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Working Paper

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Economic Analysis and Forecasting in the Global Economy and in Emerging and Developing Regions Including Africa: How Informative is the Ifo World Economic Survey (WES)?

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Abstract

Economists around the world rely in addition to official statistics on business (and consumer) surveys, which are more up-to-date. However, for many emerging and developing countries there is a lack of such surveys. This gap can, at least partly, be filled by the Ifo World Economic Survey (WES). In this paper we first describe this survey and also examine how helpful it is for macroeconomic analysis and short-term forecasting. We find that this survey provides important up-to-date information about the cyclical stage of the global economy and of major emerging and developing regions including Africa. Increasing the number of participating experts could further improve its usefulness for macroeconomic analysis in these regions.

JEL-Codes: E010, F010, N140, N150, N160, N170.

Keywords: macroeconomic analysis, business cycle, global economy, emerging and developing countries, Africa.

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1. Introduction

While predicting the future is by nature uncertain getting an objective perspective about Africa's future requires continuous, thorough and neutral analysis based on reliable information. This also throws new light on the statistics on which analysis and assessments rely. For macroeconomic analysis and forecasts Gross Domestic Product (GDP) and its growth as published in national accounts statistics remain the most important internationally comparable indicators even if GDP has many shortcomings and per capita GDP must be supplemented by other indicators when measuring living standards.[1] But GDP measures are surrounded by uncertainty, notably in countries with large structural changes, relatively poor quality of statistics and large informal sectors as in many emerging and developing countries including in Africa (Jerven, 2015).[2] While such measurement problems affect more the level of GDP and to a lesser degree the cyclical fluctuations of GDP growth, a main problem is that official statistics are only available with a considerable time lag. This makes it difficult to get a clear view on the present economic situation, which is necessary when making a forecast.

Therefore economists around the world also rely on business (and consumer) surveys, which provide latest information on the current state of the economy. These surveys are readily available and thus more up-to-date. As participants are asked not only about their assessment of the present situation but also about their expectation for the future, these surveys provide leading indicators, which support economic forecasting. Surveys are widely used by governments, national banks, international organisations and research institutes and complement official statistics. In order to assist economic forecasting in Europe, the EU Commission partly funds for all member countries harmonized business and consumer tendency survey.[3] Most of the advanced economies conduct business surveys, but also in key emerging economies survey based indicators are common. However, for many emerging and developing countries there is a lack of business surveys. This gap could, at least partly, be filled by the World Economic Survey (WES), which is conducted by the German Ifo Institute[4]. This survey includes over 100 advanced, emerging or developing economies from all over the world, including African countries. In recent years Africa's economic development has received more and more attention as the continent has embarked on a higher growth path although more recently global headwinds and regional shocks have reduced growth (AfDB et al., 2016). Assessing the current economic situation requires up-to-date information, which official statistics often do not provide so that economic surveys such as WES could fill the gap.

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[1] Given the shortcomings of national accounts statistics, attempts are now made to develop more comprehensive approaches to measure the well-being of people. For example, the government of Bhutan is relying on the so-called Gross National Happiness Index (GNH) which is based on 33 indicators categorized under nine domains which include among others health, education, good governance, ecological diversity and living standards. Some European countries, such as France, United Kingdom and Germany, have also started to supplement national accounts statistics by more comprehensive well-being indicators (see, for example in France, the Report by the Commission on the Measurement of Economic Performance and Social Progress, www.stiglitz-sen-fitoussi.fr). However, no internationally comparable approach for measuring Well-Being is so far available. The only internationally comparable indicator, which is also available for African countries, is the UN Human Development Index (HDI), which includes, besides average income, life expectancy and education. The UN publishes this index since 1990 and since 2010 the Inequality-adjusted HDI (IHDI), which also considers the distribution of the HDI. As average income, measured by per capita GDP, is also included in these indicators (as well as in the above-mentioned well-being indicators) national accounts statistics remain an important pillar for any economic analysis.

[2] National accounts statistics are based on surveys such as household surveys, industry surveys and agriculture surveys. As these statistics are not available every year, statistical offices use benchmark years for which the most detailed statistics are available and make estimates for years in-between, based on available information and proxies. This can lead to very large revisions when benchmark years are updated and additional data is available. For example, the 2014 statistical revision of Nigeria's national accounts caused its GDP to jump by almost 90 percent making Nigeria's economy the largest in Africa before South Africa. The revision was made by updating the base year for the calculations to 2010 from 1990 when the structure of the economy was quite different as in particular services such as banking and telecommunication were very small.

[3] DG ECFIN: Joint Harmonised EU Programme of Business and Consumer Surveys.

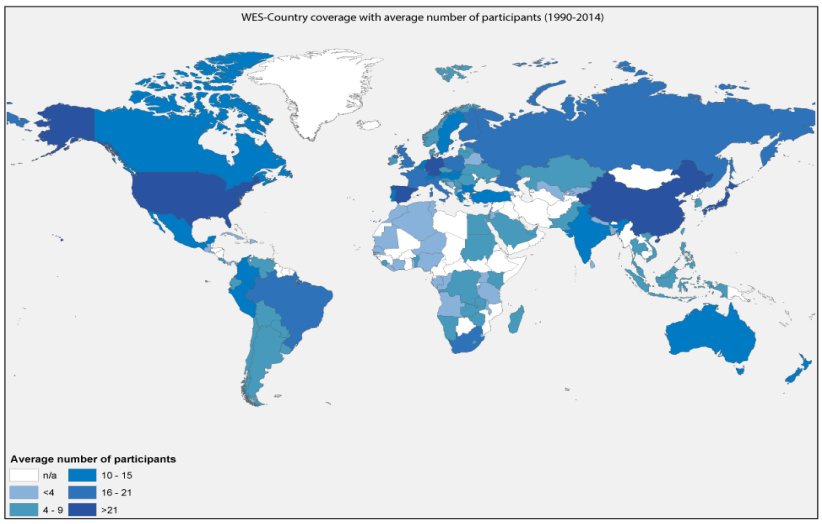
[4] The Ifo Institute has been founded in 1949 and is one of the leading economic research institutes in Europe. It is a non-profit association and (since 2002) an Institute at the Ludwig Maximilian University (LMU) of Munich.

In sections 2 and 3 we describe this survey and examine its usefulness for macroeconomic analysis and forecasting for the global economy and for selected emerging and developing regions including Africa.

2. The Ifo World Economic Survey (WES)

The aim of the Ifo World Economic Survey (WES) is to provide an accurate picture of the current economic situation, as well as short-term economic trends in over 100 advanced, emerging or developing economies by polling more than 1,000 economic experts. Unlike official statistics, which are largely based on quantitative information, WES focuses on qualitative information by asking experts for their assessment of selected key economic indicators for the present and for the near future. While official statistics on an international basis are only available after a certain time lag, WES results are readily available, up-to-date and comparable from country to country. The world map in Figure 1 illustrates the country coverage of WES, together with the average number of participants in different blue colours in the past 25 years.

Figure 1: Worldwide country coverage of the Ifo World Economic Survey (WES)



Source: Ifo World Economic Survey (WES) 1990-2014.

