



United Nations
Department of Economic and Social Affairs

Project LINK Meeting

Oslo, Norway
2-6 October 2000

**Report of the Fall 2000 Meeting of the Expert Group on
The World Economic Situation and Prospects
(Project LINK)**

Economic Assessment and Outlook Branch
Development Policy Analysis Division

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I. Introduction

The Fall 2000 meeting of the Expert Group on the World Economic Situation and Prospects (Project LINK) was held in Oslo, Norway, from 2-6 October 2000. The meeting was organized by the Project LINK Research Centre at the University of Toronto, Canada and hosted by Statistics Norway under the direction of Ådne Cappelen, Director of Research. More than 100 participants from over 50 countries, as well as representatives from international agencies, attended the meeting.

The agenda for the meeting focused on three broad subjects: (1) a review of the outlook for growth in the world economy and its main economic regions, and the implications of current global economic trends in shaping the future possibilities for world economic growth; (2) studies of global development trends and policy issues; and (3) technical questions relating to forecasting world economic trends and assessing current issues and trends. Several sessions were devoted to each of these areas, with a number of papers presented at each session.

The agenda, list of participants, and list of papers presented at the meeting are given in the annexes. Further information about the meeting and assess to many papers presented may be gained from the Project LINK web sites at the United Nations (<http://www.un.org/eas/analysis/link>) and the Institute for Policy Analysis at the University of Toronto (<http://www.chass.utoronto.ca/link>).

In his opening remarks, Professor Lawrence Klein (University of Pennsylvania, United States) welcomed the participants to the meeting.

II. The World Economic Situation and Its Prospects

The first item on the agenda was the current outlook for the world economy and its main regions. All assessments of the pace and distribution of world economic growth presented under this agenda item point to a further increase in the aggregate level of activity in the world economy 2001, following a surprisingly strong performance in 2000.

The prospects for world economic growth

The first session, **World Economic Outlook**, under the Chairmanship of Mr. Ådne Cappelen (Statistics Norway, Norway), the Expert Group reviewed the world economic outlook as it is assessed by main United Nations agencies.

In his presentation on "*The LINK World Outlook*", Mr. Jozef van Brabant (United Nations) pointed out that world economic growth continued to accelerate in 2000 accompanied by a very marked expansion of international trade (see Table 1). He noted that the current recovery has been under way for almost two years, and that the acceleration stage of the upswing seemed to be coming to an end. Among the forces that have changed the environment for world growth are high oil prices and interest rates, taut labour markets that could ignite a cycle of wage and price increases, unsustainable fiscal and current-account imbalances, instabilities in financial

and foreign exchange markets, tighter lending policies by financial institutions and a continuing need for structural reforms. As a result, the focus of macroeconomic policies in many countries has been shifting from supporting a rapid economic recovery to stabilizing the expansion, and the challenge before policy makers worldwide is to successfully make this transition.

Mr. Van Brabant also pointed out that, in terms of dynamics, the world economy appears to have found a new equilibrium in the face of two global supply shocks: a positive supply shock of the still ongoing revolution in information and communication technology (ICT) and a negative shock of high oil prices. A widening of the productivity boost from the ICT revolution to a broad range of countries could provide a substantial lift to the potential growth of the world economy over the longer-term. On the other hand, the high level of oil prices poses a threat to global economic growth. The outlook for the world economy therefore depends to a large extent, Mr. Van Brabant concluded, on how policies in the global economy deal with these two developments.

**Table 1. Forecasts for world economic growth and international trade
2000-2002**

(Annual percentage change)

	October 2000 forecasts ^a		
	2000	2001	2002
Gross world product	4.1	3.6	3.6
Developed market economies	3.7	3.1	3.0
Developing countries	5.6	5.5	5.7
Latin America and the Caribbean	3.9	4.0	4.8
North Africa	4.1	5.9	5.4
Sub-Saharan Africa (excl. South Africa)	4.5	3.8	4.9
South and East Asia	6.6	6.0	6.1
China	8.4	8.5	8.0
Western Asia	4.7	4.9	4.1
Economies in transition	5.3	4.2	5.0
World export volume	10.4	7.7	6.6
World export prices (all goods)	0.8	2.7	4.2

Source: Economic Assessment and Outlook Branch of the Development Policy Analysis Division of the United Nations Secretariat.

^a Pre-meeting forecasts.

Mr. Hans Timmer (World Bank) presented his agency's assessment of the prospects for the world economy, entitled *"The World Bank Global Economic Prospects"*. In his agency's view, growth in the world economy is at a cyclical peak, but there are tensions over both the short- and the long-term that could slow its expansion significantly. In the short-term, capacity limits are showing up in the oil market and the magnitude of the current account deficit of the United States that can be financed is nearing its upperbound. With regard to the latter development, the size of United States current-account deficit was now some 4 per cent of Gross Domestic Product (GDP), representing some 8 per cent of world saving. If capital inflows into the United States were to reverse, there could be a major fall in the value of the U.S. dollar and a significant risk to the economy's continued expansion.

In the longer-term, the maintenance of rapid growth in the economically advanced countries depends on continuing on the path of transformation to the "new economy" in the case of the United States, the success of the reform process in Europe, and the adaptation by Japan to a lower long-run growth path. For developing countries, long-run growth prospects depend on increased openness, capital inflows, and reforms leading to greater competition. The decade of the 1990s had seen increased regional trade integration and lower tariff rates in these countries. While these were important reforms leading to increased openness and competition, at the same time they had increased tensions due to associated adjustment problems.

