In Sub-Saharan Africa, 82.5% of the experts reported constraints on the supply of bank credit to firms, versus only 58.8% in the Middle East and North Africa. In **Kenya**, the overall economic climate improved due to a more optimistic outlook, while the present economic situation remained unchanged at a low level. Here a driving force may be the country's heavier investment in infrastructure development. The current and future situation in terms of capital investment was assessed as better than in the previous survey. Aggregate economic performance for the **Middle East and Northern Africa** countries improved, but remains weak. The economic outlook deteriorated significantly for the second quarter in a row.

ARE DIGITAL CURRENCIES A VIABLE ALTERNATIVE TO FIAT MONEY? – WES EXPERTS REMAIN SCEPTICAL

Digital Currencies (or cryptocurrencies) like BitCoin, Litecoin, Ripple and Ethereum, to name just a few, have gained in popularity over the last decade. Thanks to their popularity, the question of whether they are a viable alternative to fiat currencies is gaining weight. In order to better understand the worldwide potential impact of digital currencies like Bitcoin, we asked WES experts for their assessments.

Generally, all digital currencies rely on block chain technology, which can be seen as a self-contained monitoring system that publically saves and shares every transaction made. This means that the network holds a decentralised historical record of all assets that were sold or purchased, which makes a supervisory intermediary redundant. The recent surge in Bitcoin prices that, in turn, influenced the prices of other crypto currencies also increased the number of comparisons between cryptocurrency and the Dutch Tulip Mania of the 17th century. The underlying question remains whether crypto-currencies have some intrinsic value; or whether they are merely a speculative investment.

Recently a number of prominent economists were asked for their opinion on Bitcoin, and its impact on financial institutions. Unsurprisingly, they disagree on the future of crypto currencies. Joseph Stiglitz, for example, states: "Bitcoins should be outlawed" [3]. Clemens Fuest, President of the Munich-based ifo Institute, said he is more cautious than most sceptics, and mentions we should not be too quick to dismiss Bitcoins, and urges governments and central banks to make plans to regulate Bitcoins.[4] Agustin Carstens, Head of the Bank for International Settlements, warned that Bitcoin is a combination of a bubble, a Ponzi scheme and an environmental disaster.

To gauge a wider number of economists, this article sets out the results of the special question on Digital currencies and block chain technology asked in the WES of January 2018. The first question asked if experts viewed digital currencies as a viable alternative to their own official currency now and in the near future (5 to 10 years). 83.46% of the experts surveyed indicated that they currently disagree with this statement[5]. When asked the same question with relation to the near future, a higher number of experts expect digital currencies to be a more realistic alternative. 58.4% of experts stated that they disagreed and 23.33% of the experts agreed with the statement. When looking at the aggregate level, around 10% of experts from the CIS and emerging and developing Asia agree with the statement that digital currencies are a viable alternative. Their view of the near future, however, is different. There the aggregates of CIS (with 32.8%), as well as Sub-Saharan Africa (with 34.65%), reveal the highest percentage number of experts expecting digital currencies to become a viable alternative (see Figures 5 and 6).

Money is typically defined by economists as having three attributes: it should function as a medium of exchange, a unit of account, and a store of value. To explore which characteristics of money are fulfilled by crypto-currencies, we asked WES experts if they could indicate the extent to which digital currencies fulfil these three attributes in their own respective countries.[6] As most digital currencies do not have an intrinsic value, their use depends upon its usefulness as a currency in the consumer economy.

Digital currencies are facing challenges as a **store of value**, or in other words the ability to buy goods and services, as they are prone to hacking attacks, thefts and other security related problems. Digital currencies do not have a physical manifestation and need to be kept in computer accounts known as digital wallets. With hacking attacks on the rise, the security of these

[3] 'Bitcoin "Ought to Be Outlawed," Nobel Prize Winner Stiglitz Says', *Bloomberg.Com*, 29 November 2017, https://www.bloomberg.com/news/articles/2017-11-29/bitcoin-ought-to-be-outlawed-nobel-prize-winner-stiglitz-says-jal10hxd.

[4] Uwe Westdörp, 'Top-Ökonom Mahnt Dringend Regulierung Beim Bitcoin An', 2017, https://www.noz.de/deutschland-welt/wirtschaft/artikel/993676/top-oekonom-mahnt-dringend-regulierung-beim-bitcoin-an.

[5] Answer categories included: completely agree, somewhat agree, no opinion, somewhat disagree, completely disagree. For this analysis, the completely agree and somewhat agree as well as the somewhat disagree and completely disagree were taken together.

[6] The exact question was: To what extent do digital currencies fulfil the role of money in your country? a) a store of value. b) a medium of exchange c) a unit of account. Answer categories included: no, somewhat, yes, don't know.

"wallets" is becoming a major difficulty.[7] A second problem concerns the high volatility of digital currencies, especially Bitcoins. In the past year Bitcoin's value ose to around USD 20,000 and by 6 February it had fallen to USD 6,000. This slide has taken place amid a flurry of hacks, allegations, and a growing regulatory backlash. However, this was not the first fall in Bitcoin prices. Between 2013 and 2015, after Mt. Gox collapsed, the price of bitcoin fell by 85%.[8] This inhibits digital currencies' capacity to function as a store of value as its ability to buy goods and services is hindered.

