United Nations
Department of Economic and Social Affairs

Report on the Project LINK Meeting

21-23 October 2015
New York

Prepared by:
Global Economic Monitoring Unit
Development Policy and Analysis Division

Table of Contents

Introduction and opening of the meeting

The 2015 Project LINK Meeting was held from October 21-23 2015 in New York, hosted by the United Nations and the University of Toronto. The agenda comprised the following main themes: the global and regional economic outlook; the outlook for commodity markets; global issues; and global modelling issues. This document summarizes the presentations and discussions. The LINK Global Economic Outlook prepared for this meeting by the Global Economic Monitoring Unit of DPAD-DESA, the LINK country reports prepared by country participants, and most of the documents presented at the meeting are available on the United Nations website (http://www.un.org/esa/policy/) and the Project LINK Research Centre website at the Institute for Policy Analysis at the University of Toronto (http://www.chass.utoronto.ca/link/).

Mr. Peter Pauly, University of Toronto, welcomed the participants and expressed his thanks to DESA and his colleagues at the University of Toronto for helping to arrange the meeting. Mr. Pauly reminded the participants that we live in 'interesting times' for economists, and that the Project LINK Meeting is unique in that it brings together policy makers, applied economists and academic economists in a meeting that covers not just the global outlook and forecast, but also important developments in economic modelling and global economic issues. **Mr. Hamid Rashid, UN-DESA,** welcomed the LINK participants on behalf of UN-DESA, expressing his anticipation of a productive and fruitful meeting.

Session 1a: World Economic Outlook

Hamid Rashid, UN-DESA

Mr. Rashid presented the LINK Global Economic Outlook for 2016-2017. According to LINK Global Economic Outlook for 2016-2017 global growth stumbled in 2015, reflecting a slowdown in all sources of growth and higher volatility in both developed and developing economies. The LINK forecast is for global growth of 2.3 per cent in 2015, with an increase to 3.0 per cent in 2016 and 3.2 per cent in 2017. The recovery forecast for 2016-17 is predicated on a stabilisation of commodity prices, easing deflationary pressures in developed economies, no further escalation of geopolitical risks, and gradual adjustment of policy rates and asset prices, which would allow volatility in financial markets to decline.

In regard to the distribution of global growth, the presentation pointed out that the pivot of global growth was shifting towards the developed economies – primarily led by the United States, but improvement in Europe was also evident. It highlighted the downturn in the Latin America and Caribbean region and a slowdown in the contribution of China to global growth. The slowdown in China has sparked a sharper-than-expected slowdown in world trade. As China is the number one export destination for many countries, they are highly exposed to a slowdown in China.

Mr. Rashid then highlighted some labour market difficulties, marked by higher levels of unemployment and weak wage growth. While inflation has been low, GDP growth has been more volatile. Global investment growth has been subdued, partly reflecting the persistent disconnect between finance and real sector activities. At the same time, the contribution of labour input to growth has declined sharply, and productivity growth has also slowed in most countries in the post-crisis period. He warned that the contribution of ICT investment to productivity growth may have peaked, and a new driver of productivity growth is needed going forward.

Mr. Rashid then introduced some risks to the baseline forecast, including a delay to the normalization of US interest rates and geopolitical risks. He then raised a series of policy questions and challenges. To what extent is the slowdown in productivity growth structural or cyclical? A structural slowdown poses longer-term challenges to restore growth and avoid secular stagnation. How long will commodity prices remain low and do they have further to fall? Risks include, for example, an unsustainable pension system in Brazil and other commodity-reliant economies. Is there a link between low inflation and volatility? He asked if it was a failure of QE that it rebuilt financial assets, but did not stimulate growth. He also warned that, while monetary policy had done most of the work over the last several years, fiscal policy would need to do more heavy-lifting going forward.

Thomas Helbling, IMF

Mr. Helbling started his presentation by highlighting some key messages for the outlook of the global economy, including a slight pick-up in growth in advanced economies and weaker prospects in emerging markets. Mr. Helbling also discussed several short-term risk factors, such as a further impact of lower commodity prices in emerging markets, global realignments that could spark a period of heightened financial volatility, and the rebalancing process in China and its cross-border implications. He then reviewed how growth forecasts for major economies have changed from last year. In the United States, some economic indicators, such as real personal consumption expenditure and total non-farm payrolls, suggested a strong rebound after the setback experienced in the first quarter of 2015. Meanwhile, there were some signs of an improving economic recovery in the euro area, illustrated in the performance of the manufacturing production and economic sentiment indexes. He emphasized that the recovery in Japan remained tentative. Mr. Helbling noted that recent trends in labour productivity growth casted a shadow on the outlook for potential output.

The presentation then moved to the analysis of the dissimilar economic situations and prospects for many emerging markets and how idiosyncratic shocks are affecting their growth performance. He highlighted the specific conditions that prevail in the Russian Federation and Brazil. The economic outlook for emerging economies was discussed by taking into account three main aspects: China’s continuous economic transformation; the recent decline in commodity prices; and the monetary policy normalization process in the United States. Moreover, the presentation provided growth forecasts for major emerging markets, including China, India, Brazil and the Russian Federation. Concerning China, the analysis focused on the complex transition to a new growth model driven by consumption and services. Mr. Helbling also commented on the challenges for the reform agenda as the authorities aim to maintain demand growth, while at the same time reducing economic vulnerabilities. In the case of Brazil, there was a noticeable plunge in confidence indicators and a sharp and continuous decline in investment demand. Mr. Helbling also described recent trends in commodity prices, putting emphasis on supply and demand fluctuations. He then highlighted the recent decline in capital inflows to emerging economies and the large swings in nominal and real exchange rates.

Mr. Helbling finished his presentation by analysing some policy recommendations for advanced and emerging economies. In advanced economies, there is a need to continue with the monetary accommodation where output gaps are negative and inflation is low, particularly in the euro area and Japan; in the United States, a smooth normalization process is essential. The need for using macro-prudential tools and a more prominent role of fiscal policy were also emphasized, particularly in the euro area. Concerning emerging economies, Mr. Helbling mentioned the need to be prepared for broad asset volatility and the need to carefully evaluate the trade-offs before easing monetary and fiscal conditions.

Franziska Ohnsorge, World Bank

Ms. Ohnsorge started her presentation by analysing the overall outlook for the global economy. Global growth remained weak and disappointing, leading to further downward revisions in growth forecasts. However, there were important differences among countries. Among high income countries, economic conditions were improving, particularly in the euro area. By contrast, in developing countries there was an overall deterioration of the economic outlook, leading to some further forecast downgrades. In 2015, average economic growth in developing countries was expected to be the lowest since the global financial crisis. Ms. Ohnsorge noted that China was slowing faster than expected and recessions in the Russian Federation and Brazil were intensifying, while economic activity was also weakening among key oil exporters in Sub-Saharan Africa, casting a significant shadow over prospects in their respective regions. Overall, for the fourth consecutive year more than half of emerging markets were expected to experience a lower growth than what was forecast at the beginning of the year.

Ms. Ohnsorge then underscored that the main problem for the global economy was a prolonged and synchronized slowdown. In particular, two aspects were highlighted. First, the growth slowdown was deep, with growth substantially below the pre-crisis average and lower than its long-term average. Second, the growth slowdown was broad-based, with numerous countries experiencing a visible slowdown. In particular, a large number of emerging economies have been experiencing three consecutive years of declining growth. Some prominent examples were Brazil, China, the Russian Federation and Indonesia. Afterwards, Ms. Ohnsorge discussed three main aspects at the global level: the deterioration of global trade; a weakening performance and lower growth contribution of investment demand; and the slowdown in productivity growth.

By the end of her presentation, Ms. Ohnsorge commented on some key downside risks threatening the global economy. For example, while deflation in the euro area and risks related to Greece have receded, geopolitical tensions were persisting. Other risks to the global economy were a faster-than-expected slowdown in China and a delayed monetary tightening by the United States Federal Reserve. Concerning the situation of emerging economies, Ms. Ohnsorge stressed the role of exchange rate adjustments in order to understand the dynamics of economic vulnerabilities. In particular, more vulnerable emerging market economies have experienced much larger depreciations in their domestic currencies. Ms. Ohnsorge analysed the relevance of implementing structural reforms, with benefits on the supply and demand side. Although the benefits of structural reforms take time to materialize, decisive moves to implement ambitious reform agendas signal improving growth prospects to investors. Some economies should also prioritize monetary and fiscal policies that reduce vulnerabilities and strengthen policy credibility in advance of the lift-off of US interest rates and the subsequent tightening cycle.

Comments and questions

After the opening presentations, there were several comments and questions from the audience. Among the comments, for instance, it was highlighted that a major issue affecting the global economy was the situation of large emerging economies. In particular, the recent fluctuations of exchange rates in these economies seemed to be a necessary but at the same time challenging adjustment, with effects still to be seen. Mr. David Turner of the OECD warned against drawing policy conclusions from the observed correlation between low inflation and high GDP growth volatility, which may simply reflect large output gaps weighing on inflation. Mr. Ray Chou noted that this year’s discussion was reminiscent of that in 2008, when there was a sharp change in the global outlook, and hinted that the outlook for 2016 may be worse than expected, given all of the negative factors highlighted in the presentations. Mr. Janvier Nkurunziza from UNCTAD then commented on two factors that should be taken into account concerning the commodity prices: the role of China and the over-supply in many markets. He asked whether any of the presenters had evaluated the weight of these two factors in the recent decline of commodity prices. Ms. Ohnsorge responded that both factors were important, but there was some evidence suggesting that over-supply was a more relevant factor in the recent period. On the same issue, Mr. Rashid argued that some years ago there was a significant overshooting of investment in minerals and even in the oil sector in the United States, whereas now there are deleveraging pressures. Looking ahead, Mr. Rashid noted that a slight recovery in investment demand was expected, provided that commodity prices stabilize and that investors had already internalized the recent price declines.

Session 1b: World Economic Outlook (cont.) Lead Discussants

Carl Weinberg, High Frequency Economics

Mr. Weinberg began his comments by reminding us that it was the anniversary of the 1987 stock market crash, and warned that an historic slowdown or drop in world GDP was possible. Commodity prices seem to be continuing on a downward trajectory rather than stabilising. World trade is collapsing in nominal terms, and the world is facing a price shock, which has wiped 2 per cent off of world income. Real global GDP growth is closely correlated with nominal world trade growth, and the observed slowdown in world trade points to a forthcoming slowdown in GDP growth. World industrial production has exhibited a prolonged period of not improving growth, perhaps indicating that it is already in recession. He also warned that we have seen a clear transfer of income from poor to rich consumers as a result of the commodity price declines, pointing to a decline in global welfare. Inflation is likely to rise visibly as the impact of the drop in commodity prices dissipates in early 2016, and bond yields, especially in Europe, are set to rise. Mr. Weinberg also pointed out that the foreign exchange reserves of China have recently declined at a rate of around $80 billion per month, but that it was not clear where those reserves had been directed to. The reserves should provide a significant stimulus to the recipient countries, but it is not clear that this is happening.