The approach of this expert survey is to monitor the general economic situation and expected economic developments of a whole economy by means of sector-unspecific expert statements. This means that the problem of representativeness (drawing conclusions from a sample to the entire population), which is often experienced in survey designs, does not apply to WES. In the selection of experts for the poll, the emphasis is therefore not placed on the number of experts per country, but rather on their professional competence in economic matters. Participants must be country insiders who are well informed about economic developments in the country and are able to evaluate them. If survey participants are knowledgeable and have good information, the survey can provide a reliable picture of the economic development of a country even with relatively few participating experts. Participation in the WES survey is strictly voluntary. In return for their expertise, all participating experts receive the complete survey results, exclusively and immediately after publication. The WES questionnaire is in English[5] and is uniformly designed for all countries, which makes the results consistent and comparable around the world. Data collection for each survey begins in the first month of the respective quarter (January, April, July and October). Survey participants are required to respond within a period of four weeks. The WES questionnaire consists of questions dealing with eight standard economic topics, regularly recurring additional questions, as well as one-off questions on current

[5] The common English language of the questionnaire has no implication for non-English speaking countries and does not affect the reliability of the results, as all survey participants have no problems with understanding the relatively simple questions.

economic or politically relevant issues in the world (see the questionnaire overview for the regular questions in Box 1).

Box 1: Questionnaire overview:

Quarterly questions:

Current assessments and expectations for the next six months regarding:

- Overall economy
- Capital expenditure
- Private consumption

Expectations on developments for the next six months regarding:

- Foreign trade volume (Exports and imports)
- Trade balance
- Inflation rate
- Short-term and long-term interest rates
- Value of the US dollar vis-à-vis the national currency
- Domestic share prices

Quantitative forecasts on

- average inflation rate (CPI) for the current year
- inflation rate in 5 years (asked since end-2014)
-

Current appraisals

- of the valuation of the leading world currencies compared to the respective national currency

Semi-annual questions:

- Important economic problems (e.g. unemployment, inflation, public deficits or foreign debt)
- Assessment of the climate for foreign investors regarding legal and administrative restrictions or political stability
- Extent of constraint of supply of bank credit to firms (asked since 2013)

Annual questions:

- GDP forecast for the current year (quantitative)
- Mid-term forecast (3 to 5 years) for GDP (quantitative)

Source: Ifo World Economic Survey (WES).

There are three possible response categories for the questions: "good/better/higher" for positive assessments or improvement, "satisfactory/about the same/no change" for neutral assessments and "bad/worse/lower" for negative assessments or deterioration. The individual responses are transferred to an ordinal scale from one (negative) to nine (positive), where five is neutral. The individual replies are combined for each country without weighting as an arithmetic mean of all survey responses in the respective country. Overall grades within a range greater than 5 indicate that positive answers prevail, and this to an even greater degree the more the value approaches the upper end of the scale, i.e. nine. The same applies inversely to the lower end of the scale from one to five. This procedure is intended to avoid the misleading impression that the data arise from exact percentage rates, instead of potentially only a few expert statements. While aggregating the results to groups of countries (e.g. euro area, EU28, CIS countries), the country results are weighted according to the country's share in total world trade. The trade figures published by the UN are used (imports and exports of a country in US dollars).[6]

[6] For a detailed survey description please consult the project page of the Ifo World Economic Survey at the Ifo Institute at http://www.cesifo-group.de/ifoHome/facts/Survey-Results/World-Economic-Survey/WES-Design.html

2.1 Comparing WES climate indicator with economic growth in the world and in selected regions

As can be seen from the questionnaire in Box 1, this survey provides information on a wide range of economic issues. But in in the following we focus only on the answers to the first question concerning the current assessments and expectations for the next six months regarding the whole economy. From the answers to these two questions the WES climate indicator is constructed as an arithmetic mean. Kudymowa, Plenk and Wohlrabe (2013) showed in an earlier study that the WES climate indicator correlates well with the respective business cycle of several countries – measured with yearly growth rates of real GDP. Figure 2 compares the development of the (aggregated) world economic climate indicator and global economic growth over the past 15 years. As global growth is only available on a yearly basis we compare it with the annual averages of the quarterly WES climate indicator. The climate indicator fluctuates broadly in line with global growth. But its fluctuations are smaller and over the past three years WES participants were more optimistic about the current and future economic situation than was reflected in GDP growth. The overall relatively good fit between the climate indicator and global growth is also shown in Figure 3, which compares actual GDP growth with predicted growth. The predicted growth is the result of a simple regression with the climate indicator (Clim) as independent variable (x) and GDP growth (y) as dependent variable. The linear regression is y = - 6.04 + 1.86 * Clim (R-square = 0.71). While during most of the past 15 years the climate indicator predicted quite well actual global growth, it over-predicted growth during the past three years. Figures 4, 5a, 5b and 6 compare actual GDP growth with predicted growth in CIS countries[7], Latin America[8] and there especially in Brazil as well as in the euro area. The reason for using these country aggregates is that we can easily compare the WES results with GDP growth data, as they are available from the IMF or Eurostat, in the latter case even on a quarterly basis. We use again simple regressions with the WES climate indicator as independent variable and GDP growth as dependent variable. The linear regressions are for

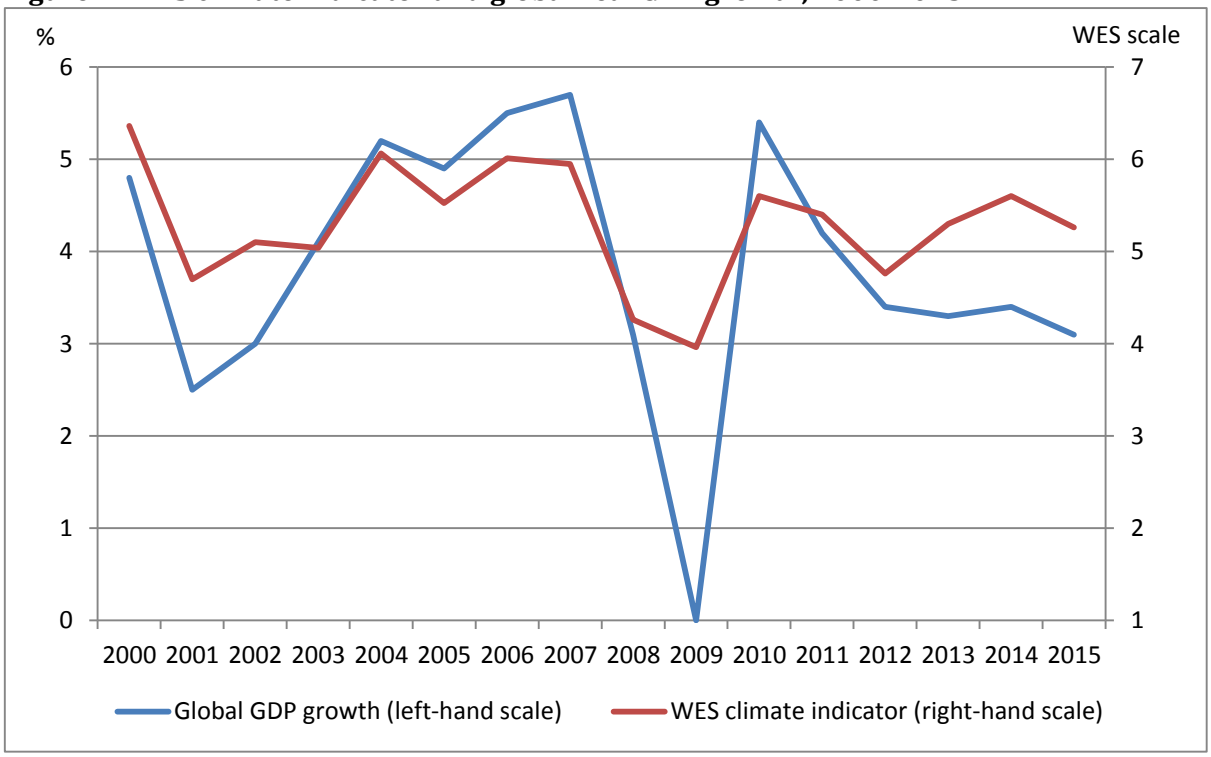
CIS countries: y = - 16.23 + 3.93 * Clim (R-square = 0.79).
Latin America: y = - 12.45 + 3.13 * Clim (R-square = 0.81).
Brazil: y = -8.28 + 1.98 * Clim (R-square = 0.73).
Euro Area: y = - 8.01 + 1.78 * Clim (R-square = 0.66).