To measure the extent to which digital currencies are a **medium of exchange**, i.e. their ability to make payments, one can look at the official numbers. Visa handles over 150 million transactions a day and is capable of handling 24,000 transactions per second. Bitcoins, by comparison, are clearly used in a lower number of transactions. In the last 24 hours there where 165,592 transactions were made with Bitcoins.[9] In addition, the costs of mining are high. One obstacle to Bitcoin becoming a widely used medium of exchange arises from the difficulty of procuring new Bitcoins. Unless a consumer is successful as a Bitcoin miner, s/he must source Bitcoins from online exchanges or dealers, and then find a way to store them securely. For a currency to function as a **unit of account**, consumers must treat it as a numeraire when comparing the prices of alternative retail goods.[10] Bitcoin faces some difficulties in this area as well. Due to its extreme volatility, the value of Bitcoin varies greatly compared to other currencies on a day-to-day basis. This complicates the assessment of how much a Bitcoin is worth at any given time. WES experts in general are quite sceptical about whether digital currencies currently fulfil the role of money in their respective countries. A clear majority of WES experts states that digital currencies do not currently fulfil all three characteristics of money. Most optimistic are the respondents concerning the medium of exchange. 33.1% of the respondents consider digital currencies to some degree as a medium of exchange. Fewer respondents indicated this for a store of value (26.0%) and for a unit of account (18.5%).

According to WES experts, digital currencies are mostly used for online payments, gambling and speculative investments. Remarkably, only 3.8% were of the opinion that digital currencies were used to conduct illegal activities. Other characteristics that may also be considered as a benefit of digital currencies, like independence from commercial or central banks, were not regarded as the main reasons for the use of digital currencies. The main disadvantages of such currencies cited by WES experts were their high price volatility and the lack of regulation. This kind of insecurity makes it difficult to regard digital currencies as sustainable, given that the three characteristics of money are jeopardised due to uncertainty over the value of the currency if regulation or price stability is lacking.

Countries around the world have increased efforts to determine how they are going to regulate the digital currencies. Regulation of digital currencies may, on the one hand, scare off investors, who may try to sell off their currency before the full impact of the regulations is felt. At the same time, however, rules can help to distinguish between scams and safer options. In the US the heads of the Commodities Futures Trading Commission and the Securities and Exchange commission agreed that more regulation is needed "to protect investors, albeit without stifling innovation".[11]

Block Chain Technology the Underlying System of Digital Currencies

Bitcoin and other digital currencies are based upon blockchain technology. A blockchain is essentially a digital ledger of online transactions linked and secured by cryptography, and stored on a peer-to-peer computer network. Updates occur in real-time—in blocks (or groups) of transactions—without interference from or control by a central authority. A blockchain doesn't allow users to change completed transactions, and all users can see the transaction history. This technology is exciting, because the transparency and security of data stored in a blockchain facilitates trust and efficiency between users.[12]

Blockchain technology is mostly solely associated with cryptocurrency transactions. However, it can be used to record any type of exchange including, for example, property sales, audit data, voter identification, or supply chain origin. Block chain can also enable automated governance or regulatory compliance—for example, it could allow people with solar panels to automatically sell electricity to their neighbours.[13]

In this regard, we asked WES experts to what extent they think block chain technology will be of importance in their respective country; and in which areas this technology is most likely to be used. As with digital currencies, WES experts remain sceptical about block chain technology. Currently, only 5.8% of WES experts indicated that this type of technology was of importance for their own country. When asked about the near future, however, this figure increases to 27.71%. This suggests that it may still take some time for the impact of this technology to be felt. With regard to the areas block chain will mostly be used in, 78.3% of respond-

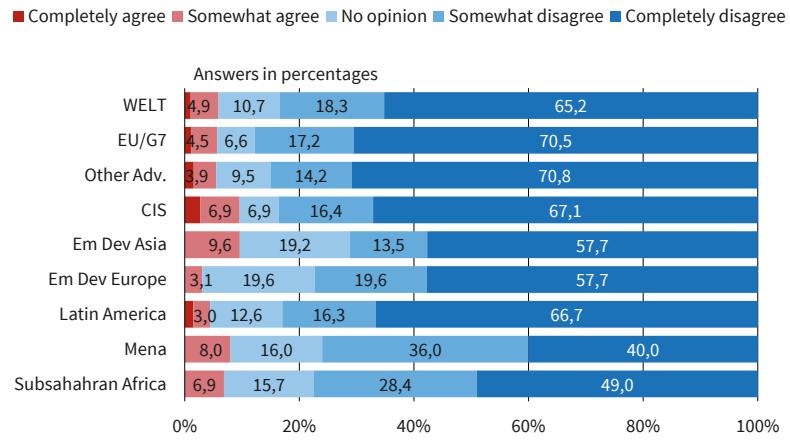
[7] David Yermack, 'Is Bitcoin a Real Currency? An Economic Appraisal', in *Handbook of Digital Currency* (Elsevier, 2015), 31–43.
[8] The Economist, 'Bitcoin and Its Rivals Offer No Shelter from the Storm - Crypto-Correction', February 2018, https://www.economist.com/news/finance-and-economics/21736556-indeed-crypto-plunges-make-other-asset-prices-look-tame-bitcoin-and-its-rivals.
[9] Checked at 13/02/2018 at 09:28 www.blockchain.info/charts.
[10] Yermack, 'Is Bitcoin a Real Currency?'
[11] The Economist, 'Bitcoin and Its Rivals Offer No Shelter from the Storm - Crypto-Correction'.
[12] David Lehr and Paul Lamb, 'Digital Currencies and Blockchain in the Social Sector (SSIR)', 2018, https://ssir.org/articles/entry/digital_currencies_and_blockchain_in_the_social_sector1.
[13] Lehr and Lamb.

ents were of the opinion that online payments were the area in which block chain will be used the most.