Dave Turner, OECD

Mr. Turner highlighted a few key issues related to the global economic outlook. First he noted the suspicious similarity of growth rate forecasts across the global institutions, which left little room for debate, despite the high levels of global uncertainty. He also questioned why the UN and the World Bank use market exchange rates rather than purchasing power parity exchange rates to construct regional aggregates, which makes comparisons with the IMF and OECD regional forecasts difficult. Mr. Turner highlighted forecasts for Japan and China, where the biggest differences between institutions were found. The OECD's forecast for Japan, with cumulative growth of just 2 per cent for 2015-2017, is significantly lower than the World Bank's forecast of about 4 per cent growth. Mr. Turner asked where the World Bank's forecast would put Japan's output gap at the end of 2017, suggesting that it would be large and positive under the World Bank's scenario. The projected speed of slowdown in China also differed across institutions, with the IMF slowdown to 6¼ per cent growth by 2016 being the sharpest, and the World Bank's slowdown to 6.9 per cent in 2017 being the slowest.

Mr. Turner asked how the forecasts for the rest of the world would change if the IMF projections proved correct, and warned that the statistics for China were conflicting, and perhaps the headline GDP figures masked a more significant slowdown that was already ongoing. Trade linkages understate international spillovers from a slowdown in China. FDI linkages are also important, as evidenced by the recent response of global financial markets. He also informed the participants that the sharp slowdown in non-OECD import volumes in the first three quarters of 2015 can largely be attributed to the Russian Federation and Brazil. Finally, Mr. Turner highlighted the weak growth and downward revisions to potential output per capita, especially in Brazil, the Russian Federation and the OECD countries, and warned that output gaps may be closed in most countries by 2017, pointing to a slow global economy going forward.

Beth Ann Bovino, Standard & Poor's

Ms. Bovino discussed key issues underlying the longer-term slowdown in the United States. Potential growth in the United States has slowed significantly since the financial crisis. Part of the slowdown can be attributed to the ageing population, although this is happening less rapidly in the US than in other major economies such as Germany and Japan. Ms. Bovino also highlighted the underutilisation of labour, as labour force participation has dropped significantly, while long-term unemployment has risen. She also noted that inequality in the US and other OECD countries had risen over the last 30 years. Income concentration matters, as it has an impact on how long growth lasts, with a higher concentration reducing the growth spurt. Higher income concentration also reduces social mobility and prospects for the next generation.

Education also matters for growth. One extra year of schooling would raise average US GDP growth by 0.5 percentage points per annum. Ms. Bovino warned that inequality and education were linked, as there were limited prospects for those born into poverty of moving into a higher income range without a college degree.

Kathy Bostjancic, Oxford Economics

Ms. Bostjancic focused her comments on the monetary policy decisions of the Fed and likely market reaction. She noted that three voting members of the FOMC had expressed reluctance to raise interest rates in 2015. Oxford Economics' view is that the Fed rate lift-off will start in December 2015, but stressed that it was also possible that the lift-off would be postponed until 2016. Market volatility, tighter financial conditions and deflationary goods prices have all contributed to postponing the initial lift-off, despite diminishing labour slack and well-anchored inflation expectations. The outlook for the US economy is decidedly lukewarm, so there is no need to rush to raise interest rates. The federal funds rate is not expected to reach 3 per cent until 2019 according to the Oxford Economics forecast, compared to 2018 as indicated in the Fed Dot Plot median rate forecasts. Ms. Bostjancic noted that equity markets are more closely linked to unit labour costs than the federal fund rate.

Moazam Mahmood, ILO

Mr. Mahmood made a presentation focussing on the labour market weaknesses since the financial crisis. He underscored that the current labour market problems stem from both macro cyclicality and structural reforms with unintended consequences. In particular, persistent deficits in aggregate demand and labour market reforms have played a key role in the downturn in employment. The presentation stressed that the backlog of unemployment and the employment gap persist since the financial crisis. Given this situation, the current weakness in economic growth poses another threat to the labour market prospects. Mr. Mahmood then reviewed the main unemployment and employment trends by major regions and countries. In advanced economies, there has been a significant reduction in unemployment rates in the United States. In the euro area, despite a recent slight improvement, the unemployment rate remains high, particularly in Greece. Importantly, Mr. Mahmood highlighted that long-term unemployment has remained relatively high, about one-quarter of total unemployment in the United States, one-third in OECD countries, one-half in Spain and Italy and over two-thirds in Greece. Mr. Mahmood then commented on the trends for the dependency ratio, which has increased in recent years in a number of economies.

He then focussed on the different cyclical and structural aspects that are affecting labour markets. For example, he emphasized the role of low spending across households and low investment among firms, and noted that the financial system is not supporting lending towards productive investments. In fact, banks still carry large piles of non-performing assets on their balance sheets, hampering credit expansion in the advanced economies. Bank lending in the euro area, for instance, remained weak in 2015. In combination with the austerity measures, this has led to a significant deficit in aggregate demand. Concerning reforms that have had unintended consequences, Mr. Mahmood noted that the attempt to reinvigorate growth through increased competitiveness and austerity measures has negatively affected labour markets in the euro area. Finally, he argued that in an overall context of very low bond yields fiscal policies can be more expansionary.

Session 2: Regional outlook: China and United States

China

Carl Weinberg, High Frequency Economics

Mr. Weinberg presented his views on the recent developments and trajectory of the Chinese economy. He held an overall positive view of the state of the Chinese economy and believed China could return to its long-term growth trend of the past 30 years, i.e. about 10 per cent growth per annum. The urbanization and the related modernization process were highlighted as key drivers of China's economic growth; both are expected to remain relevant in the foreseeable future, given that the country still has ample room for further urbanization. He sees demographics as another driver of China's economic growth, which will continue to play a positive role – albeit to a lesser extent than in the past.

Mr. Weinberg emphasized that at 7 per cent annual growth, the Chinese economy is not a headwind to global growth. In fact, China is contributing more than any other country to global growth. According to Mr. Weinberg, China is currently near the bottom of its long-term GDP cycle that fluctuates around 10 per cent. The slowdown in China is therefore more cyclical than structural. Mr. Weinberg predicted that China will eventually resume growth at the potential rate. After several years of business cycle downturn, the economy has moved closer to eliminating the excesses related to the property market and production capacities. He acknowledged that the recent economic developments in China have impacted the iron and coal sector, affecting countries that have significant commodity exports to China, such as Australia. He also pointed out that net export growth now contributes little to China's growth.

Mr. Weinberg stated that in his view China had yet to cross the Lewis Turning Point – that is, the point where migration from rural to urban areas no longer ensures an unlimited supply of cheap labor to the secondary sector. He argued that data indicates that there is no acceleration in the upward trend of wages. The non-food consumer price index has been stable and migration from the rural areas to the cities has yet to slow down, which all suggest that China is not on the verge of the Lewis Turning Point.

Discussion

Mr. Jackie Hoi-Wai Cheng, UN-DESA noted that China's economy is estimated to grow by 6.8 per cent in 2015. Growth was forecasted to be around 6.4 per cent in 2016, underpinned by robust private consumption, which has been contributing to growth almost as much as investment. In contrast to Mr. Weinberg's view, Mr. Cheng expects that excess inventory in the housing market and overcapacity in the traditional industries will continue to put downward pressure on growth in the short run. Private debt in China has seen a rapid increase after the Global Financial Crisis and is now among the highest in the world at over 130 per cent of GDP. Concerns regarding the private debt are further intensified by the fact that China's bankruptcy law is still evolving, and the process of discharging bad debts – especially that of the non-state sector – could be made more efficient moving forward. Local government debt is a lesser concern, as it is at a relatively low level and the central government has introduced measures to address the issue, including programmes to swap local government debt for bonds that will lower borrowing costs for local governments. The central government also has ample capacity to support local governments' finances.

Regarding the Lewis Turning Point, Mr. Cheng pointed out that China's working-age population has been shrinking since 2012. Wage growth in cities has been relatively stable at around 10-15 per cent over the past few years. But if one looks at the relative wages of rural migrants and urban formal employees, the gap has been closing since 2007. Regarding China's potential growth, Mr. Cheng noted that an Asian Development Bank (ADB) working paper from 2014 estimated China's potential growth rate at around 10 per cent for the years 2016-2020. The paper also looks into a very plausible scenario in which China transforms toward a service economy. Since improvements in service sector productivity are harder to achieve than improvements in manufacturing sector productivity, the ADB study estimates potential growth to drop by over 2.5 percentage point in the service economy scenario.

Comments and questions

Prof. Tongsan Wang, Chinese Academy of Social Sciences, noted that there has been downward pressure on China's economic growth, but the growth rate should not be lower than 6 per cent in the coming 2-3 years. Another participant noted that the trajectory of

China's potential growth is a function of the population trend, economic reforms, and China's engagement in the globalization process. Other participants discussed their views on China's banking sector, real estate development, intellectual property issues, social stability, inequality, and demographics.

United States

Hung-Yi Li, UN-DESA

Mr Li presented the United States economic outlook for 2016-2017. Gross domestic product is projected to grow at 2.6 per cent in 2016 and 2.9 per cent in 2017. The forecast was made based on the assumption that the Federal Fund Rate would be lifted in December 2015, followed by 50 basis-point increases in 2016 and 100 basis-point increases in 2017. Fiscal policy is assumed to remain restrictive in both 2016 and 2017 at the federal level, whereas spending by the state and local governments will expand modestly by 1 per cent in real terms. The US dollar is assumed to remain strong in 2016-2017.

Mr. Li pointed out that the government contribution to growth has often been negative since the global financial crisis. Labor income accounts for the main part of US national income, but labor income growth has slowed down since the financial crisis. Employment is still growing, but may slow down moving forward. He noted that there is a missing link between wage growth and the unemployment rate. Since the beginning of 2015, data show that wage growth and improvement in the unemployment rate have not been moving in the same direction. The share of fixed investment in GDP (excluding government investment) is approaching the pre-crisis level, with more spending on intangible assets, such as intellectual property. Housing sector recovery – in the form of rising housing starts – has been sustained in recent years as the growth of multifamily-unit housing starts accelerated after the financial crisis. However, the house ownership ratio declined. The growth of housing prices has also slowed down in the past two years, i.e. 2014 and 2015. Regarding the trade sector, real trade deficit has widened after the US dollar embarked on an appreciation trend. The appreciation has also led to a sharp drop of export orders. On the other hand, the nominal net trade deficit remained in decline due to lower import prices.

Mr. Li identified disputes over Federal Government spending as one of the biggest risks to US growth in the forecast period, but he believes that the debt ceiling will be increased at the critical junctures in the future. He also noted that there is a divergence between market forecasts for the US growth rate and the forecast made by international organizations – this could potentially pose a risk. Regarding the possibility of the US Federal Reserve raising interest rate faster than expected, Mr. Li noted that quick interest rate increases would not be possible given the existing adjustment mechanism for the Fed Fund Rate. The Federal Reserve's moves on interest rates could, at least partially, be offset by commercial banks.

Session 3: World Commodity Markets

Agricultural commodities

William H. Meyers, University of Missouri

Mr. Meyers described the overall crop prices trends, comparing previous projections with more recent available data. He focused on five main aspects: the big picture on prices; the grain markets' near-term outlook; the FAPRI outlook as of October 2015; the uncertainties in the outlook; and a discussion on feeding the world in 2050. He noted that the big picture is straightforward. The agricultural commodity price index has dropped to the lowest level since the global financial crisis. The big boom in agricultural prices is clearly over and prices are not expected to rebound in the short term due to excessive investment and supply. In addition, low energy prices will help to maintain food prices low. The FAPRI-MU baseline update, issued in September 2015, takes into consideration the global real GDP growth outlook, exchange rates, crude oil prices and China's meat consumption. On the demand side, Mr. Meyers showed how China's situation is still an important determinant; the rise in households' income and urbanization contribute to rising demand for food. Mr Meyers also showed the supply and use of cotton in China, corn in the US, the EU use of biofuels, as well as the EU grain market situation.