These regressions show a relatively high correlation between the WES climate indicator and real GDP growth. But when interpreting these results one should bear in mind that the Ifo World Economic Survey is a business tendency survey and thus the reading of its indicators should mainly be considered as directions of economic tendencies and not as absolute growth rates. Nevertheless, the WES climate indicator and its sub-components offer a rapid up-to date assessment of the economic situation and reveal economic changes much earlier than conventional business statistics including National Accounts statistics, notably in countries where National Accounts are only available on an annual basis.

[7] The Commonwealth of Independent States is composed of 12 countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Out of this aggregate, WES covers Kazakhstan, Kyrgyz Republic, Russia, Ukraine and Uzbekistan.

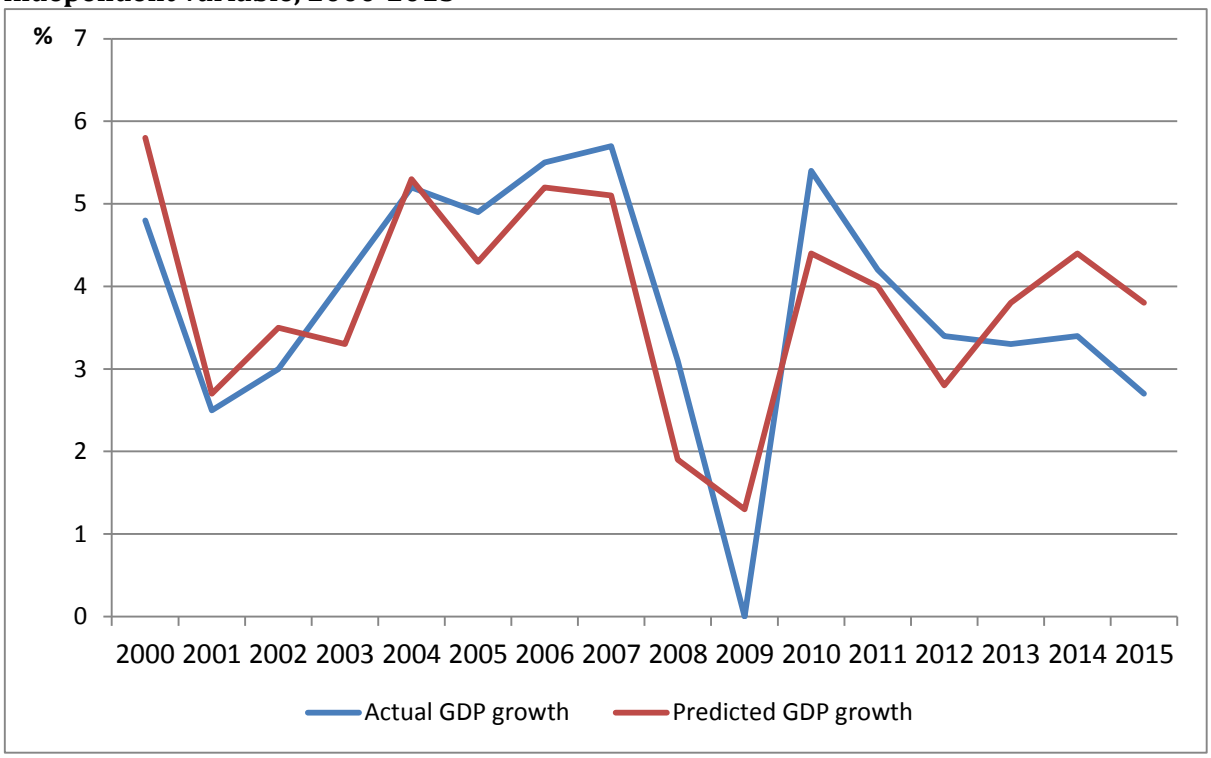
[8] This aggregate includes the following countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.

Figure 2: WES climate indicator and global real GDP growth, 2000-2015



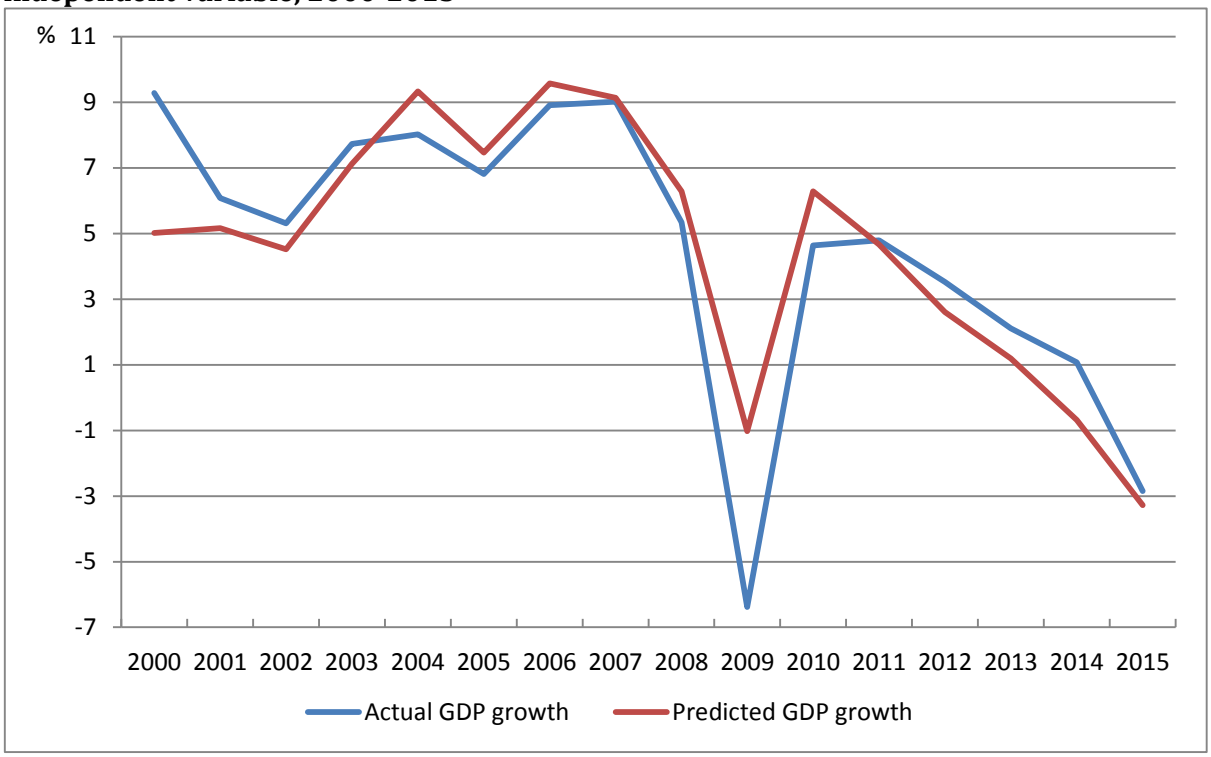
Sources: Ifo World Economic Survey (WES) 2000-2015 and IMF World Economic Outlook Database April 2016.