To conclude, digital currencies are currently not considered a viable alternative to fiat money by WES experts. The outlook for the near future is slightly more optimistic, an increasing number of WES experts indicate that they see a role for digital currencies in 5 to 10 years. Strikingly, only 3.8% of WES experts indicated a suspicion that digital currencies were used for illegal activities. A similar pattern emerges for the underlying technology to such currencies. Only 5.8% of the WES experts indicated that block chain technology currently has some kind of importance in their own country. When asked about the near future, however, this figures increased to 27.7% of experts.

Figure 5

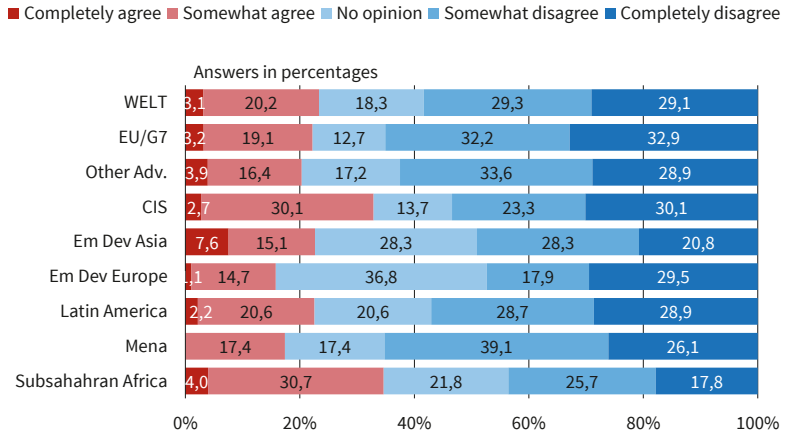
Digital Currencies as an Alternative to Official Currency
At the moment



Source: ifo World Economic Survey (WES) I/2018. © ifo Institute

Figure 6

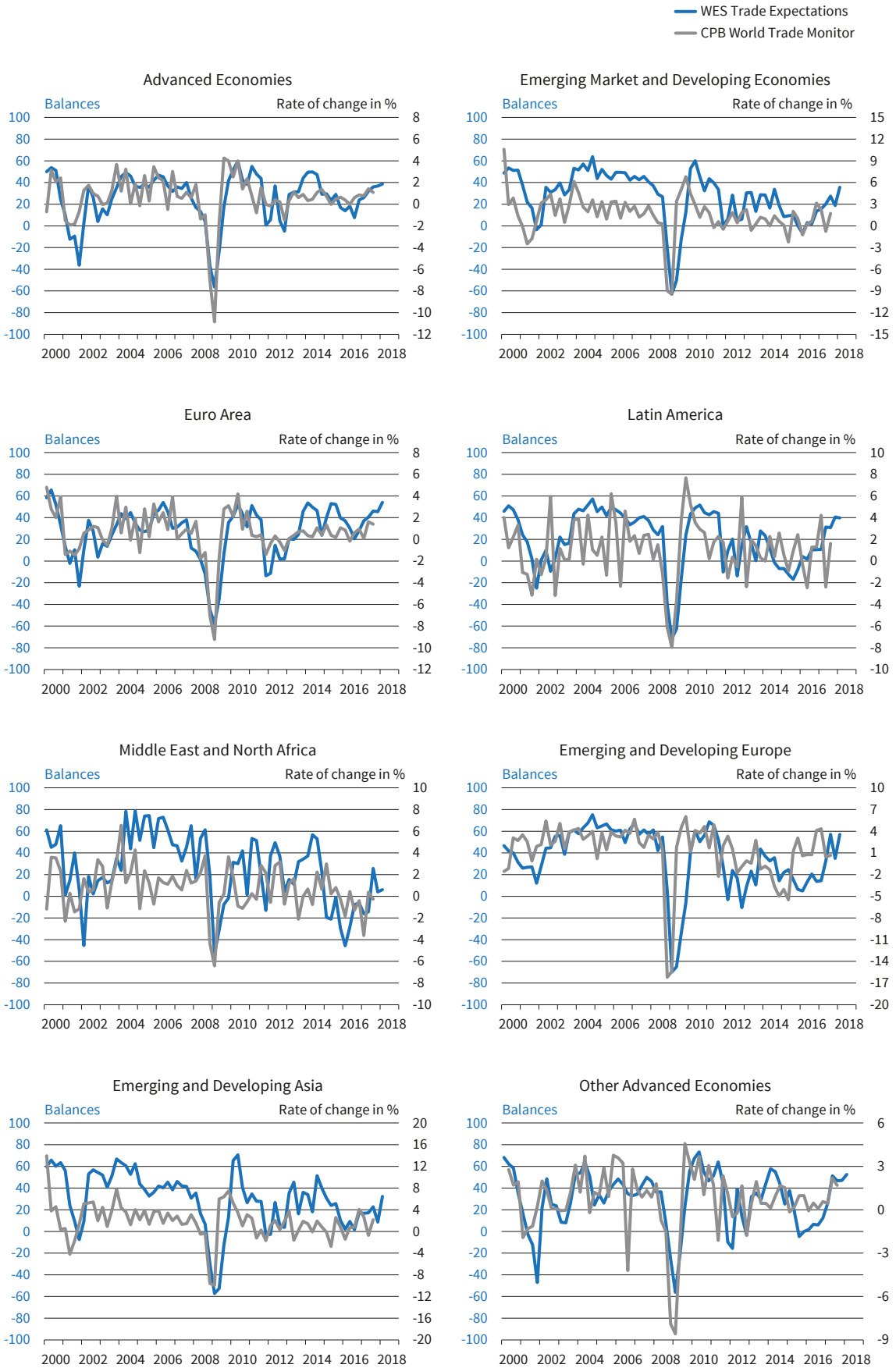
Digital Currencies as an Alternative to Official Currency
In the near future (5 to 10 years)



Source: ifo World Economic Survey (WES) I/2018. © ifo Institute

Figure 7

Comparison of WES Experts Trade Expections and the CPBs World Trade Monitor in Selected Aggregates



Source: ifo World Economic Survey (WES) I/2018; CPB Netherlands Bureau for Economic Policy Analysis (CPB). © ifo Institute

Figure 8

Expected Trend for the next 6 Months for Short- and Long-term Interest Rates

Source: ifo World Economic Survey (WES) I/2018.