Based on all these aspects, the projections made by FAPRI show a declining trend in cereal prices (maize, wheat, soybeans, Thai rice) until 2024. Nevertheless, there are a number of uncertainties for this outlook. Global grain and oilseed supplies remain large, depressing prices. At the same time, with a mature biofuel sector and questions about China, what will be the future engine of crop demand growth? Under normal conditions, agricultural prices are expected to remain well below recent peak levels. But weather and other factors can always cause a positive (or negative) surprise in any given year. There are also a number of uncertainties in the EU market. Access to the Russian market is likely to be restricted for the near future, adding downward price pressure. The weak euro will help EU exports, especially in the face of a large wheat crop, but demand from biofuels for agricultural products is likely to stagnate.

Crude oil market

Robert K. Kaufmann, Boston University

Mr. Kaufman made a presentation on the oil price forecast. Compared to last year's price forecast, the oil Brent price is now much lower, about half of the price from a year ago. In his perspective, the main reason for lower oil prices is abundant supply. Output from non-OPEC countries, including the US, has gone up. In addition, OPEC members, led by Saudi Arabia, are determined to defend market shares rather than prices. Increases in natural gas production worldwide is another major factor contributing to lower oil prices. He also expected slow growth in consumption demand, as a result of relatively moderate global economic growth and increasing efficiency.

Mr. Kaufman also showed how all private financial institutions, but also research institutes, failed in their outlook for the 2015 oil price. Out of 12 institutions, Mr. Kaufman had presented the lowest oil price forecast for 2015, but even that one was well above the current average. In 2016, he believes that the Brent oil price will decline again, but it is difficult to forecast by how much. In his perspective, the price for next year will mainly depend on how OPEC members will react: will they finally cut production to support prices or will they continue to defend market shares? According to Mr. Kaufman, OPEC members would prefer to defend their market shares, knowing that many non-OPEC countries will face difficulties if prices decline further. In fact, drilling activity in the US has plunged since March 2015 and will continue to decline. As a result, OPEC will not act as marginal supplier, instead non-OPEC will be forced into the role of marginal supplier, with boom and bust cycles.

Comments and questions

During the general discussion, questions were raised about the strategy of OPEC members. Considering the emergence of new large oil suppliers, including the US and Canada, can OPEC members continue to influence major oil market conditions and prices? Mr. Kaufman recalled that OPEC producers have much lower breakeven oil prices and can afford to let prices decline further, which is not the case for many other producers. Another question was raised about forecast discrepancies between institutions. One participant noted that in the long run oil prices should increase significantly. Another participant referred to alternative strategies that some OPEC member countries might implement to change oil price trajectories. A request was made to the organizers to include in future LINK meetings at least one session on minerals and metals.

Session 4: Regional outlook (cont.): Japan and Europe

Japan

Yoshihisa Inada, Konan University and Centre for Quantitative Economic Analysis (Japan)

Mr. Inada presented his analysis and forecast of the business conditions in Japan. He reported that official estimates showed a contraction of GDP by 1.6 per cent in the second quarter of 2015 when compared to the previous quarter. As the Japanese economy's growth potential weakens, it is becoming more susceptible to external problems. Looking at contributing factors to the real GDP growth rate, domestic demand fell by 0.5 percentage points, while net exports fell by 1.1 percentage points for the second consecutive quarter. Among the components of domestic demand, private consumption growth declined for the first time in four quarters, bringing down the GDP growth rate significantly (contributing a 1.8 percentage-point drop in growth). Private consumption fell to a level that just barely exceeded its level immediately after the consumption tax increase. Private consumption will likely be stagnant for the time being.

Mr. Inada's model predicted that real GDP growth would be 0.6 per cent in 2015, 1.6 per cent in 2016, and 1 per cent in 2017. Both the 2015 and 2016 forecasts were revised downward by 0.3 percentage points from previous forecasts. The downward revision of the 2015 forecast was influenced by falls in private consumption and net export figures. Mr. Inada expects that, along with income growth, private consumption will recover gradually, and business investment in equipment will increase. He noted that the recovery in employee income continued to be delayed, and the slowdown in the world economy, particularly of the Chinese and other developing economies, was a cause for real concern. In 2016, Japan's economic recovery should be driven by domestic demand, which would lead to a higher growth rate than in 2015. However, the growth rate would come down again in 2017, based on the prediction that the government will increase the consumption tax by a further 2 percentage points in April 2017.

In a simulation exercise, Mr. Inada explored the consequences on the Japanese economy that would result from a halving of the global export growth rate in the third quarter of 2015. As a result, Japan's real exports would fall by 1.5 - 1.6 per cent, and its real GDP by 0.3 per cent. In order to prevent a recession (and to raise the potential growth ceiling), he noted that it is important for Japan to speed up the planning and implementation of growth strategies.

Comments and questions

A participant raised a question about Japan's immigration policy. Mr. Inada said that Japan does not have an immigration law, which creates big uncertainties regarding immigration. He mentioned tourism and foreign students studying in Japan as short-term immigration that could help to support the Japanese economy. There was also a question on Japan's government debt levels. Mr. Inada believed that the Japanese fiscal system should move towards the US model, in the sense that taxation in Japan should increase from its current levels and some social benefits should be reduced.

Byron Gangnes, University of Hawai'i

Mr. Gangnes presented his joint work with Mr. Andrew Mason on evaluating Japan's current account from a macroeconomic perspective. Their work looks at the recent adjustment of the Japanese current account and the prospects ahead, in particular concerning the role of key factors that influence the current account trajectory. Data shows that Japan's current account has been in surplus for three decades. However, the surplus has recently narrowed, which could be contributed to changes in macro fundamentals that have supported high savings, as well as to some special circumstances.

Mr. Gangnes noted that personal savings have trended lower, with lifecycle savings supporting high rates in previous decades. The government budget has deteriorated, moving from surpluses in the 1980s to deficits of 9-10 per cent of GDP in recent years. Investment has also fallen, against the backdrop of lower productivity growth, a stagnant labor force, and slowing overall economic growth. Looking forward, the ageing population in Japan will reduce savings, but there are several potentially mitigating factors, including: recovery of fertility, postponement of retirement, rising female work participation, and economic agents' behavioural changes due to government transfer cuts. A shrinking labor force would typically reduce investment, but it might also create incentives for labor-saving investments. The government budget will have to improve; otherwise debt will increase to 300 per cent of GDP by 2040. The improvement of the government budget will however be very difficult, considering the growing fiscal burden resulting from a rapidly aging population.

Mr. Gangnes also looked at the global context. He pointed out that persistent current account surpluses or deficits are probably not realistic and overall current accounts must balance globally. Some researchers suggest that capital flows from aging countries to younger ones; however, on the other hand, some studies show that there are moves to current deficits in aging countries as capital flows in to meet aging needs. Based on the existing literature, there is no firm consensus on how an aging population affects current account trends. Projecting lifecycle saving and assuming no productivity growth, it can be shown that saving rates will not fall uniformly across regions. Europe and Asia will see the fastest and greatest declines, whereas the saving rate will fall only moderately in the US. With younger populations, Latin America and Africa will see their saving rates fall later than the other regions. According to projections, by 2050 none of the world lifecycle saving will come from Europe. Asia's contribution to world's lifecycle saving will be much smaller than before, whereas the US and other regions will provide the most savings.

Euro Area

Pavlos Karadeloglou, European Central Bank

Mr. Karadeloglou presented the macroeconomic outlook for the euro area. He first identified the three positive shocks that support the activities in the euro area: (1) lower oil prices, which led to lower inflation/higher real disposable income; (2) improvement in price competitiveness, resulting from the depreciation of the euro's real effective exchange rate; (3) accommodative monetary policy, with the ECB deposit rate entering negative territory.

Mr. Karadeloglou discussed the developments after the ECB's decisions to adopt multiple monetary policy initiatives in June and September 2014. He noted that the ECB had cut the main policy rates to historically low levels and launched the targeted Longer-Term Refinancing Operations to support bank lending. The ECB also initiated programmes to purchase private sector assets, in particularly asset-backed securities and covered bonds, starting from October 2014. The ECB then in January 2015 introduced the expanded asset purchase programme (EAPP), which encompasses the existing purchase programmes for the aforementioned securities, but also purchases of euro-denominated investment-grade securities issued by euro area governments, agencies and European institutions in the secondary market. Bond yields in the euro area reached historical low levels after the announcement of EAPP, with the highest-rated countries registering the largest declines. At the same time, the decline in market-based measures of inflation expectations observed previously in the euro area halted after the EAPP announcement and these measures recovered from their low levels in mid-January 2015. There has been a continued strong performance in equity markets across Europe, and the euro area equity market has significantly outperformed the US equity market in 2015. Lending to euro zone households and firms also rose for the first time in three years in March 2015 and has since then continued its upward trend.

Mr. Karadeloglou considered the pick-up in euro area activity as partly triggered by exogenous factors (e.g. oil prices, weaker euro, accommodative monetary policy) rather than endogeneous factors that could underpin a self-sustained recovery. He noted that low investment, high unemployment, low potential growth, and negative external risks still very much persist in euro area. In the long run, reduction of the high unemployment depends on higher potential growth. Structural reforms would therefore need to be introduced to increase total factor productivity.

Comments and questions

In response to a question on how the "quantitative-easing" money would reach the public in the euro area, Mr. Karadeloglou noted that there are several factors that determine whether increased money supply would reach the economy. The injected liquidity is aimed to be channelled into productive investment and not the housing sector. He mentioned that multiple countries were experiencing lack of bank lending, but this could be due to lack of demand. When asked about the impact of migrant influx on the fiscal side of the euro area and whether it would pose significant risks in the future, Mr. Karadeloglou said that in the case of Germany, there could be negative impact in the short run and some positive impacts in the long run.

Christian Dreger, DIW Berlin

Mr. Dreger presented his joint work with Mr. Jürgen Wolter on unconventional monetary policy and money demand. He began his presentation by noting that monetary aggregates are imporant for price stability. He argued that unconventional policies increased inflation risks and that the assessment of the money stock could give early signals for speculative bubbles. He also highlighted that the money variables are not embedded in many Dynamic Stochastic General Equilibirum (DSGE) models.

His work shows that the analysis of money balances could provide useful information on the transmission of monetary policy, especially during times when interest rates are close to the zero lower bound. However, money can only be a useful policy instrument when there is a robust link between the nominal and real side of the economy. The money demand function links the monetary developments to its fundamental determinants, such as the overall price level, real income, wealth, and the opportunity costs of holding money. Therefore, by comparing the actual money stock and its long-run equilibrium according to the money demand, one can estimate the excess liquidity, which can be further used to forecast inflation.

In response to studies arguing that money demand has become unstable – probably due to financial innovation – long before the Global Financial Crisis, Mr. Dreger acknowledged that the Lucas Critique could be relevant from a theoretical perspective. That is, parameters of macroeconomic models could change as they depend on economic agents' expectation of the policy process and such expectation could change as policies change. However, from an empirical point of view, he pointed out that stability could be partially achieved after some adjustments to the specification of the money demand function. In fact, his work provides some counter-evidence in the sense of a stable long-run money demand function, both for the US and the euro area. The functions are robust even in the recent period when quantitative easing policies were applied by the US Federal Reserve and the European Central Bank. He concluded that at least in the case of the US and the euro area, the evolution of monetary aggregates is in line with relatively standard models of money demand and the Lucas Critique is not relevant for money demand.