Figure 3: Estimate of global GDP growth by using the WES climate indicator as independent variable, 2000-2015



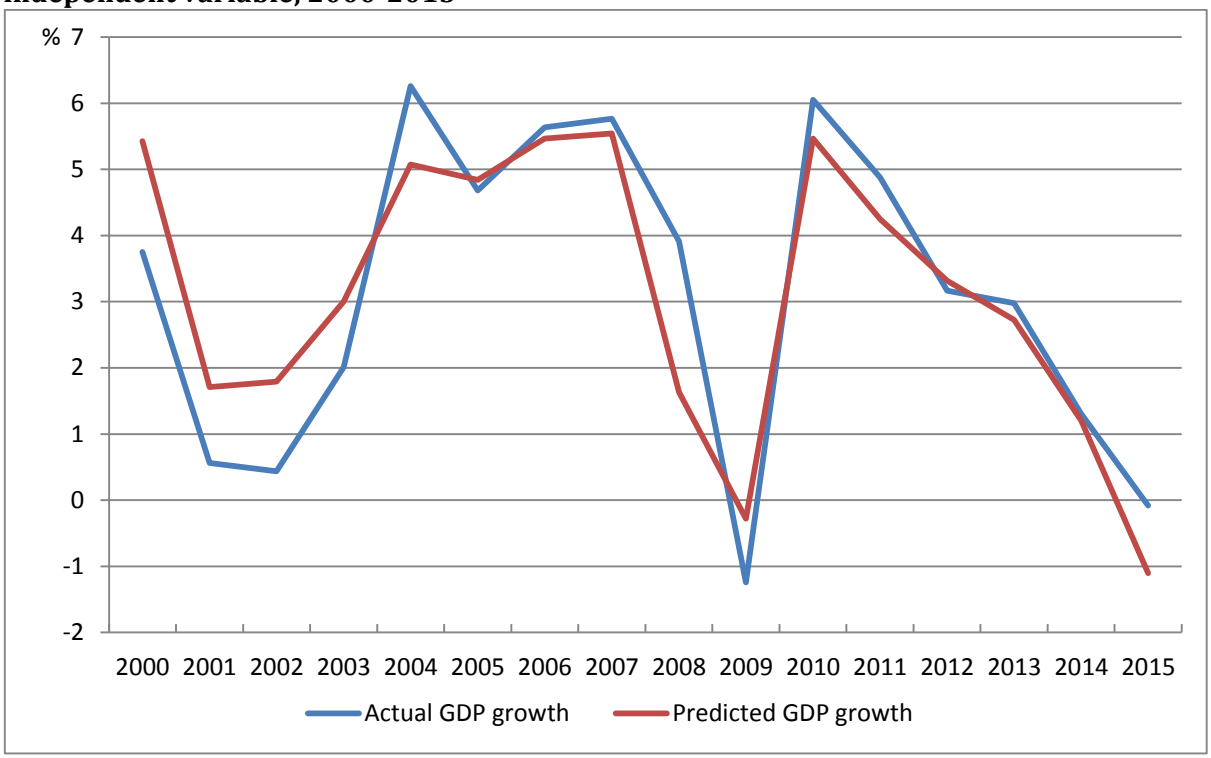
Sources: IMF World Economic Outlook Database April 2016 and own calculations.

Figure 4: Estimate of GDP growth in CIS countries by using the WES climate indicator as independent variable, 2000-2015



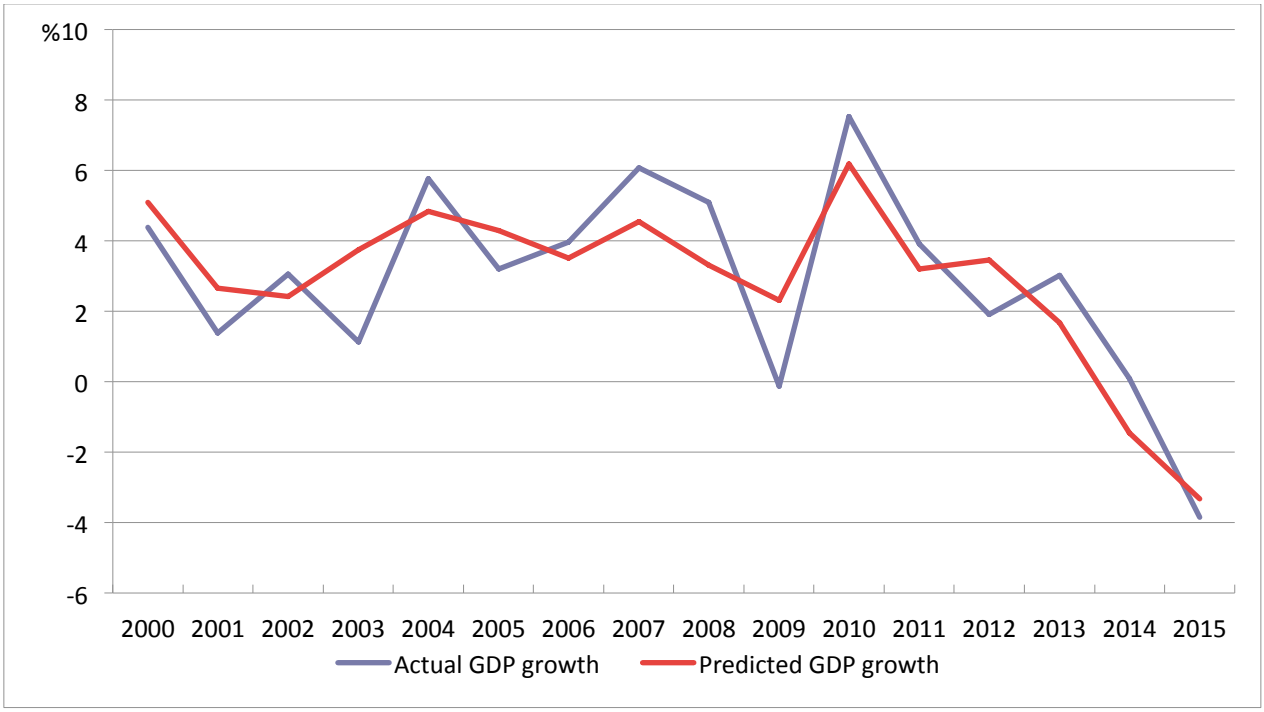
Sources: IMF World Economic Outlook Database April 2016 and own calculations.