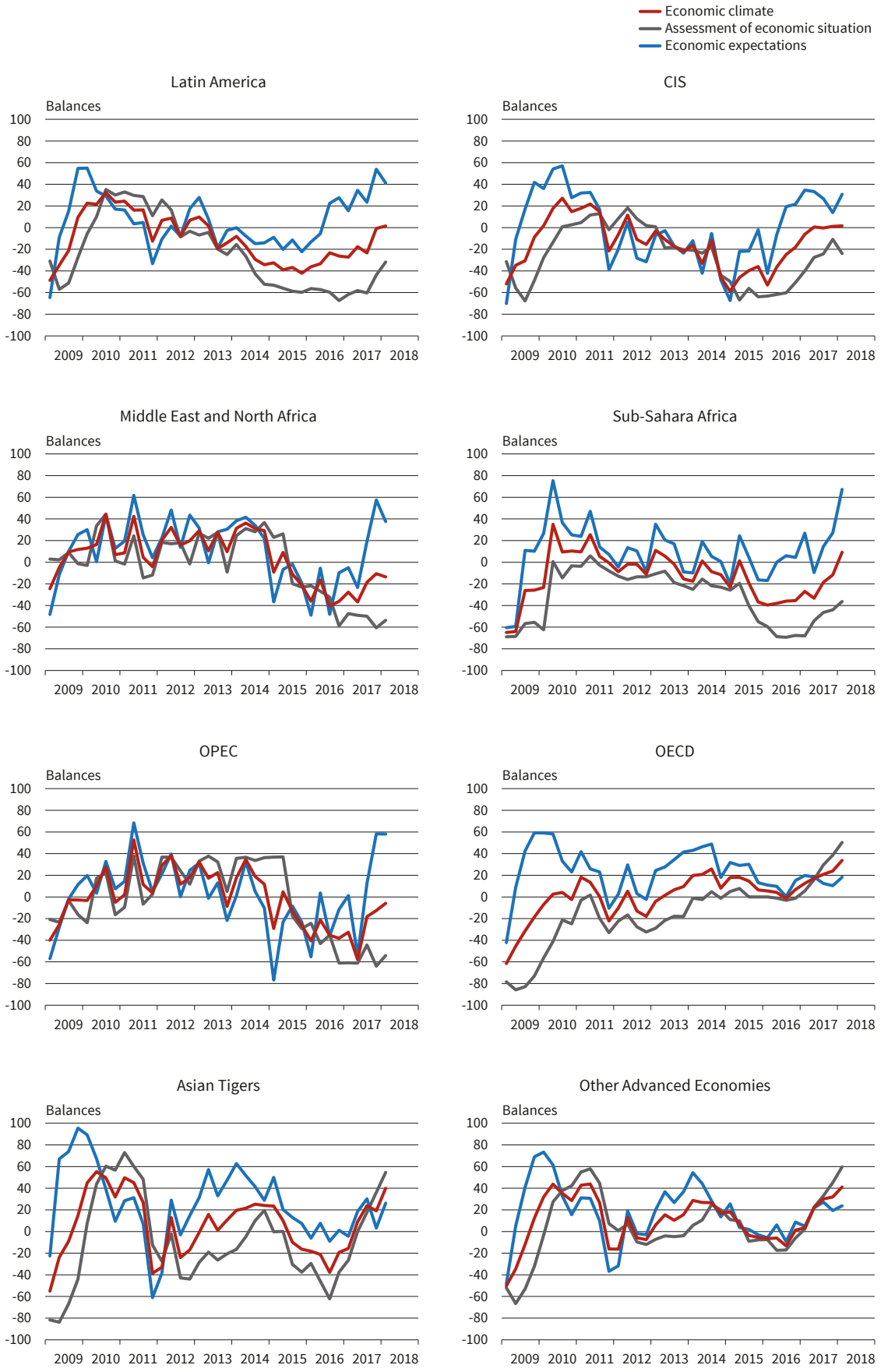
Figure 9.1

Selected Aggregates

Source: ifo World Economic Survey (WES) I/2018.

Figure 9.2

Selected Aggregates



Source: ifo World Economic Survey (WES) I/2018.