Session 5: Global Issues – Potential Output and the 'New Normal'

David Turner, OECD

Mr. Turner presented an analysis of the weakness in trend growth and policy suggestions to tackle it. He first explained that potential GDP can be split into several components. More particularly, it is defined as the sum of trend productivity and the potential employment rate, where the former can be explained by total factor productivity plus capital per worker, and the latter consists of the sum of the NAIRU, labour force participation and demographics. Accordingly, it might be interesting to look at the decomposition of the growth rate of potential output per capita in order to determine the driving forces behind recently observed patterns.

Having done so for OECD countries, he detected that while the labour force participation, i.e. the potential employment rate, increased over the last ten years, total factor productivity declined even before the crisis. Even more strikingly, he pointed out that the largest part of the slowdown of potential per capita growth is due to a decreasing contribution from capital per worker since the crisis. Also, the contribution from labour utilisation has declined, but with significant heterogeneity across countries. Moreover, on the investment side, Mr. Turner showed that even though the median OECD scrapping rate for productive capital has been rising over the past years, OECD investments have still decreased. According to the speaker, this can be mostly explained by weak expected demand growth and a decline in public investment. Possible reasons for the observed weak total factor productivity growth are a breakdown in the diffusion from the frontier and a slowdown in structural reforms.

Turning to a recent OECD study on the estimation of policy effects on productivity, he argued that improving the rule of law as well as product market regulations have played an important role in boosting living standards and productivity – even more among non-OECD countries than OECD countries. Also, since ageing will increasingly drag on living standards, labour market policies can provide an important offsetting effect. Further policies to tackle weak productivity comprise raising public investment, improving demand by expanding fiscal policy and reducing uncertainty in order to boost investment and avoid hysteresis. Increasing structural reforms, including the improvement of diffusion, as well as enforcing the rule of law and regulations to enhance competition might be also helpful. However, Mr. Turner noted that such measures often just lead to price adjustments.

Zsolt Darvas, Corvinus University of Hungary

Mr. Darvas presented a paper entitled “Filling the gap: open economy considerations for more reliable potential output estimates”. He opened his presentation by stating that potential output is an important unobserved variable for macroeconomic modelling, policy analysis and policy making. Potential output has been incorporated as an influence factor into various macro models as well as monetary and fiscal policies, and has been studied by using various empirical methods. However, according to the speaker, the existing methodologies suffer from major handicaps – key conceptual handicaps like the disregarding of open economy considerations and the use of smoothing algorithms as well as empirical weaknesses such as implausible estimates of potential output developments and large revisions. Therefore, the objective of his study was to estimate a model which incorporates open economy considerations for 45 countries using real-time data between 2004 and 2015.

Standard concepts comprise non-theoretical models (i.e. smooth supply but fluctuating demand) and standard structural models (relying on the assumption that excess demand leads through employment pressure to inflation and, thus, demand correction). However, the speaker underscored that the effect of excess demand was not symmetric across tradable and non-tradable sectors and, therefore, the Phillips-curve or NAIRU are not sufficient in a model of potential output. As an alternative approach, he offered a new concept of "sustainable output", which takes the different responses to excess demand across non-tradable and tradable sectors into account. Since the separation of tradable and non-tradable sectors is not intended, he built a model that relies on total output, letting the data determine the relative importance of the Phillips curve and current account balance. In addition, he noted that open economy considerations imply that, in the short-run, the foreign output-gap as well as the real exchange rate disequilibrium matter for both inflation and the current account balance. Therefore, estimates of both variables were included in the respective behavioural equations of the Phillips curve and the current account gap within the unobserved components model. For estimates of the current account gap as well as for the foreign output gap he drew on the Hodrick-Prescott filter; the current account gap was measured as the deviation from an estimated medium-term equilibrium current account balance, based on the model of Lane and Milesi-Ferretti (2012).

In order to draw inference on latent variables and parameters, Mr. Darvas applied a Kalman filter (ML/QML estimation). The empirical results revealed that the current account equation is more important in determining the sustainable level of output than the Phillips curve. Moreover, comparing his estimates of sustainable output to those of the IMF/EC/OECD/HP-filter shows significant differences for several countries. In general, his estimates performed better with respect to the identification of the sign of the output gap in real time, and revisions during the crisis years were much smaller.

Alexander Apokin, Center for Macroeconomic Analysis and Short-Term Forecasting, Russia

Mr. Apokin presented the paper “Structural breaks in potential GDP of four major economies: just impaired credit or the ‘new normal’?” He pointed out that there was no consensus in the literature on whether the currently observed slowdown in world GDP growth has permanent implications or whether it is just a temporary phenomenon. He addressed this issue by testing for a trend shift in potential output. Moreover, he also included private credit dynamics into the model in order to analyse the role of impaired transmission channels.

The presented methodology comprises the estimation of potential GDP and the output gap for the US, the euro area, Japan and China using an unobservable components model, i.e. he applied a Hodrick-Prescott filter as well as uni- and multivariate Kalman filters sample wise. The additional variables which he used for the multivariate filters are Okun’s law, the Phillips curve and finance-neutral gaps in order to account for unemployment, inflation and private credit dynamics. The presented results reveal a shift in the output gap in the post-crisis period compared to the pre-crisis period. In a next step, he then applied two structural break tests to the estimates - the Bai-Perron test and the Chen-Liu test - assuming that a structural break in potential output corresponds to a change in trend growth. For the test procedure he set up three hypotheses: First, the breaks will disappear after accounting for the damaged transmission channel; second, observing transitory changes instead of level shifts suggests a healing of the transmission channel and, thus, a return to the previous trend; and third, dating breaks to a period prior to the global financial crisis and the Great Recession in 2008/2009 might provide evidence for a productivity slowdown hypothesis. Presenting the test results, he showed evidence of a structural break in the growth rates of potential GDP between 2008 and 2010 for all economies surveyed. However, he could not prove that the damaged transmission channel has had an impact on the structural break test results. Moreover, he also pointed out that the break dates do not favour the hypothesis that a productivity slowdown is the driver behind the GDP growth slowdown.

He also suggested that future related research might go into the direction of addressing the issue of a lack of data as well as implementing model/forecast aggregation methods and increasing the robustness to the data revisions.

Comments and questions

One participant noted that in Mr. Turner's presentation, two important aspects were missing regarding the effects on potential output, namely the financial sector and the uncertainty related to the production function. Mr. Turner responded by indicating that there certainly is an optimal size of the financial sector, which would deserve more consideration. In broad terms, one can argue that numerous countries have gone beyond this optimal financial sector size.

Another participant wondered about the role of the foreign output gap and foreign inflation in the presentation of Mr. Darvas. Mr. Darvas replied by arguing that the foreign inflation element captures an important part of the output gap. He also noted that the analysis was based on real-time data.

Session 6: Regional Outlook (cont.): Developing Countries and Economies in Transition

East and South Asia

Hamza Ali Malik, UN ESCAP

Mr. Malik presented the economic performance and prospects for the countries of East and South Asia. He started his presentation by providing the key messages and findings at the regional level. Economic growth in East and South Asia is weakening due to a number of factors, including lower external demand in advanced economies and the slowdown in China. In many countries, infrastructure continues constrains economic activity in many regional economies. At the same time, inflation is declining in the face of lower aggregate demand and lower commodity prices. While on the monetary policy side, the authorities are facing difficult trade-offs, there is room for further stimulus measures on the fiscal side. Key concerns for medium- to long-term growth are related to rising levels of household and corporate debt, to high inequalities of incomes and opportunities and to weak growth in productivity.

Mr. Malik then noted that ESCAP has further revised downward its growth forecasts for 2015. The downward revision reflects stronger-than-expected global and regional headwinds. He underscored that the slowdown in China is mostly a result of the ongoing efforts to rebalance the economy towards domestic demand, particularly consumption. Because of regional supply chains, China’s slowdown has a significant adverse effect on other economies in the region. East Asia’s strongly export-oriented economies as well as many South Asian economies have experienced a significant slowdown in exports.

Mr. Malik also illustrated the gradual decline in inflation across the region, which can be attributed to lower international commodity prices and weaker economic activity. He noted that in some commodity-exporting economies inflation has ticked up mainly due to sharp depreciations of local currencies. While slowing growth and lower inflation would call for further monetary easing, concerns remain over the impact of capital outflows as well as financial stability. Moreover, cuts in interest rates have so far failed to significantly boost economic activity.

Mr. Malik then turned his attention to the area of fiscal policy. He noted that fiscal balances have generally improved and public debt levels are low or moderate in most economies. Some countries have considerable room to support growth by raising fiscal expenditures, for example on infrastructure and investment in the Sustainable Development Goals. At the same time, however, many countries need to strengthen efforts to increase tax revenues. An area of concern is the rising level of household and corporate debt in the region. Construction and real estate account for the bulk of the increase in non-financial corporate debt.

Mr. Malik then examined more closely several structural growth constraints. He pointed out the income inequality has increased considerably since the 1990s, including in the region’s three most populous countries (China, India and Indonesia). Since 2010, both labour and total factor productivity have declined in most countries.

In his concluding remarks, Mr. Malik underlined that Asia-Pacific economies will in future rely more on domestic and regional demand to support growth given subdued prospects for exports to North America and Europe. The risks to financial and economic stability associated with rising private debt should not be underestimated, especially in view of a potential tightening of liquidity conditions. Greater efforts are needed to strengthen productivity growth and to pass productivity gains on to workers. The decline in the labour income share should be reversed, facilitating a rebalancing of economic structures towards consumption.

Questions and comments

A country representative from India provided additional information on India's economic outlook. According to current estimates, growth is projected to strengthen, while inflationary pressures remain low. The recovery is driven by buoyant domestic demand, which has been supported by several interest rate cuts. Weaker-than-expected monsoon rains are, however, expected to weigh on agricultural output. About 60 per cent of India's population depend on agriculture. Mr. Malik added that India's economy benefited from the reform promises made by the new Government. However, in several areas, including taxes and foreign direct investment, the authorities have been facing difficulties in implementing reform plans.

A country representative from Pakistan pointed out that low inflation and interest rate cuts have provided some support for economic activity. The ongoing energy crisis has, however, held back the industrial sector. He noted that the Pakistan-China economic could potentially play a key role for the country's medium- to long-term growth and development prospects.

Mr. Malik noted that in South Asian economies agricultural output helped sustain consumption. However, the agricultural sector's contribution to tax revenues is small. Responding to a question on exchange rates, Mr. Malik indicated that the impact on trade flows needs to be examined. He also expressed some concern over the amount of private borrowing in US dollars in some sectors. The recent devaluation of China's renminbi has strongly impacted other countries, adding to downward pressures on many other emerging market currencies. With regard to rising inequalities, Mr. Malik underscored the importance of examining the linkages between inequality and growth.

The Commonwealth of Independent States and other economies in transition

Jose Palacin, UN-ECE

Mr. Palacin presented the regional outlook for the economies in transition. He explained that there are two country groups matching this definition: the countries of South-Eastern Europe and the CIS. In the first group, Serbia has a large share in the region's total output, while in the second one the Russian Federation is the largest economy and has a strong influence over the region. However, nowadays the macroeconomic performance of the two regions is not determined by institutional transformations and the notion of a transition economy in the current format can be applied to virtually any country.