Figure 5a: Estimate of GDP growth in Latin America by using the WES climate indicator as independent variable, 2000-2015



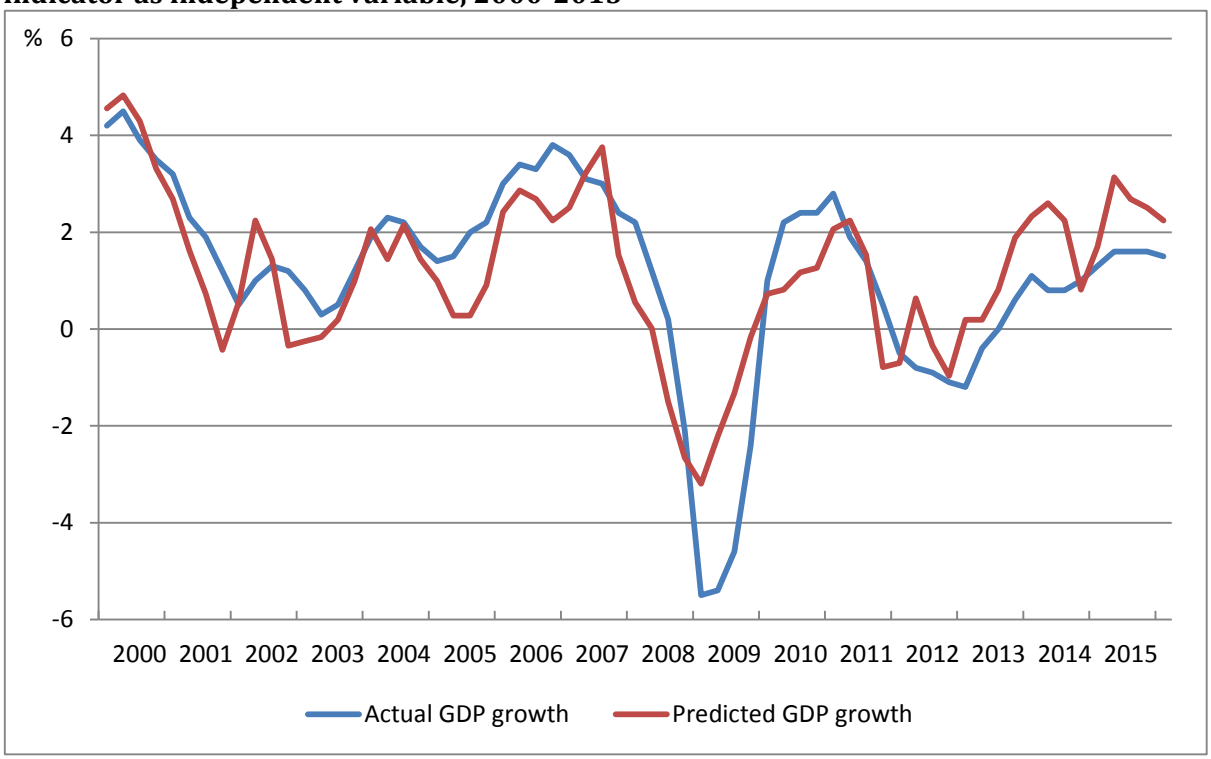
Sources: IMF World Economic Outlook Database April 2016 and own calculations.

Figure 5b: Estimate of GDP growth in Brazil by using the WES climate indicator as independent variable, 2000-2015



Sources: IMF World Economic Outlook Database April 2016 and own calculations.

Figure 6: Estimate of quarterly GDP growth in the Euro Area by using the WES climate indicator as independent variable, 2000-2015



Sources: Eurostat and own calculations.

The relationship between the two sub-components of the WES climate indicator, the judgement of the present economic situation and the expectations for the next six months, can also be used to construct a "Business cycle clock", which determines the cyclical position of the economy[9].

[9] On defining and measuring business cycles see also Achuthan and Banerji (2004).

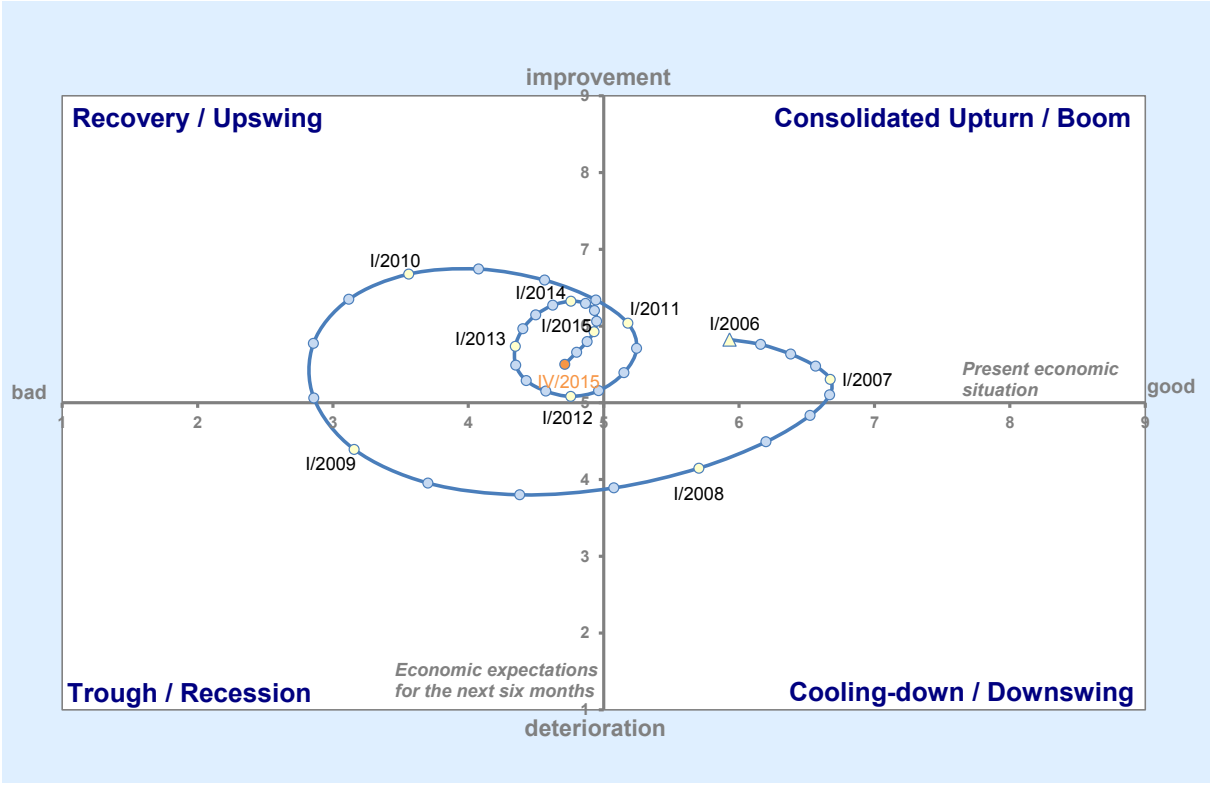
Both indicators have been slightly smoothed by using the Hodrick-Prescott time-series filter with a small Lambda (10). Figure 7 shows this clock for the world economy. It distinguishes four stages of the business cycle:

1. *Recovery/Upswing*: present economic situation still bad but expectations are positive
2. *Consolidated Upturn/Boom:* present economic situation positive and expectations are further improving
3. *Cooling Down/Downswing*: present economic situation still positive but expectations are negative
4. *Trough/Recession*: both the present economic situation and expectations are negative.

With these definitions one can describe the cyclical fluctuations of the world economy during the past ten years as following:

1 Until mid-2007 consolidated upturn/boom.
2 End-2007 to mid-2008 downswing.
3 End- 2008 to mid 2009 trough/recession
4 Mid-2009 to 2010 recovery
5 In 2011 a short period of consolidated upturn/boom
6 2012 to 2015 cyclical volatility within the upswing phase

Figure 7: Ifo Business Cycle Clock for the World Economy



Note: The quarterly values haven been smoothed by using the Hodrick-Prescott time-series filter.
Source: Ifo World Economic Survey (WES) 2006 Q1-2015 Q4 and own calculations.