Figure 10.1

Advanced Economies

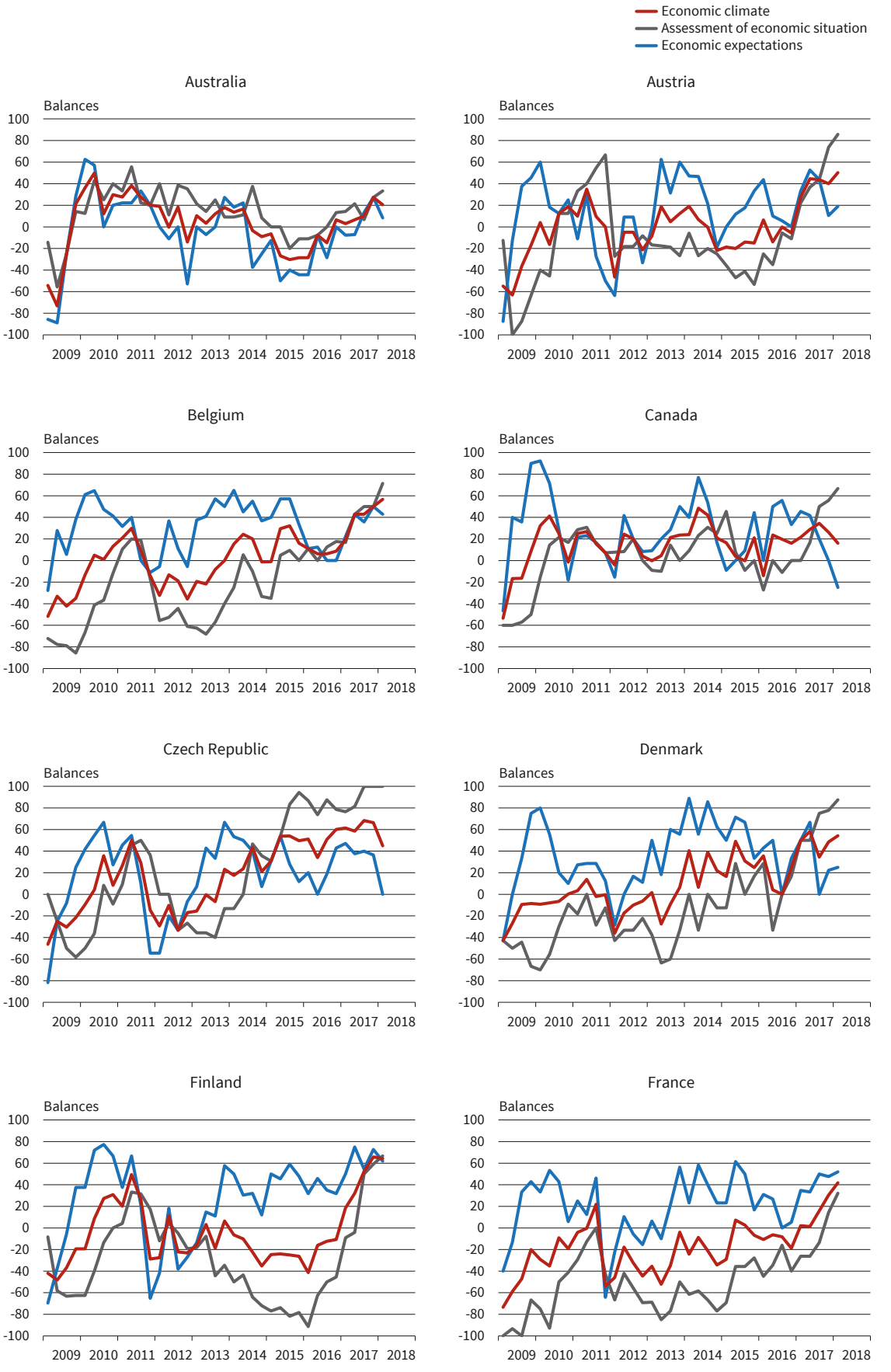


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Figure 10.2

Advanced Economies