Presenting the macroeconomic picture of the region, Mr. Palacin noted that output in the CIS area has shrunk in 2015, with the biggest economies having the worst performance. In the Russian Federation, all components of domestic demand have noticeably declined in 2015 and only net exports contributed positively to growth. The Russian economy has been adversely affected by the lower oil prices and the impact of international sanctions that limit access to external capital markets. As a result, investment growth was negative amid high cost of capital and fragile business confidence. Most of the CIS currencies have weakened and remained volatile in 2014 and 2015, pushing up inflation. There is nevertheless a possibility that inflation has already passed its peak. High inflation in the CIS prompted monetary tightening, which is now gradually being reversed. Fiscal positions of the CIS countries have deteriorated in 2015. Economies that had previously accumulated sovereign wealth funds had to tap into those funds in order to fill the budget gaps. Although internal economic linkages in the CIS area are strong, they are gradually weakening; in particular, the volume of Ukraine's trade with the Russian Federation has noticeably declined. Many small CIS economies depend on remittances, predominantly sent from the Russian Federation; the flow of those remittances has sharply fallen in 2015. Private capital outflows from the Russian Federation have also declined in 2015.

In South-Eastern Europe, by contrast, economic activity has picked up in 2015, as the region benefited from stronger activity in the EU and certain post-flood reconstruction efforts, while inflation in those countries was close to zero. However, unemployment in the region remains very high. Some countries in the region also have large current account deficits, which may pose a threat to macroeconomic stability.

Discussion

Mr. Grigor Agabekian, UN-DESA, noted that the share of oil and gas sectors in the value-added of the economy of the Russian Federation is much smaller than for many other energy-exporting countries. Nonetheless, empirical evidence based on a number of econometric studies suggests a strong relationship between oil prices and the GDP growth rate for the period of the rapid economic expansion. Therefore, it is important to find the right policy mix that allows the economy to return to a stronger growth trajectory in a low oil price environment, which is projected to stay for a prolonged period. As the labour force participation in the Russian Federation is already high, and the country is confronted with unfavourable demographic trends, output growth should be driven by improvements in total factor productivity, which will require much higher investment rates. Mr. Agabekian also noted that if the economy of the Russian Federation is trapped in a low growth regime, many smaller CIS economies may need to diversify their export markets. Regarding South-Eastern Europe, he mentioned the impact of the recent migrant crisis in Europe on the region through disruptions of trade flows with the EU.

In the following discussion, Mr. Palacin responded to the comment that the common tariff structure of the Eurasian Economic Union could deter foreign investment into small CIS economies. He noted that according to most studies the quality of business environment matters more for the investment inflows.

Africa

Adam Elhiraika, UN-ECA

Mr. Elhiraika began his presentation by outlining the main messages of the economic outlook for the region: i) Africa‘s growth remained largely unchanged, despite low commodity prices and a slow pick up in trade; ii) employment data suggested a decline in unemployment; iii) inflation rates have increased owing to the depreciation of domestic currencies associated with declining commodity prices; iv) reduced fiscal revenues from commodities and expansionary fiscal policies led to an increase in fiscal deficits in 2015; v) all sub-regions experienced current account deficits; vi) medium-term prospects remained favourable due to strong domestic fundamentals and vii) the weak global economy, monetary tightening, weather-related shocks and security concerns continued to be the main risks and challenges for the region. Mr. Elhiraika then described some recent trends in economic growth across sub-regions and countries. Concerning the key drivers of growth, several aspects were highlighted, such as expanding domestic demand; improving macroeconomic environment in a number of countries; increasing public expenditure (especially in infrastructure); and the increasing investment ties with emerging economies. Mr. Elhiraika argued that commodity revenues remained important for the region. In fact, oil-exporting countries continued to outperform oil-importing countries. However, there was a notable pick-up in growth of oil-importing countries driven by consumer spending. The low commodity prices also weighed on growth of mineral-rich countries, though this is offset by strong private consumption.

Mr. Elhiraika then analysed the recent increase in fiscal deficits across several sub-regions. Overall, the fiscal deficit in Africa increased from 5.1 per cent of GDP in 2014 to 5.6 per cent of GDP in 2015. This trend was explained by the decline of oil prices and volatile commodity prices, which reduced fiscal revenues in most of African economies. As a result, measures have been taken to improve the fiscal accounts in some countries. Another aspect underlined by Mr. Elhiraika was that foreign direct investments into Africa continued to be strong in spite of the decline in commodity prices. He then discussed some of the downside risks for the economic outlook in Africa. In particular, the slowdown in China is a serious cause of concern, as China represents around 16 per cent of Africa’s exports and 7 per cent of capital investment. However, the expected recovery in Europe could offset some of this negative effect. Other risks mentioned were the fragile growth in the global economy; the weakening and volatile global commodity prices; the expected tightening of monetary policy in the United States, and security and political concerns. Mr. Elhiraika ended his presentation by emphasizing the need for counter-cyclical macroeconomic policies.

Latin America and the Caribbean

Sebastian Vergara, UN-DESA

Mr. Vergara started his presentation by describing the growth performance for the region in the last fifteen years. The main message was that regional growth has sharply decelerated since 2011, amid serious domestic vulnerabilities and more challenging external conditions. This trajectory reflected a significant contraction in domestic demand, led by a fall in investment and a slowdown in consumption. Moreover, he highlighted that the region was entering a period of significant economic difficulties. Mr. Vergara underscored, however, that Latin America and the Caribbean was seeing a divergent growth outlook across sub-regions: while Mexico and Central America were expected to see improvements in their economic performance in the near term, several South American economies have been experiencing sharp economic contractions. Meanwhile, the Caribbean was expected to maintain stable and moderate growth, similar to previous years. The presentation stressed that more challenging external conditions, including lower commodity prices and subdued global trade, expectations over the normalization of the monetary policy stance in the United States and the slowdown in China, were affecting the economic outlook through a myriad of channels. These channels include a contraction of capital inflows and a deterioration of the fiscal accounts, the export performance and the investment prospects.

Mr. Vergara then discussed the monetary and fiscal space to implement counter-cyclical policies in the region. It was emphasized that the policy space was clearly narrowing and policymakers were facing significant dilemmas. For example, although growth remains subdued and many economies implemented a counter-cyclical approach in their monetary stance since 2014, there were increasing pressures for tightening by the end of 2015. In fact, inflation was accelerating, particularly in South American economies, and there were increasing pressures related to the prospects of an interest rate hike in the United States. On the fiscal side, the presentation stressed that the decline in commodity prices has seriously affected public revenues across the region. As a result, several countries had to implement significant adjustments to their public budgets in 2015 and 2016. Mr. Vergara then mentioned that the economic slowdown was also gradually affecting labour markets across the region, particularly in South America. Since the second quarter of 2015, unemployment rates have started to increase visibly, amid lower job creation and decreasing employment rates. Hence, the regional unemployment rate was expected to increase from 6.0 per cent in 2014 to 6.6 per cent in 2015 and even further in 2016. Finally, Mr. Vergara analysed some downside risks for the region, including lower-than-expected growth in the United States, a sharper slowdown in China and potential spillovers from global financial markets. At the same time, he indicated that some structural issues have remained as a significant constraint to the outlook for the region, such as the lack of diversification of the productive structure and large and widespread infrastructure gaps. Mr. Vergara concluded that the region will face serious difficulties to resume the growth rates of the previous decade and to expand or even maintain social improvements.

Western Asia

Jose Antonio Pedrosa, UN-ESCWA

Mr. Pedrosa started his presentation by describing some of the major economic and political factors that were affecting the region, including the sharp decline in oil prices, the slowdown in China and the strong dollar. The serious conflicts in countries such as Iraq, Libya, the Syrian Arab Republic and Yemen were also prominently discussed in the presentation. In particular, Mr. Pedrosa analysed the economic costs of conflicts across different social areas, sectors and other economic dimensions such as foreign direct investment and trade. He then stressed that the decline of oil prices was clearly worsening the economic prospects for the region. In particular, Mr. Pedrosa described the recent trends in fiscal account indicators and analysed to what extend lower oil prices were affecting the budget balance. Some options to reduce the public deficits were also debated, such as raising taxes, cutting spending and withdrawing of sovereign welfare funds. Other effects of the lower oil prices were also mentioned, such as the rise in the current account deficit and the drop in stock indices. Mr. Pedrosa then argued that the main downside risks for the region were a worsening of the armed conflicts, a further slowdown in China and potential further capital outflows related to the upcoming interest rate increases in the United States. He ended his presentation by commenting on the potential effects of fiscal tightening on the socio-political situation in some countries.

Comments and questions

After the presentations, several Project LINK members provided brief overviews of the economic outlook for individual countries. In Ghana, inflation has significantly picked up, accompanied by monetary policy tightening. The debt-to-GDP ratio stands at 72 per cent, with the country having access to the Eurobond market and the current interest rate standing at around 10 per cent.

In Angola, a further downward revision of the GDP growth rate is needed. The fall in oil prices represents a structural shock. During the period from 2010 to 2014, the country built up foreign exchange reserves and inflation remained in single digits. The policy response to the decline in oil prices came this time faster than in the past, notably through an adjustment in the fiscal budget. The country is suffering from the Dutch disease of oil dependence, which underscores the need for diversification.

Regarding the Caribbean, a staff member from ECLAC/Port of Spain mentioned that the economic outlook and the LINK conference should place greater emphasis on small economies. He also mentioned that the Caribbean has been experiencing a debt crisis similar to the one in Greece, highlighting the need for a debt reduction strategy.

Session 7: Forecasting and Econometrics

Pete Richardson, London

Mr. Pete Richardson discussed nowcasting and the role of big data in short-term macroeconomic forecasting. He argued that monthly data can help to improve the accuracy of quarterly forecasts and to address the issue of long time lags in data availability. Considering the large amount of information currently available on the internet, Big Data may be able to provide information regarding current economic activities. Two sets of Big Data may be particularly useful for the purpose of forecasting: (1) internet search statistics; and (2) detailed micro-level transaction data generated by economic and financial systems. The rationale behind using the first set of data is the observation that economic agents use internet searches to obtain information before making decisions on economic activities. An increasing number of studies use internet search statistics in modelling. This area of research typically involves constructing time series indicators on the frequency of internet searches for keyword or phrases that are related to specific economic activities. After demonstrating how the Google Trends Search Tool can be used to extract data that is useful for forecasting, Mr. Richardson reviewed some relevant papers on labour markets, consumption and others fields that adopted this approach. He also discussed the limitations of the Google Trends approach from the perspectives of data and modelling framework.

In discussing the use of micro-level transaction data, Mr. Richardson mainly used the SWIFT system as an example, along with ADP, ADS and Ceridian Pulse. Several studies have found that the combination of SWIFT payment indicators with conventional short-term macro indicators could improve the performance of short-term GDP predictions. However, Mr. Richardson also pointed out that SWIFT indicators reveal the volume of messages, rather than the level of transactions. Mr. Richard concluded that Big Data indicators are useful additions to the forecasting toolkits, but warrant further development.

Comments and questions

The presentation was followed by a brief discussion on using high frequency data on electricity consumption to trace the dynamics of economic activities.

Robert S. Mariano, University of Pennsylvania, Philadelphia

Mr. Mariano presented joint work with Mr. Ozmucur on high-mixed-frequency forecasting models for GDP in selected Southeast Asian countries**.** He first presented some issues of the mixed-frequency approach, namely the importance of using a parsimonious set of indicators, the additional complexities for estimation, and the importance of data reduction techniques. For this work, target variables are of quarterly frequency, while indicator variables are of monthly frequency. The model itself can be of either quarterly or monthly frequency. For the quarterly approach, the model can be a benchmark ARMA or VARMA with no monthly indicator necessary. It could also be a bridge equation with distributed lag, a bridge equation with principle components, or the current quarterly model built by Lawrence R. Klein. For the monthly model, it can be either a mixed-frequency vector autoregressive (MF-VAR), a mixed data sampling model (MIDAS), or a mixed frequency dynamic latent factor model

(MF-DLFM). The advantage of the monthly models is that they can provide information on the target variable at a high frequency (for example, GDP data at monthly level). Mr. Mariano also discussed some estimation issues for the MIDAS and MF-DLFM models.