3. The Ifo World Economic Survey (WES) for Africa

3.1 Development and coverage

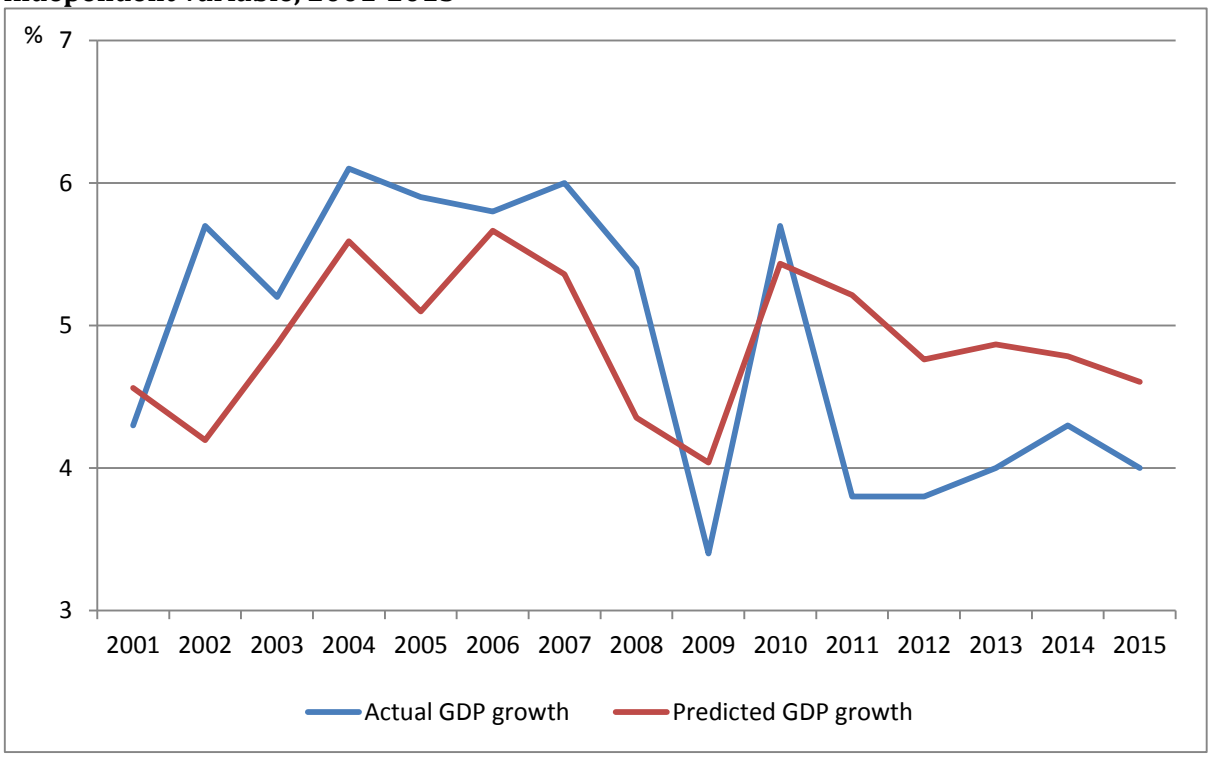
From 1990 until January 2010 on average only seven African countries were covered in the survey (Algeria, Egypt, Tunisia, Kenya, Nigeria, South Africa and Zimbabwe). The average number of questionnaires received from this region was 40. In 2010, with the help of the African Development Bank, the number of observed African countries was raised on average to 34 countries[10] and the number of participating experts to 144. However, as the continent consists of 54 countries, there is still much room to increase Africa's country coverage as well as the number of participants per country. As mentioned above, participation in the WES survey is strictly voluntary. Thus, the sole incentive for the experts' participation in the survey is purely a professional interest in the surveyed topic and the survey results, which they receive for all countries and regions. This fact seems to be sometimes a limiting factor in finding new respondents, as some potential participants expect a monetary compensation or other privileges for their effort. However, if people would just participate in order to get financial or other support, the quality and credibility could suffer and some may even cheat, as they would not be interested in reliable results.

3.2 Results for Africa

Figure 8 compares Africa's actual growth with predicted growth. The latter is again calculated by a simple regression with the climate indicator (Clim) as independent variable and GDP growth (y) as dependent variable. While between 2001 and 2010 the fluctuations of predicted and actual growth are quite similar, between 2011 and 2015 predicted growth remained higher than actual growth which illustrates that WES participants were more optimistic about Africa's economies than was reflected in actual GDP growth. The linear regression for Africa is y = 0.85 + 0.84 * Clim (R-square = 0.26). While the regression results are not too bad (considering that growth rates rather than levels are predicted), they are not as good as for global growth and other regions like CIS countries, Latin America or the euro area (as shown above). This is also reflected in the smaller R-square. However, as mentioned above, when interpreting these results one should bear in mind that this indicator should mainly be considered as showing the direction of economic tendencies and not actual growth rates. The survey results can thus only support but not replace a comprehensive macroeconomic forecast.

[10] These countries are: Algeria, Angola, Benin, Burundi, Cabo Verde, Comoros, Congo, Côte d'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, The Gambia, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritania, Mauritius, Morocco, Namibia, Niger, Nigeria, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe.

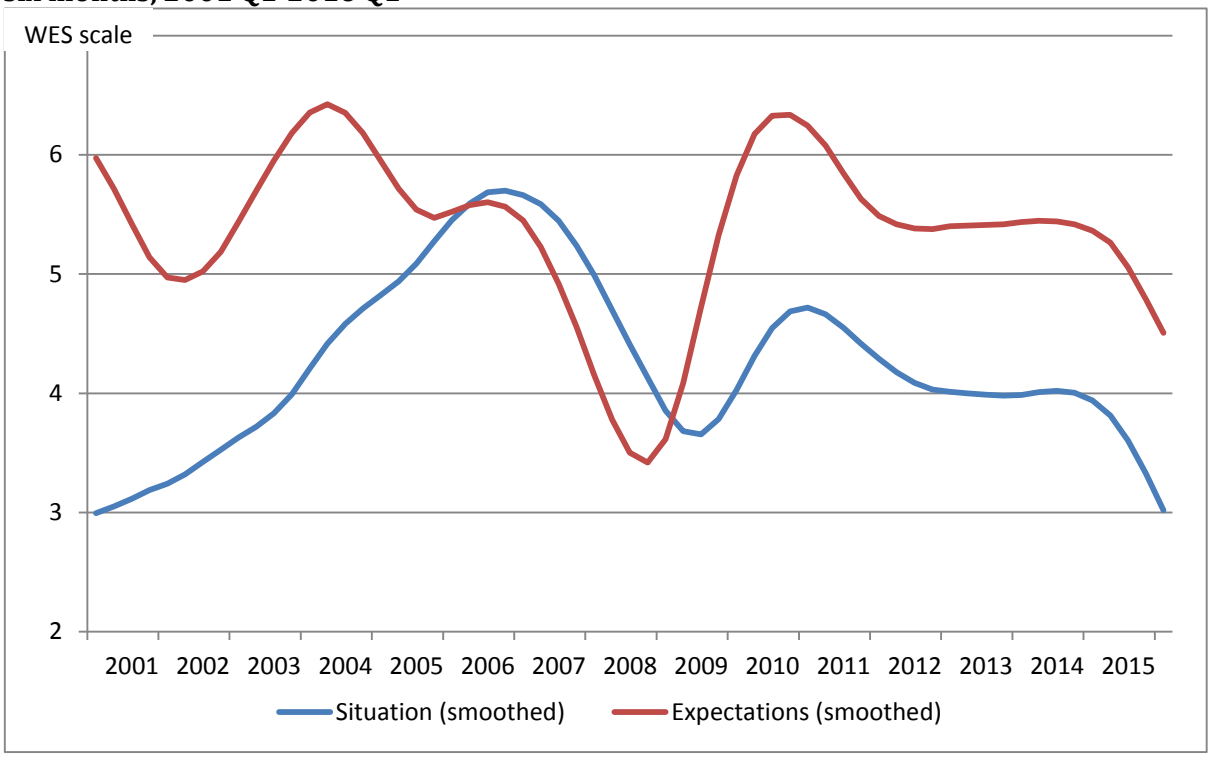
Figure 8: Estimate of Africa's GDP* growth by using the WES climate indicator for Africa as independent variable, 2001-2015



* Since 2011 Africa's growth excluding Libya.
Sources: AfDB Statistics Department and own calculations.