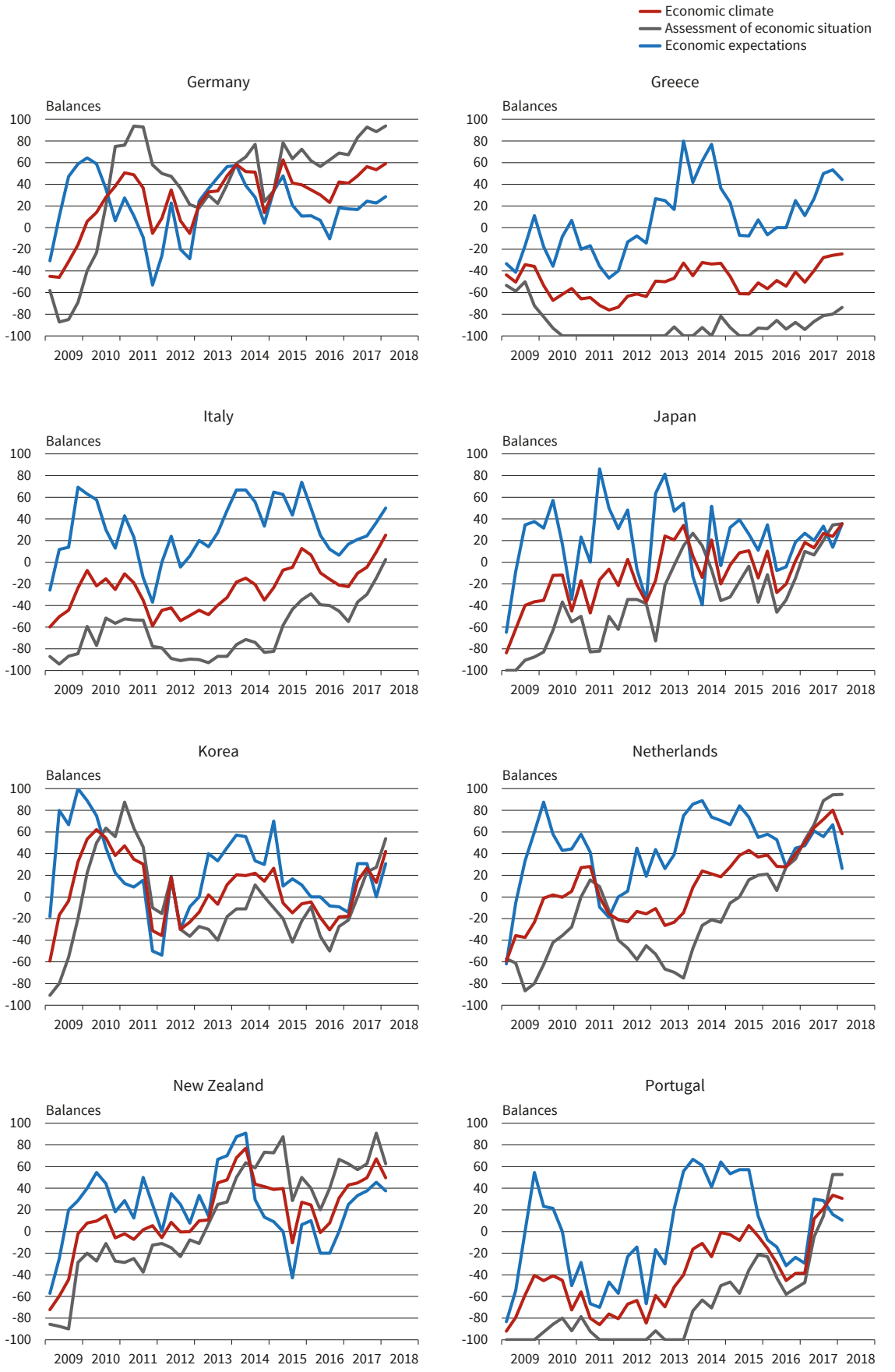

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Figure 10.3

Advanced Economies

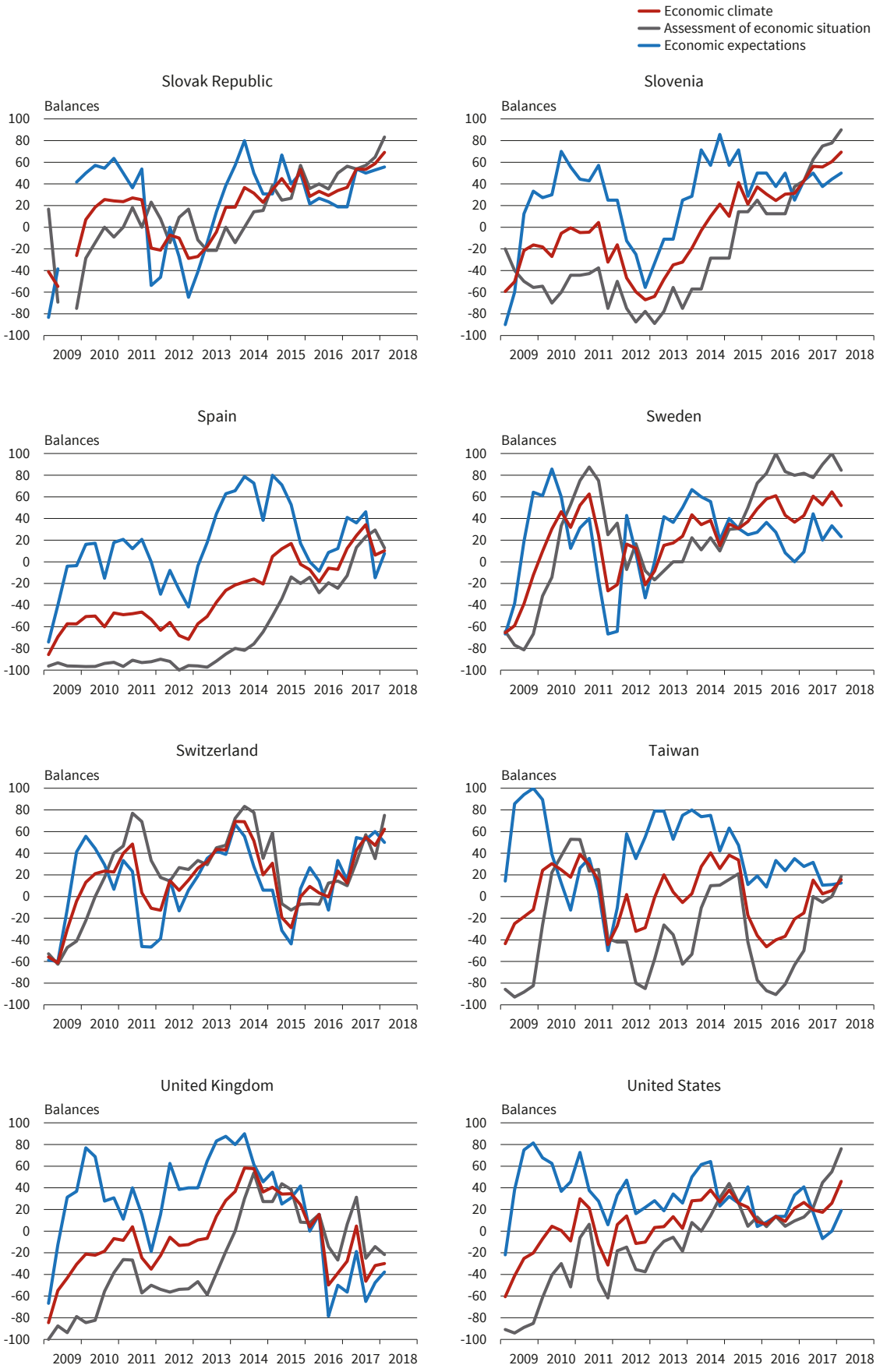