This work also includes an empirical case study of the Philippines, using quarterly data from 2000Q1 to 2015Q2. The target variables are the real GDP growth rate and the GDP deflator growth rate. Ten monthly statistics series were used as indicator variables for the GDP growth rate and eight monthly statistics series were used as indicator variables for the GDP deflator. Nine types of models were estimated for this research, namely, AR, VAR, LEI, Bridge, Bridge-PCA, PCA with Two Groups, MIDAS, MIDAS-PCA, and MF-DLFM. Based on static in-sample simulation and turning point analysis, MF-DLFM performed better than MIDAS. MF-DLFM also presents a parsimonious approach, which depends on a smaller data set that needs to be updated. However, robustness of these findings needs further analyses.

Stephen G. Hall, Leicester University

Mr. Hall presented joint work with P.A.V.B. Swamy and G.S. Tavlas on time-varying coefficient models. He noted that econometric models are subject to problems of measurement error, lack of knowledge of the true functional form, and omitted variables. The methodology of time-varying coefficient estimation (TVC) is able to deal with all those problems at once. However, this methodology also has a weakness related to how to determine the split of the coefficient drivers into (1) the set which determines the unbiased coefficient and; (2) the set which captures all the biases. The presented paper seeks to address this problem. The paper proposes new way of estimating coefficient drivers for the TVC framework, which will allow generalising a number of standard non-linear models in order to allow for both a stochastic term in the coefficient equation and for biases from omitted variables and measurement errors. Mr. Hall presented two examples of applying the proposed technique: (1) when the true model has a linear form and the biases stem from missing variables and measurement errors; and (2) when the true model has a polynomial form. Since the true form of non-linearity is not known in the general case, possible options may include incorporating a number of polynomial terms, trying a range of non-linear forms, or including a set of simple non-linear transformations.

As a practical example, Mr. Hall illustrated the application of the proposed methodology by analysing the impact of the actions of rating agencies on sovereign bond spreads.

The presentation was followed by a brief discussion, which focused on difficulties associated with the lack of knowledge of the true functional form.

Sebastian Koch, Institute for Advanced Studies, Vienna

Mr. Koch presented an online tool for analysing inflation in the EU. He explained that the motivation to create an online tool was the inconvenience of analysing inflation components using traditional data sources. Therefore he developed a tool visualising inflation data. He presented the structure of the web site, which has three sections with six different views on inflation, including various basic inflation charts, inflation component analysis, and an inflation differential. As an example of using the tool, he presented a visual analysis of inflation in Austria for the recent period.

Session 8: Global Modelling

Dawn Holland, UN-DESA

Ms. Holland presented an econometric approach of how to model the macroeconomic transmission of commodity prices. She first illustrated the declines in the commodity export and import indices for a set of commodity-dependent countries since 2011. Ms. Holland then underscored that a comprehensive modelling approach needs to consider several transmission channels. On the demand side, commodity prices have a direct impact on the price level and the terms of trade and a secondary impact on all components of demand, including consumption, investment, government spending and net exports. On the supply side, commodities serve as an output in commodity-producing economies and, in some cases, also as an input into the production process (e.g. oil). She noted that the main challenge that arises when capturing the key differences between countries' reaction to commodity price changes was to maintain global consistency.

Ms. Holland then outlined the major building blocks of a model that estimates the macroeconomic impact of oil price adjustments. The key approach is to set up a framework for estimating the impact of oil price changes on GDI, defined as terms-of-trade-adjusted GDP. She then presented preliminary regional estimates for a 10 per cent rise in the oil price based on the terms-of-trade effect. In the next step, Ms. Holland described the transmission of the price shock on producer prices, the user cost of capital and consumer prices and presented a set of tables on the pass-through to petrol prices.

Robert K. Kaufmann, Boston University

Mr. Kaufmann made a presentation on "Airfares and Oil Prices: Symmetric Airfare Adjustments to Asymmetric Oil Markets". He opened his presentation with the puzzling observation that airlines must have saved up to $20 billion due to the recent decline in oil and jet fuel prices; however, only a small decline in airfares amid a decreasing concentration on the airline market can be noted. According to the speaker, there are several testable hypotheses in order to analyse where the asymmetries in the airfare market originate from: Firstly, airfares adjust symmetrically to the oil market. Secondly, airfares adjust asymmetrically to the oil market. Thirdly, airfares adjust symmetrically to asymmetric changes in the oil market.

Mr. Kaufman based his test for asymmetries on the estimation of a CVAR model using monthly data, relating several variables of the airfare market (for instance, refinery utilization rates, crude oil stocks, wholesale jet fuel prices, retail jet fuel prices, jet fuel stocks and airfares) to crude oil prices and lagged variables; followed by an error correction model. Using the results, he set up a diagram of co-integrating relations. This diagram showed that jet fuel stocks have a negative impact on airfares, whereas retail jet prices have a positive impact on airfares. He thus concluded that airfares adjust symmetrically to whatever happens on the oil market.

But what exactly happens on the oil market? Mr. Kaufman indicated that jet fuel wholesale prices and inventories react faster to a decline than to a rise in oil prices. This might be the case since jet fuel inventories are comparatively larger than those for other refined petroleum products. A rise in crude oil prices draws down inventories and, consequently, slows transmission to wholesale prices. On the other hand, a fall in crude oil prices leads to a build-up in inventories. He stressed that it is necessary to closely scrutinise whether a decline in oil prices has completely passed through to jet fuel prices. The data show that airfares also react faster to a decline in crude oil prices than to a rise. Mr. Kaufman did not find any evidence for asymmetric rates of adjustment in the airfare market. He thus concluded that the observed asymmetries must originate from the oil market and, therefore, cannot be solved in the airline industry.

Pami Dua, Delhi School of Economics

Ms. Dua presented a modelling and forecasting approach of the determinants of the INR/USD exchange rate. Since March 1993, India has a flexible exchange rate system where the exchange rate is largely determined by demand and supply conditions in the market. The Reserve Bank of India follows a policy of managed floating, i.e. direct interventions in the foreign exchange rate market through purchases and sales in both spot and forward markets are frequently undertaken, particularly during periods of instability.

Ms. Dua explained that the theoretical model is based on a hybrid approach that encompasses several models, such as the flexible-price and sticky-price monetary model, the real interest differential model, the Hooper-Morton's extension of the sticky-price model and a portfolio approach, which introduces the current account in the model. The final empirical model includes the following explanatory variables: interest rate differential, output differential, money supply differential, forward rate of the INR/USD, volatility of capital inflows, order flows, a measure for the official intervention by the central bank and the rate of return on Indian stocks less the rate of return on US stocks.

Turning to the empirical methodology, she first presented several methods to check the integrity of the model. Those include unit root tests for non-stationarity, a granger causality test, and innovation accounting methods like impulse response functions and variance decompositions. All those testing methods revealed that the money supply differential and liquidity seem to be the most important factors for explaining changes in the exchange rate. Then, she turned to the econometric techniques – univariate models as well as multivariate models – which she used to produce forecasts of the exchange rate. In order to select the “best” forecasting model, i.e. the model that produces the most accurate forecasts of the exchange-rate movements, she estimated alternative models using monthly data from July 1996 through December 2012. She compared their performance in producing one-through twelve-months-ahead forecasts for the period January 2013 to December 2014 to the actual data points. In doing so, she used the Theil U-statistic to measure the out-of-sample forecast accuracy while the Modified Diebold Mariano test was conducted to compare the forecast performance of alternative models. However, she pointed out that the estimation and selection of the “best” model based on the discussed criteria does not ensure “best” ex-ante forecasts. The results show that BVAR models generally outperform their corresponding VAR variants while multivariate models are superior to univariate models. Moreover, she concluded that the forecast accuracy can be improved by extending the monetary model with a forward premium, capital inflow volatility and order flows. Additionally, including the differential of rates of return on stocks, helps to improve long-term forecasts.

Finally, Ms. Dua pointed out that the accuracy of her forecast model might imply that she can beat a random walk forecast. This might, however, not hold true for other countries since the Indian central bank occasionally steps in and smooths out the volatility in the exchange rate, which makes it easier to produce accurate forecasts.

Comments and discussion

The brief discussion following the presentations touched on issues such as the asymmetric response of winners and losers in a commodity price shock: in 2006 the negative impact of the rise in oil prices on the global economy was attributed to the slow recycling of oil revenue by oil-exporting economies, whereas today the negative impact of the decline in oil prices at the global level is partly attributed to the much of the windfall gains in oil-importing countries being saved.

Concluding Session

Mr. Pingfan Hong, UNDESA and Prof. Peter Pauly spoke at the concluding session of the LINK meeting. While presenting a very brief summary of the discussions, they thanked all the participants for their insightful contributions to the discussions. Mr. Hong also thanked

the UNDESA support staff and Erin Bell from the Project LINK center in Toronto for providing excellent logistical support to the meeting.

Annex

Programme
(Version 21 October 2015)

Wednesday, October 21, 2015

9:30 – 9:45	**Opening Remarks** Peter Pauly, University of Toronto Hamid Rashid, UN-DESA
9:45 - 11:30	**World Economic Outlook** Chair: Peter Pauly *Hamid Rashid, UN-DESA* *Thomas Helbling, IMF* *Franziska Ohnsorge, World Bank*
11:30-11:45	*Break*
11:45-13:15	**World Economic Outlook (cont.)** Chair: Peter Pauly <u>Lead Discussants:</u> *Carl Weinberg, High-Frequency Economics* *Dave Turner, OECD, Paris* *Beth Ann Bovino, Chief U.S. Economist, Standard and Poor's* *Kathy Bostjancic, Oxford Economics* *Moazam Mahmood, ILO, Geneva* General Discussion
13:15 – 14:15	*Lunch*
14:15 – 15:45	**China and United States** Chair: Ingo Pitterle, UN-DESA "Near-Term Prospects vs. Long-Run Development Trends in China: Riding the Wave" *Carl Weinberg, High-Frequency Economics, New York*

Discussant: Hoi Wai Cheng, UNDESA

United States,
Hung-Yi Li, UN-DESA

General Discussion

15:45 – 16:00 *Break*

16:00 – 17:30 **World Commodity Markets**
Chair: *Sergio Vieira, UN-DESA*

Agricultural Commodities
Willy Meyers, University of Missouri, Columbia (Mo.)