Figure 9 shows the development of the two sub-components of the climate indicator – the judgement of the present situation and expectations for the next six months – separately between 2001 and 2015. Both indicators have been slightly smoothed by using the Hodrick-Prescott time-series filter with a small Lambda (10). As one would expect, most of the period the expectations component leads the indicator for the present economic situation. Notably during the cyclical downturn in 2008 and again during the upturn after the 2009 recession this pattern prevails. However, from 2011 both indicators are rather parallel to each other. But both quarterly indicators show from the beginning of 2015, and before official statistics were available, that Africa's economy weakened.

Figure 9: Judgement of Africa's present economic situation and expectations for the next six months, 2001 Q1-2016 Q1



Note: The quarterly values haven been smoothed by using the Hodrick-Prescott time-series filter.
Source: Ifo World Economic Survey (WES) 2001 Q1-2016 Q1 and own calculations.

In a similar way as above for the world economy we have used the relationship between these two indicators to construct a "Business cycle clock", which determines the cyclical position of the African economy. Figure 10 illustrates the cyclical fluctuations of Africa's economy during the past ten years:

1 Until 2007 upturn and boom.
2 2007 downswing.
3 2008 to most of 2009 trough/recession.
4 End of 2009 to 2014 recovery.
5 During 2015 and beginning of 2016 weak recovery with risk of falling back into recession.

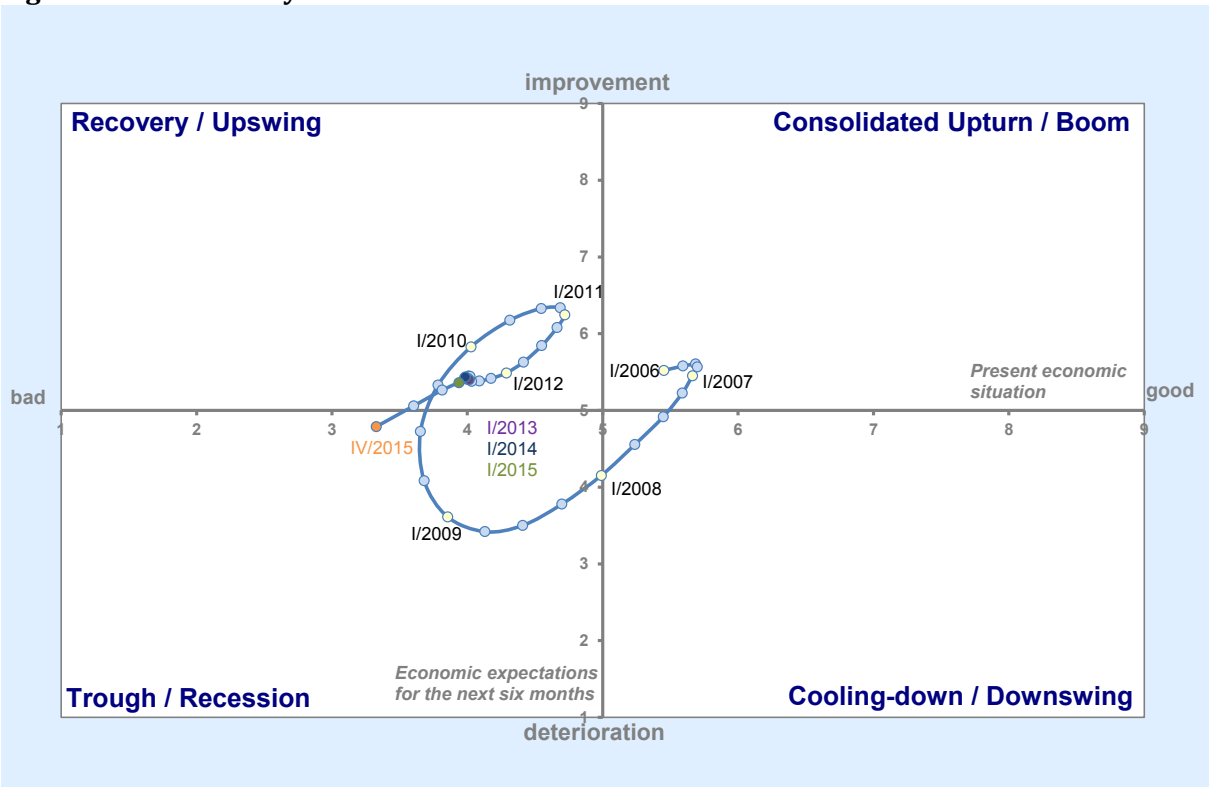
The concentration of the results in the years 2013 and 2014, as reflected by the data cloud relatively close to the horizontal line in the recovery quadrant (see dark coloured data points), shows that the African economy was stuck in a relatively weak and fragile recovery, which resulted in a further cyclical weakening during 2015. The cyclical weakening in 2015 is also reflected in Africa's actual growth, which was in 2015 lower than in the preceding years. According to the recent African Economic Outlook, GDP growth in Africa (excluding Libya) declined to 3.7 percent, down from 4.2 percent in 2014 and 4.3 percent in 2013.[11] Main reasons for lower growth were the relatively weak global demand and the sharp fall of commodity prices (AfDB et al., 2016).

A comparison of Africa's business cycle clock with the global business cycle clock (see above) shows a similar cyclical pattern although the cyclical fluctuations are more pronounced in the global economy than in Africa (The narrower circle in Figure 10 as compared with that in Figure

[11] We compare here Africa's GDP growth excluding Libya. The reason is that due to the difficult political and security situation Libya's GDP was in recent years highly volatile and has distorted Africa's underlying growth.

7 illustrates this). While African economies cannot escape the vagaries of the global economy they have in recent years shown a remarkable resilience to external shocks.