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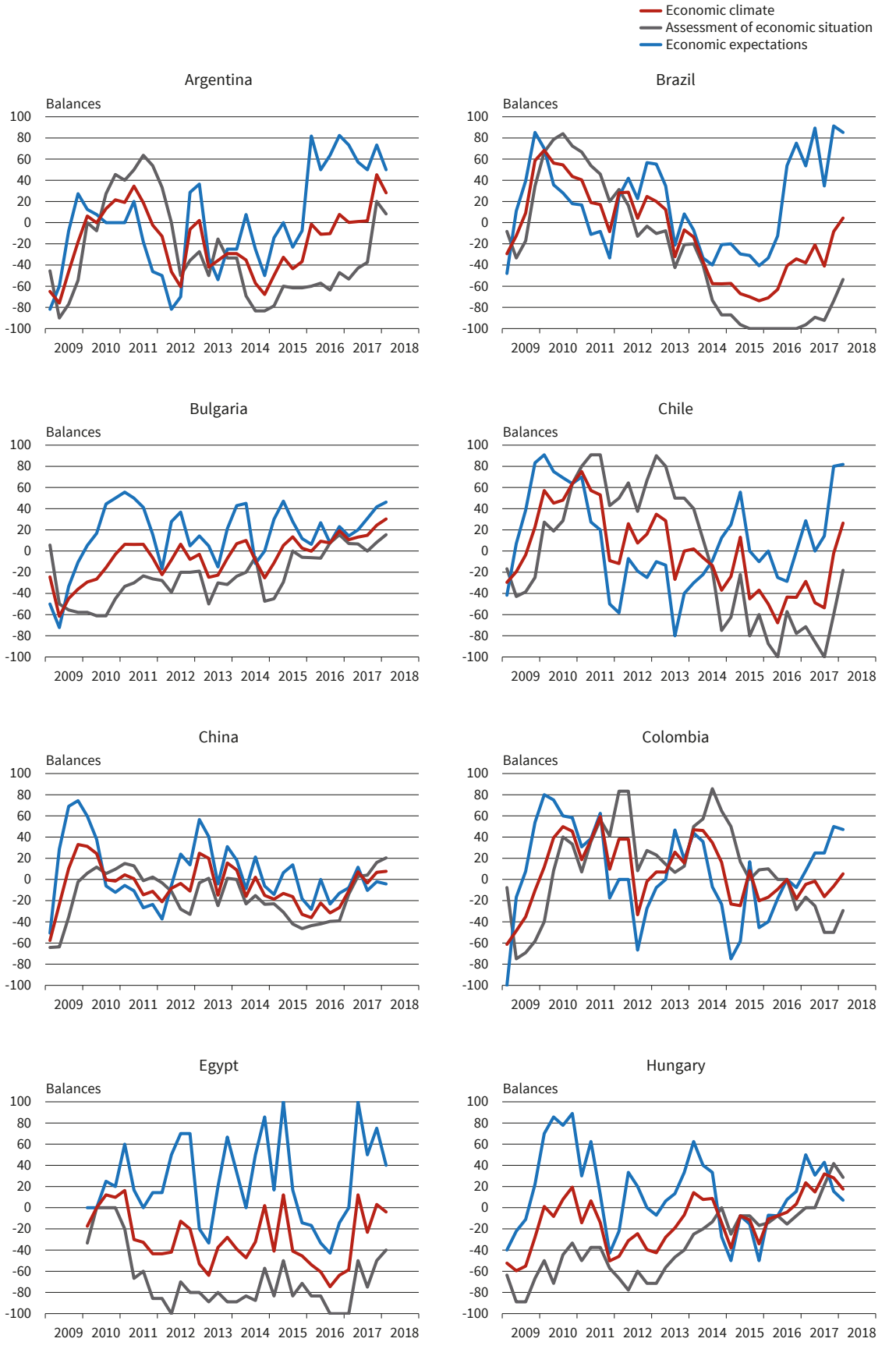
Figure 11.1

Emerging Markets and Developing Economies



Source: ifo World Economic Survey (WES) I/2018.