The World Oil Market
Robert Kaufmann, Boston University

Summary Discussion of Global Outlook

Thursday, October 22, 2015

9:30- 11:30 **Regional Outlook: Japan and Europe**
Chair: Hamid Rashid, UN-DESA

Japan
Yoshihisa Inada, Konan University and APIR

"The Macroeconomics of Japans Trade Balance"
Byron Gangnes, University of Hawaii

"Macro-Economic Outlook for the Euro Area"
Pavlos Karadeloglou, ECB, Frankfurt

"Unconventional Monetary Policy and Money Demand"
Christian Dreger, DIW, Berlin

Each lead presentation is followed by comments from
LINK country experts

11:30–11:45 *Break*

11:45–13:15 **Global Issues: Potential Output and the 'New Normal'**
Chair: Delia Nilles

"Re-assessing the role of weak investment to the slowdown in productivity growth and secular stagnation"
David Turner, OECD, Paris

"Sustainability as Determinant of Potential Output in Open Economies"

Zsolt Darvas and Andras Simon, Corvinus University and Central Bank of Hungary, Budapest

"Structural Breaks in Potential GDP of Four Major Economies: Just Impaired Credit or the 'New Normal'"
Alexander Apokin and I. Ipatova, CMASF and NRU-HSE, Moscow

Group Discussion

13:15–14:15 *Lunch*

14:15–15:45 **Regional Outlook (cont.): Developing Countries and Economies in Transition**
Chair: Mette Rolland

East Asia and South Asia
Hamza Ali Malik, UN-ESCAP

CIS and other economies in transition
Jose Palacin, UN-ECE

Discussant: Grigor Agabekian, UN-DESA

Each lead presentation is followed by comments from
LINK country experts

15:45–16:00 *Break*

16:00-17:30 **Regional Outlook (cont.): Developing Countries and Economies in Transition**
Chair: Matthias Kempf, UN-DESA

Africa
Adam Elhiraika and Hopestone Chavula, UN-ECA

Latin America and the Caribbean
Sebastian Vergara, UN-DESA

Western Asia
Jose Antonio Pedrosa-Garcia, UN-ESCWA,
Each lead presentation is followed by comments from
LINK country experts

Friday, October 23, 2015

9:30-11:30 **Forecasting and Econometrics**
Chair: Alexander Welfe

"Nowcasting and the Role of Big Data in Short-Term Macroeconomic Forecasting: A Critical Review"
Pete Richardson, London

"High-Mixed-Frequency Forecasting Models for GDP in Selected Southeast Asian Countries"
Roberto S. Mariano and Suleyman Ozmucur, University of Pennsylvania, Philadelphia

"Time-Varying Coefficient Models"
Stephen G. Hall, P.A.V.B. Swamy and George S. Tavlas, Leicester University and Bank of Greece, Athens

"A New Tool for Inflation Analysis: Short Demonstration"
Sebastian Koch, IHS, Vienna

11:30-11:45 *Break*

11:45–13:15 **Global Modelling**
Chair: Charlotte Du Toit

"Modeling the Macroeconomic Transmission of Commodity Prices"
Dawn Holland, UN-DESA

"Airfares and Oil Prices: Symmetric Adjustments to Asymmetric Adjustments in Oil Prices"
Robert Kaufmann, Boston University

"Determination of the INR/USD Exchange Rate: Modelling and Forecasting"
Pami Dua, University of Delhi

13:15-13:30 **Closing Session**

Suzana Maria de Fatima Camacho Monteiro
Banco Nacional de Angola
Avenida 4 de Fevereiro, 151
Luanda, ANGOLA
Tel: 244-9271-3233
Fax:
E-mail: suzycamacho@yahoo.com

Jane Cunningham
National Inst. for Economic & Industry Research
416 Queens Parade
Clifton Hill
Victoria 3068, AUSTRALIA
Tel: 61-3-9488-8444
Fax: 61-3-9488-3262
E-mail: jcunningham@nieir.com.au

Sebastian Koch
Institute for Advaned Studies (IHS)
Josefstadter Strabe 39
1080 Vienna, AUSTRIA
Tel: 43-681-1055-9856
Fax:
E-mail: koch@ihs.ac.at

Eustaquio Reis
IPEA/DIMAC
Av. Pres. Antonio Carlos 51, sala 1703
Rio de Janeiro - RJ 20.020-010, BRAZIL
Tel: 55-21-351-51-8680
Fax: 55-21-351-58-615
E-mail: ejreis1@gmail.com

Garabed Minassian
Economic Research Unit
Bulgarian Academy of Sciences
3, Aksakov Str.
1000 Sofia, BULGARIA
Tel: 359-2-957-2419
Fax: 359-2-988-2108
E-mail: minasian@mail.techno-link.com

Erin Bell
Rotman School of Management
Project LINK/Institute for International Business
University of Toronto
105 St. George St.,
Toronto, Ontario M5S 3E6, CANADA
Tel: 416-978-5353
Fax:
E-mail: erin.bell@rotman.utoronto.ca

Peter Pauly
Rotman School of Management
University of Toronto
105 St. George St.
Toronto, Ontario M5S 3E6, CANADA
Tel: 416-978-4331
Fax: 416-971-2071
E-mail: pauly@rotman.utoronto.ca

Tongsan WANG
Institute of Quantitative & Technical Economics
Chinese Academy of Social Sciences
No. 5 Jianguomennei Street
Beijing 100732, CHINA
Tel: 86-1350-1127-138
Fax: 86-10-6513-7561
E-mail: wangts@cass.org.cn

Yaxiong Zhang
Department of Economic Forecasting
State Information Centre
No. 58 Sanlihelu Road
Xicheng District
Beijing 100045, CHINA
Tel: 86-10-6855-8135
Fax: 86-10-6855-8210
E-mail: zhangyx@mx.cei.gov.cn

Baoliang ZHU
Department of Economic Forecasting
State Information Center
No. 58, Sanlihe Road
Xicheng District
Beijing 100045, CHINA
Tel: 86-10-6855-8135
Fax: 86-10-6855-8210
E-mail: zhubl@mx.cei.gov.cn

Juan-Rafael Vargas
Escuela de Economia
Universidad de Costa Rica
San Pedro de Montes de Oca 2060, COSTA RICA
Tel: 506-2260-2696
Fax: 506-25-11-52-41
E-mail: jrvargas20@yahoo.com

Dan Knudsen
Statistics Denmark
Sejrogade 11
DK-2100 Copenhagen O, DENAMARK
Tel: 4539-17-32-08
Fax:
E-mail: dkn@dst.dk

Per Bremer Rasmussen
Danish Insurance Association
Philip Heymans Alle 1
DK - 2900 Hellerup, DENMARK
Tel: 45-4191-9001
Fax: 45-33-43-5501
E-mail: pbr@forsikringogpension.dk

Hopestone Kayiska Chavula
Macroeconomic Policy Division
UNECA
P.O. Box 3001
Addis Ababa, ETHIOPIA
Tel: 251-11-544-3455
Fax:
E-mail: HChavula@uneca.org

Adam Elhiraika
Chief, Macroeconomic Policy Division
United Nations Economic Commission for Africa
P.O. Box 3001
Addis Ababa, ETHIOPIA
Tel: 251-11-544-5442
Fax: 251-11-551-3038
E-mail: aelhiraika@uneca.org

David Turner
Macroeconomic Analysis Division, Economics Department
OECD
2 rue Andre-Pascal
MBAT 5143
75016 Paris 75016, FRANCE
Tel: 33 1 145 24 87 15
Fax: 33-1-44-30-63-78
E-mail: David.TURNER@oecd.org

Gyorgy Barabas
RWI
Hohenzollernstr. 1-3
45128 Essen, GERMANY
Tel: 49-201-8149-225
Fax: 49-201-8149-200
E-mail: barabas@rwi-essen.de

Christian Dreger
Macroanalysis and Forecasting
DIW Berlin
Mohrenstr. 58
Berlin 10117, GERMANY
Tel: 49-30-8978-9231
Fax:
E-mail: cdreger@diw.de

Pavlos Karadeloglou
European Central Bank
Sonnemannstr 20
60314 Frankfurt, GERMANY
Tel: 49-69-1344-7649
Fax:
E-mail: Pavlos.Karadeloglou@ecb.int

Cletus Dordunoo
ClayDord Consult
University Post Office, P.O. Box LG 46
Legon, Accra, GHANA
Tel: 233-24-4666-392; 233-208755535
Fax: 233-21-502721
E-mail: claydord@gmail.com

Zacharias Bragoudakis
Bank of Greece
21, El. Venizelos Ave.
10250 Athens, GREECE
Tel: 302-103-203-605
Fax:
E-mail: zbragoudakis@bankofgreece.gr

Win Lin Chou
ACE Centre for Business and Economic Research
Suite #2602, Ocean Building
80 Shanghai Street
Kowloon, HONG KONG
Tel: 852-6715-1943
Fax:
E-mail: wlchou@e.cuhk.edu.hk

Zsolt Darvas
Department of Mathematical Economics and Economic Analysis
Corvinus University Budapest
Fovam ter 8
H-1093 Budapest, HUNGARY
Tel: 36-30-343-9048
Fax: 36-1-482-5029
E-mail: zsolt.darvas@uni-corvinus.hu

Pami Dua
Delhi School of Economics
Department of Economics
University of Delhi
Delhi 110007, INDIA
Tel: 91-981-015-3341
Fax:
E-mail: dua@econdse.org

Paolo Onofri
Department of Economics
Prometeia
Via Marconia 43
40122 Bologna, ITALY
Tel: 39-051-648-0932
Fax:
E-mail: paolo.onofri@prometeia.it

Yoshihisa Inada
Faculty of Economics
Konan University and APIR
8-9-1, Okamoto Higashinada-ku
Kobe 658-8501, JAPAN
Tel: 81-78-431-4341
Fax:
E-mail: inada@konan-u.ac.jp

Nae Young Kang
Korea International Trade Association (KITA)
Trade Tower Room 48th Floor, World Trade Center
Gangnam-Gu
Seoul 135-729, KOREA
Tel: 82-2-10-9272-8382
Fax:
E-mail: nykang87@kita.net

Jose Antonio Pedrosa-Garcia
UN-ESCWA
Riad El Solh Square
Beirut, LEBANON
Tel: 961-1-978-428
Fax:
E-mail: pedrosagarcia@un.org

Tjiveze Tjipe
Bank of Namibia
P.O. Box 2882
71 Robert Mugabe Ave.
Windhoek, NAMIBIA
Tel: 264-81-241-2463
Fax:
E-mail: tj.tjipe@iway.na

Mette Rolland
The Financial Supervisory Authority of Norway
Revierstredet 3
P. O. Box 1187 Sentrum
NO-0107 Oslo, NORWAY
Tel: 47-22-93-9833
Fax: 47-22-63-0226
E-mail: mette.rolland@finanstilsynet.no

Masood Ahmed Qazi
Institute of Business Administration
Social Policy and Development Centre
City Campus, Garden Road
Karachi - 75350, PAKISTAN
Tel: 9221-3810-4701
Fax: 92-21-926-1508
E-mail: qmasood@iba.edu.pk

Reynaldo Reyes Cancio
NEDA
NPPS, 5/F NEDA Building
12 Blessed Josemarie Escriva Drive, Ortigas Center
Pasig City, PHILIPPINES
Tel: 632-631-3712
Fax:
E-mail: RRCancio@neda.gov.ph

Aleksander Welfe
Chair of Econometric Models ad Forecasts
University of Lodz
41, Rewolucji 1905r.
90-214 Lodz, POLAND
Tel: 48-42-635-5522
Fax:
E-mail: emfalw@uni.lodz.pl

Elena Abramova
Center for Macroeconomic Analysis and Short-Term Forecasting
47 Nakhimovsky Prospekt Room 1308
117418 Moscow, RUSSIA
Tel: 7-499-129-1722
Fax: 7-499-129-0922
E-mail: EAbramova@forecast.ru

Alexander Apokin
Center for Macroeconomic Analysis and Short-Term Forecasting
Nakhimovskiy prospect, 47
Room 1303
117418 Moscow, RUSSIA
Tel: 7-499-129-1722
Fax: 7-499-129-0922
E-mail: aapokin@forecast.ru