Figure 10: Business cycle clock for Africa



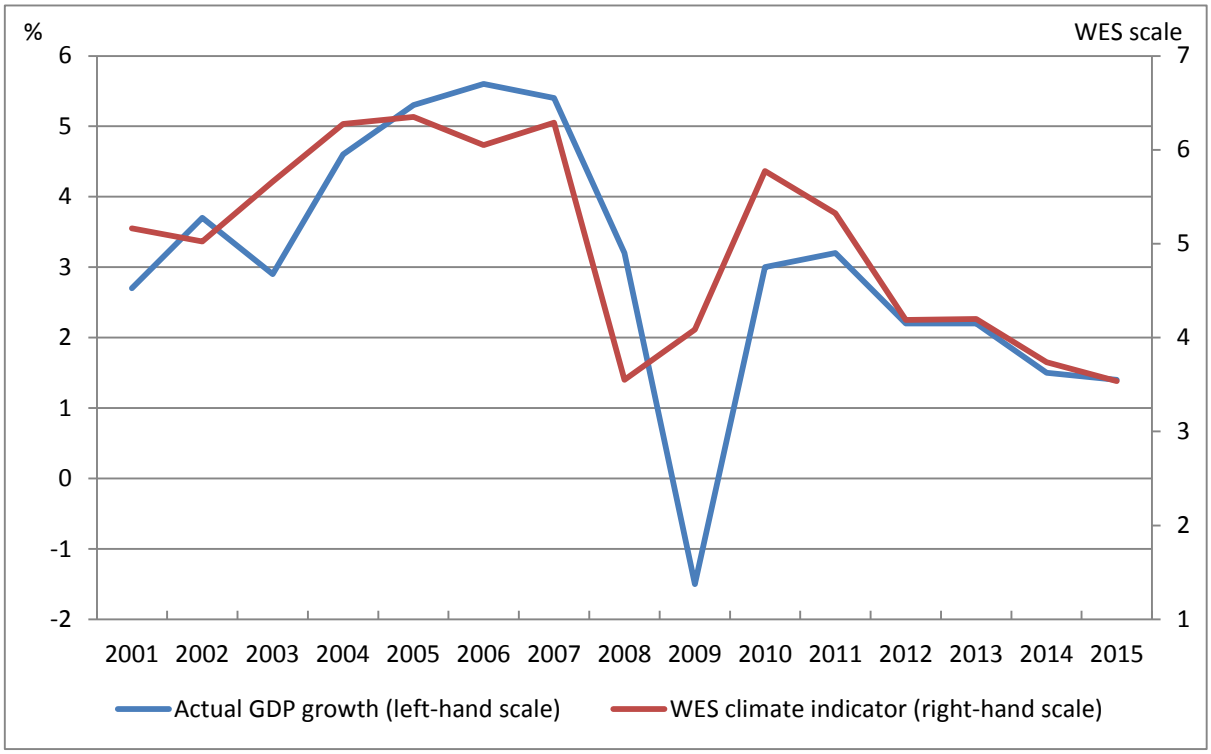
Note: The quarterly values haven been smoothed by using the Hodrick-Prescott time-series filter.
Source: Ifo World Economic Survey (WES) 2006 Q1-2015 Q4 and own calculations.

3.2.1 Results for South Africa

Figure 11 compares the development of the WES climate indicator with the development of economic growth for South Africa. During the cyclical downturn in 2008/2009 GDP growth reached a trough (with negative growth) in 2009, while the climate indicator was leading the development of GDP growth. It reached its trough already in 2008 and improved slightly in 2009. The reason was that during 2009 the expectations component of the climate indicator improved significantly while the judgement of the present situation still deteriorated and improved only in 2010. Hence, the view of South African WES participants that the 2009 recession would soon be overcome turned out to be realistic. The close pattern of actual and predicted growth in Figure 12 and the relatively high R-square in the regression of 0.57 between growth as dependent and climate indicator as independent variable (y = - 3.6 + 1.32 * Clim) also illustrate the overall relatively good fit between the WES climate indicator for South Africa and South Africa's growth.

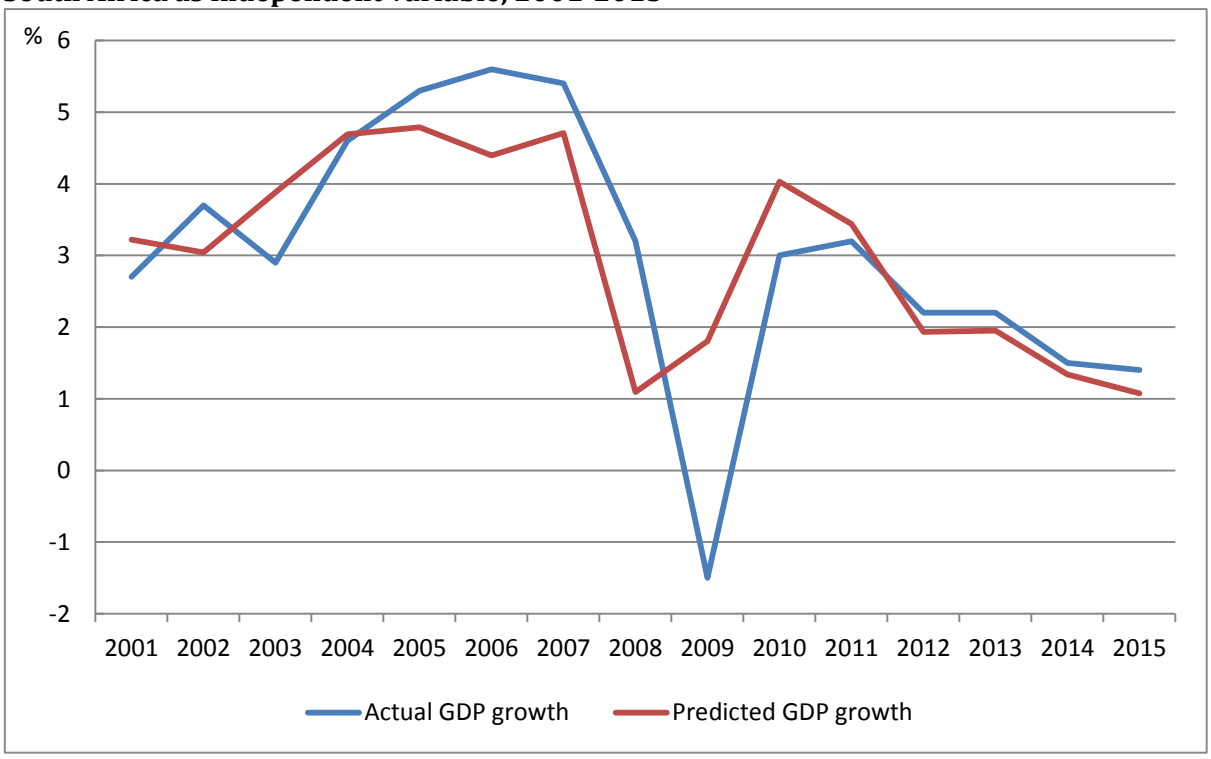
The performance of this survey in predicting economic growth is, however, uneven across the continent. As a result and as shown above, for Africa as a whole the relationship between actual and predicted growth is weaker and the R-square in the regression is lower than for South Africa. The reasons are probably that it is more difficult for WES participants in some countries to be well informed about economic developments. There may also be more unforeseen internal or external shocks. Furthermore, this survey covers so far 34 out of 54 African countries (although many of the missing countries are relatively small) and in some African countries only a very few number of experts participate so far in this survey.

Figure 11: WES climate indicator for South Africa and South Africa's real GDP growth, 2001-2015



Sources: Ifo World Economic Survey (WES) 2001-2015 and AfDB Statistics Department.

Figure 12: Estimate of South Africa's GDP growth by using the WES climate indicator for South Africa as independent variable, 2001-2015



Sources: AfDB Statistics Department and own calculations.

Conclusions

Macroeconomic analysis and forecasting must rely on National Accounts statistics and other economic statistics. But these are only available with a considerable time lag. In many countries, including Africa, they are also subject to – sometimes – significant revisions. When analysing and forecasting economic growth, economists around the world therefore rely, in addition to official statistics, on business (and consumer) surveys, which are more up-to-date and are not revised later. For many emerging and developing countries including in Africa there is a lack of such surveys. This gap could, at least partly, be filled by the World Economic Survey (WES), which is conducted by the German Ifo Institute for economic research. This quarterly survey includes currently 36 European Countries, 19 countries from North- and South America, 16 countries from Asia and Asia Pacific, 11 countries from the Middle East and CIS as well as 34 African countries and provides already important information about the current cyclical stage of those economies. It also provides up-to-date information about Africa's current economic situation in comparison with that of the global economy and of other regions. Extending this survey to more emerging and developing countries and, in particular, increasing the number of knowledgeable survey participants per country could further improve its usefulness for macroeconomic analysis and forecasting for emerging and developing regions including Africa.

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