Figure 11.2

Emerging Markets and Developing Economies

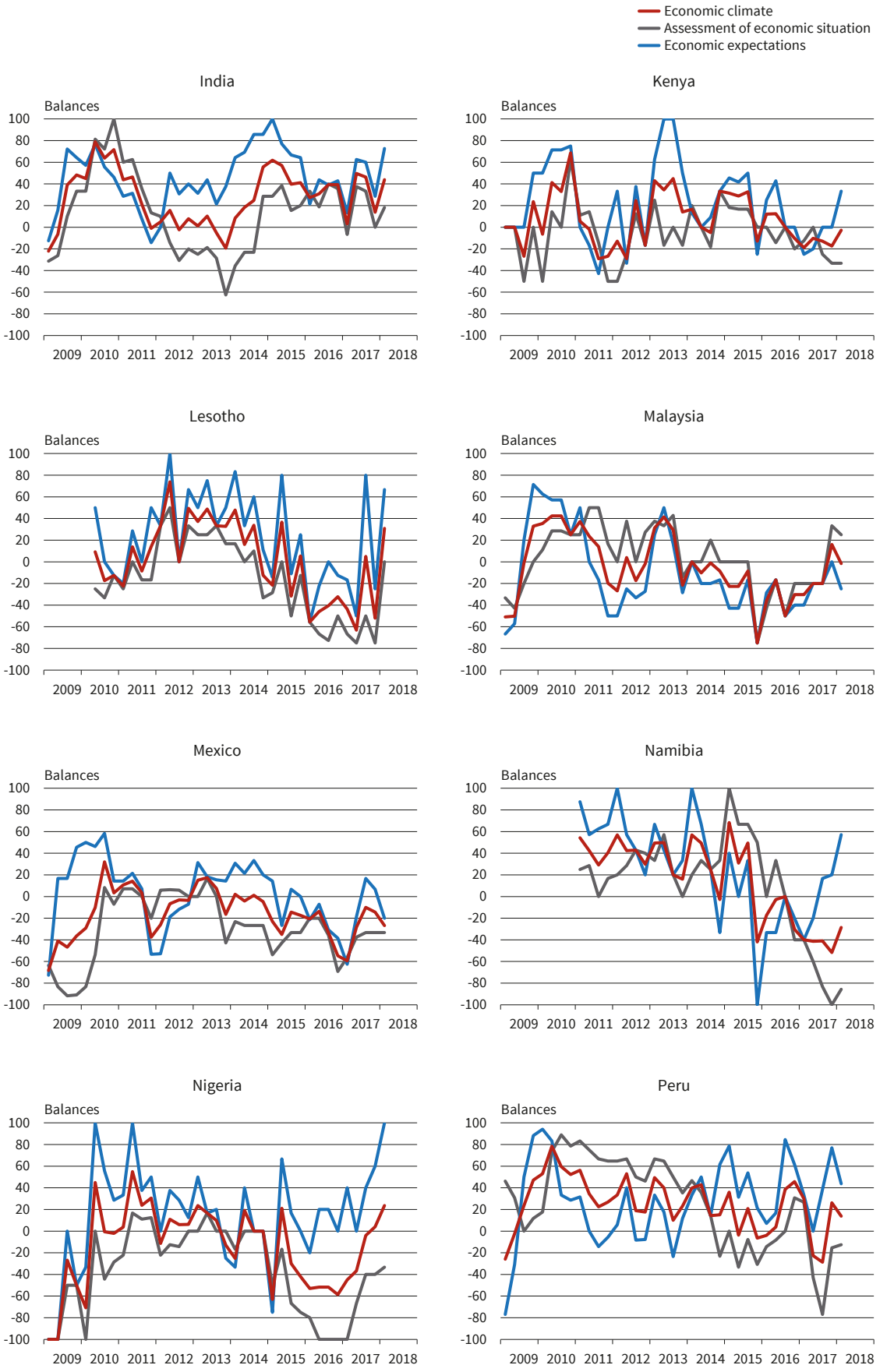


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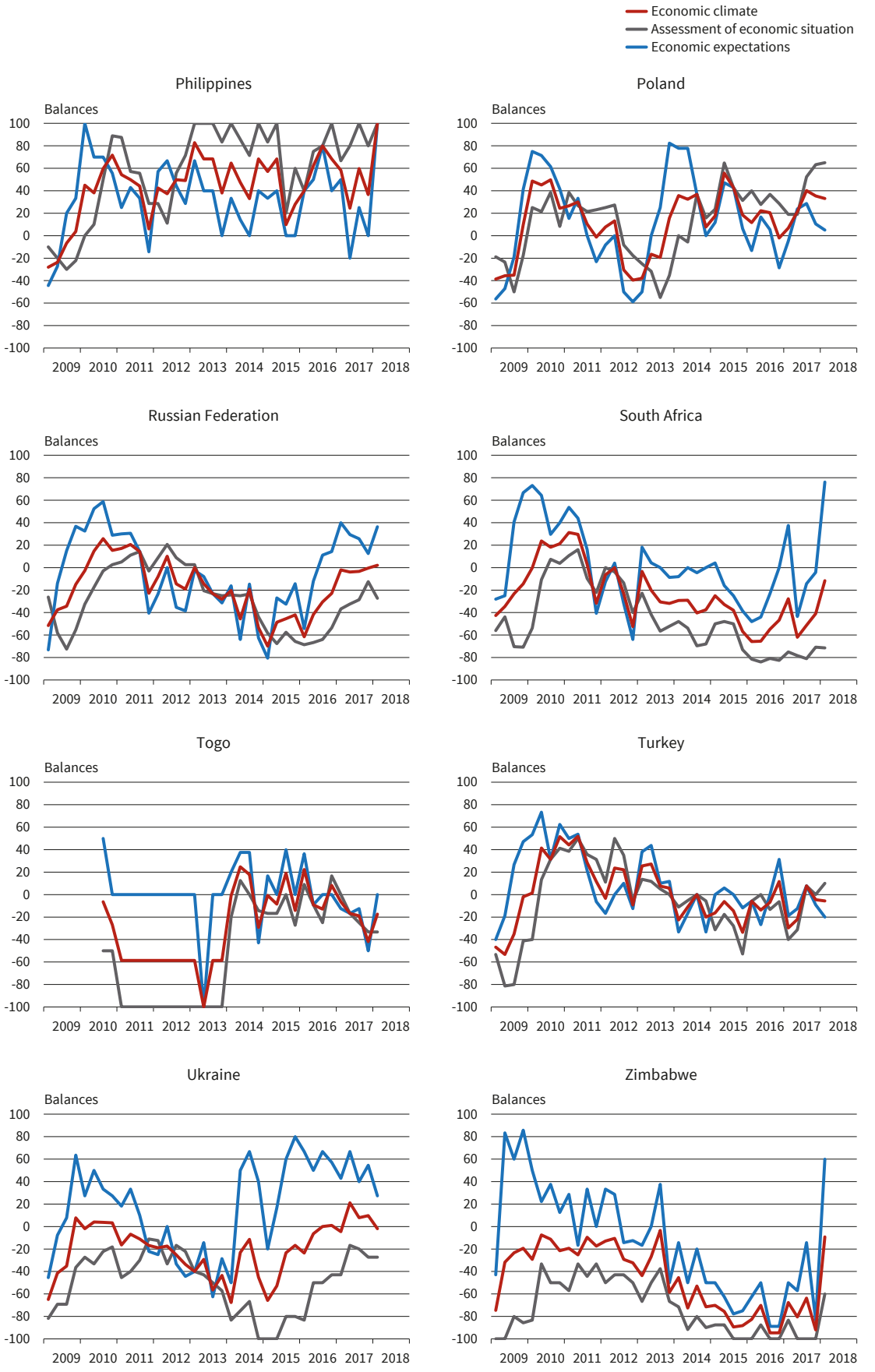
Figure 11.3

Emerging Markets and Developing Economies



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