Kirill Mikhaylenko
Center for Macroeconomic Analysis and Short-Term Forecasting
Nakhimovskiy Prospect 47
Room 1303
117418 Moscow, RUSSIA
Tel: 7-499-129-1722
Fax: 7-499-129-0922
E-mail: kvm@forecast.ru

Franjo Stiblar
Ekonomski Institute Pravne Fakultete
University of Ljubljana
Presernova 21
1000 Ljubljana, SLOVENIA
Tel: 386-41-666-757
Fax: 386-1-425-6870
E-mail: franjo.stiblar@eipf.si

Charlotte du Toit
Plus Economics Advisory
P.O. Box 95704
Waterkloof, Pretoria 0145, SOUTH AFRICA
Tel: 27-0-832-686-261
Fax: 27-0-865-165-402
E-mail: charlotte@pluseconomics.co.za

Kyu-Chul Jung
Korea Development Institute
263 Namsejong-ro
Sejong-si 30149, SOUTH KOREA
Tel: 82-44-550-4155
Fax:
E-mail: kcjung@kdi.re.kr

Hee Il Koo
Korea Development Institute
263 Namsejong-ro
Sejong-si 30149, SOUTH KOREA
Tel: 82-44-550-4155
Fax:
E-mail: hikoo@kdi.re.kr

Adolfo Castilla
Universidad Antonio de Nebija
Campus Dehesa de la Villa
Calle Pirineos, 55
28040 madrid, SPAIN
Tel: 34-64-986-1159
Fax:
E-mail: acastillag@telefonica.net

Ekkehard Ernst
International Labour Organization
4, Route des Morillons
1211 Geneva, SWITZERLAND
Tel: 41-22-799-7791
Fax:
E-mail: ernste@ilo.org

Stefan Kuehn
International Labour Organization
4 Route des Morillons
1211 Geneva, SWITZERLAND
Tel: 41-22-799-6867
Fax:
E-mail: kuehn@ilo.org

Moazam Mahmood
International Labour Organization
Route des Morillons 4
1211 Geneva 22, SWITZERLAND
Tel: 41-22-799-7076
Fax:
E-mail: mahmood@ilo.org

Nicolas Maystre
Macroeconomic and Development Policies Branch
Division of Globalization and Development Strategies
UNCTAD
Palais des Nations
Room: E.10013
1211 Geneva 10, SWITZERLAND
Tel: 212-963-4739
Fax: 212-963-1061
E-mail: nicolas.maystre@unctad.org

Délia Nilles
Institute 'Créa'
Université de Lausanne
Interef
CH-1015 Lausanne-Dorigny, SWITZERLAND
Tel: 41-21-692-3353
Fax: 41-21-692-3355
E-mail: delia.nilles@unil.ch

Janvier Nkurunziza
Special Unit on Commodities
UNCTAD
Palais des Nations
8-14 Avenue de la Paix
CH-1211 Geneva 10, SWITZERLAND
Tel: 41-22-917-4546
Fax: 41-22-917-0509
E-mail: Janvier.Nkurunziza@unctad.org

Jose Palacin
UNECE
Palais des Nations
8-14 Avenue de la Paix
Geneva, SWITZERLAND
Tel: 41-22-917-1643
Fax:
E-mail: jose.palacin@unece.org

Ray Y. Chou
Institute of Economics
Academia Sinica
128 Academia Rd., Section 2
Nankang, Taipei 11529, TAIWAN PROVINCE OF CHINA
Tel: 886-2-2782-2791*321
Fax: 886-2-2785-3946
E-mail: imfacrc@gmail.com

Wen-Jen Tsay
Institute of Economics
Academia Sinica
128 Academia Rd., Section 2
Nankang, Taipei 11529, TAIWAN PROVINCE OF CHINA
Tel: 886-2-2782-2791*296
Fax:
E-mail: wtsay@econ.sinica.edu.tw

Hamza Ali Malik
Macroeconomic Policy and Development Division
UNESCAP
UN Building, Rajadamnern Nok Avenue
Bangkok 10200, THAILAND
Tel: 66-2-288-2011
Fax:
E-mail: malikh@un.org

Dillon Alleyne
Economic Development Unit
ECLAC Subregional Headquarters for the Caribbean
ECLAC
1 A Chancery Lane, P.O. Box 113
Port-of-Spain, TRINIDAD AND TOBAGO
Tel: 868-224-8077
Fax: 868-623-8485
E-mail: Dillon.Alleyne@eclac.org

Maria Skrypnychenko
Institute of Economic Forecasting
National Academy of Sciences of Ukraine
26, Panas Myrny St.
Kiev-11, 01011, UKRAINE
Tel: 380-44-280-0417
Fax: 380-44-280-88-69
E-mail: skrypnichenko@mail.ru

Stephen Hall
Department of Economics
University of Leicester
University Road
Leicester LE1 7RH, UNITED KINGDOM
Tel: 44-0116-252-2827
Fax: 44-0116-252-2908
E-mail: s.g.hall@le.ac.uk

Pete Richardson
Independent/Llewellyn-Consulting
7 Larch Walk
Hatfield Peverel
CM3 2SF Essex, UNITED KINGDOM
Tel: 44-770-987-4432
Fax:
E-mail: pete.w.richardson@gmail.com

Grigor Agabekian
Development Policy Analysis Division
United Nations
S-2512
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-4712
Fax:
E-mail: agabekian@un.org

Clive Altshuler
International Consultant
2540 Shore Blvd Apt 4K
Astoria, NY 11102, USA
Tel: 212-433-0573
Fax:
E-mail: rcaltshuler@outlook.com

Kathy Bostjancic
Oxford Economics
5 Hanover Square
New York, New York 10004, USA
Tel: 917-880-2637
Fax:
E-mail: kathybostjancic@oxfordeconomics.com

Beth Ann Bovino
Standard and Poor's Ratings Services
55 Water Street
New York, NY 10041, USA
Tel: 212-438-1652
Fax:
E-mail: bethann.bovino@standardandpoors.com

Thomas Chen
Department of Economics & Finance
St. John's University
8000 Utopia Parkway,
Bent Hall - Room 391
Queens, New York 11439, USA
Tel: (718) 990-6419
Fax: (718) 990-1868
E-mail: vroulisf@stjohns.edu

Jackie Cheng
Development Policy Analysis Division
United Nations
S-2507
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-4707
Fax:
E-mail: cheng3@un.org

Alfredo Coutino
Center for Economic Forecasting of Mexico (CKF)
P.O. Box 38521
Philadelphia, PA 19104, USA
Tel: 215-219-6214
Fax:
E-mail: acoutino@ckf-forecasting.com

Ann D'Lima
Development Policy Analysis Division
United Nations
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-3982
Fax:
E-mail: dlima@un.org

Maximo Eng
Department of Economics & Finance
St. John's University
8000 Utopia Parkway,
Bent Hall - Room 391
Queens, New York 11439, USA
Tel: (718) 990-6419
Fax: (718) 990-1868
E-mail: vroulisf@stjohns.edu

Byron Gangnes
Department of Economics
University of Hawaii at Manoa
2424 Maile Way, Saunders 542
Honolulu, HI 96822, USA
Tel: 808-956-7285
Fax: 808-956-4347
E-mail: gangnes@hawaii.edu

Cordelia Gow
Development Policy Analysis Division
United Nations
S-2510
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-3929
Fax:
E-mail: gow@un.org

Thomas Helbling
Research Department
International Monetary Fund
700 19th St., NW
Washington, DC 20431, USA
Tel: 202-623-6051
Fax: 202-623-6343
E-mail: thelbling@imf.org

Dawn Holland
DESA
United Nations
405 E 42nd Street
Room S-2589
New York, NY 10017, USA
Tel: 212-367-4924
Fax:
E-mail: hollandd@un.org

Pingfan Hong
Development Policy Analysis Division
United Nations
S-2522
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-4701
Fax: 212-963-1061
E-mail: hong@un.org

Elena Hoyos
Center for Economic Forecasting of Mexico (CKF)
P.O. Box 38521
Philadelphia, PA 19104, USA
Tel: 215-219-6214
Fax:
E-mail: info@ckf-forecasting.com

Robert Kaufmann
Department of Earth & Environment
Boston University
675 Commonwealth Ave.,
Boston, MA 02466, USA
Tel: 617-353-3940
Fax: 617-353-8399
E-mail: kaufmann@bu.edu

Matthias Kempf
Development Policy and Analysis Division
United Nations
S-2504
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-4787
Fax: 212-963-1061
E-mail: kempf@un.org

Hung-Yi Li
Development Policy Analysis Division
United Nations
S-2503
405 E 42nd Street
New York, NY 10017, USA
Tel: 917-367-9008
Fax:
E-mail: lih@un.org

Roberto Mariano
Department of Economics
University of Pennsylvania
3718 Locust Walk
Philadelphia, PA 19104-6297, USA
Tel: 610-642-2729
Fax:
E-mail: mariano@econ.upenn.edu

William Meyers
Food and Agriculture Policy Research Institute
University of Missouri-Columbia
101 Park de Ville Dr., Suite E
Columbia, MO 65203, USA
Tel: 573-882-9717
Fax: 573-882-3958
E-mail: meyersw@missouri.edu

Franziska Ohnsorge
The World Bank
1818 H St. NW
Washington, DC 20433, USA
Tel: 202-473-2807
Fax:
E-mail: fohnsorge@worldbank.org

Suleyman Ozmucur
Department of Economics
University of Pennsylvania
3718 Locust Walk
Philadelphia, PA 19104-6297, USA
Tel: 215-898-6765
Fax: 215-573-2057
E-mail: ozmucur@econ.upenn.edu

Ingo Pitterle
Development Policy and Analysis Division
United Nations
S-2631
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-367-9552
Fax:
E-mail: pitterle@un.org

Hamid Rashid
Development Policy Analysis Division
United Nations
DC2-2384
2 United Nations Plaza
New York, NY 10017, USA
Tel: 212-963-1806
Fax:
E-mail: rashid12@un.org

Sebastian Vergara
Development Policy Analysis Division
United Nations
S-2526
405 E 42nd Street
New York, NY 10017, USA
Tel: 212-963-4745
Fax:
E-mail: vergaras@un.org

Sergio Vieira
Development Policy and Analysis Division
United Nations
S-2514
405 E 42nd Street
New York, NY 10017, USA
Tel: 917-367-9724
Fax:
E-mail: vieiras@un.org

Carl Weinberg
NYU and High Frequency Economics, Ltd.
100 Summit Lake Drive
Valhalla, NY 10595, USA
Tel: 914-773-2121
Fax:
E-mail: carl@hfetoday.com

Jing Zhao
University of Missouri
200 Mumford Hall, #324
Columbia, MO, 65211, USA
Tel: 573 355 7991
Fax:
E-mail: jzm95@mail.missouri.edu

Andres Cardenas
METROECONOMICA
Ed. Manzanarez 11, PH,
Calle manzanares Este, Urb. Manzanares
Caracas 1080, VENEZUELA
Tel: 58-212-941-5848
Fax:
E-mail: andres.cardenas1@gmail.com

Cristina Rodriguez
METROECONOMICA
Edif.Manzanares 11, PH
Calle Manzanares Este. Urb. Manzanares
Caracus, Edo.Miranda 1080, VENEZUELA
Tel: 58-212-941-5848
Fax: 58-212-941-7806
E-mail: lcrodriguezb@yahoo.com