The outlook presented by Mr. Torsten Sløk (International Monetary Fund), *"The IMF International Economic Outlook"*, was based on the *World Economic Outlook* issued by the International Monetary Fund (IMF) in October 2000. Forecasts in the *WEO* were based on several assumptions: Unchanged fiscal and monetary policies, a world oil price of \$26.50 in 2000 and \$23 in 2001, and purchasing power parity conversion factors rather than U.S. dollar exchange rates. At 4.7 per cent for 2000, he noted that this recent forecast for world economic growth had been revised upward by ½ per cent from the previous assessment, and that the forecast for 2001 had been similarly raised from an increase of 3.9 per cent to one of 4.2 per cent. With regard to the current upturn in world economic activity, Mr. Sløk commented that a comparison of the slowdowns of 1978, 1982, 1991 and 1998 showed the recent downturn to be much milder and that subsequently growth resumed quicker and more forcefully than in the past 30 years while inflation remained low. With regard to the present upturn, Mr. Sløk highlighted four risks to its continuation: (1) whether the present high level of oil prices is temporary or permanent; (2) how present external imbalances are resolved; (3) how successful monetary policy can be in the context of the "New Economy"; and (4) the possibility of imbalances leading to volatility and spillovers into emerging markets.

Ms. Delia Nilles (Université de Lausanne, Switzerland) introduced and led the discussion of forecasts of world economic growth prepared by other international agencies and national research centres.

The first assessment, *"The OECD International Economic Outlook"*, was given by Mr. Pete Richardson (Organisation for Economic Co-operation and Development). He began his presentation with a review of OECD baseline assumptions on the exchange rates of major currencies and expectations on the oil prices: average dollar/yen exchange rate is 109.4, average

dollar/euro exchange rate is 1.10, average oil price is expected to decline to \$23 - \$25 per barrel by the end of the year. He also pointed out that in the OECD outlook fiscal policies were expected to be generally neutral, with some easing in Europe.

In this forecast, countries in the OECD group are expected to grow by 4 per cent in 2000, with the expansion slowing in 2001. Combined with the strong recovery outside the OECD area, this will push gross world product (GWP) growth up to 4 per cent in 2000. The growth of GWP is accompanied by strong growth in world trade – 10.5 per cent in 2000 in real terms, slowing to 5 per cent in 2001. Given tight monetary policies, inflation in OECD area should register about 2 per cent.

In terms of developments in the three major areas of the world – the United States, the European Union and Japan – Mr. Richardson mentioned that the OECD forecast indicated that the American economy will register 5 per cent growth in 2000, which is considered to be above potential. This is forecast to be followed by 3 per cent growth in 2001, as the baseline scenario assumes a soft landing of the United States economy. This latter growth rate is accompanied by some acceleration in headline inflation, up to 2.3 per cent; core inflation, however, remains low. Among other main characteristics of the United States economy, Mr. Richardson mentioned a positive, but diminishing output gap, a high but stable current account deficit about 4.5 per cent of GDP, and a growing fiscal surplus with a stable primary balance. The main question about the prospects for the United States economy is whether its potential for long-term growth has really shifted up or whether it will return to a slower long-run growth path.

On the European economies, Mr. Richardson presented the following scenario: GDP will increase in the European Union by 3.5 per cent in 2000, with growth slowing in 2001 in parallel with the slowdown in United States growth. The output gap in Europe is positive and the employment situation continues to improve. Inflation, however, is picking up, but stays around 2-2.5 per cent. Current account is in small surplus – about 1 per cent of GDP – and fiscal deficit is declining. In Mr. Richardson's view, the prospects for the European economy depend on how broad-based the underlying growth is. In this regard, it is not clear how the prospective appreciation of the euro will affect inflation; much depends on monetary policy stance. Mr. Richardson found current policies of fiscal easing in Europe to be inappropriate under the circumstances.

Turning to the Japanese economy, the speaker said that it is difficult to interpret recent data for Japan. However, the outlook for economic growth has been revised for 2000 from an increase of 1.7 per cent to an increase of 2.2 per cent. The output gap in Japan is negative, the country experienced deflation, while the current account is in surplus. The prospects for the Japanese economy depend on how solid the recovery is. Given the low interest rate and expectations of a rebound of growth, there is little scope for monetary easing. Nevertheless monetary stance should remain easy. At the same time any further fiscal stimulation has to be balanced against the need for stabilization.

Concluding his presentation, Mr. Richardson stressed that there is a possible upside risk for global growth. World growth today is balanced by trade linkages and is stronger than it has been in a decade. But it remains unclear how inflation would react if growth were inordinately

strong with a sharp rise in commodity prices. According to a simulation conducted using the OECD macroeconomic model, inflation could accelerate by 3 per cent if world economic growth exceeded its potential by 1.2 to 3.4 per cent in 2000 and 2001.

Mr. Ray Barrell (National Institute of Economic and Social Research, United Kingdom) presented the “*NIESR International Economic Outlook*” for 2000 and 2001. In this assessment, accelerated world growth is registered in 2000, with pick-up in all major regions, in particular, the United States and the European Union. GWP is expected to rise by 4.6 per cent (on purchasing power parity basis) in 2000, OECD growth is expected to be 4 per cent, with growth in the euro area at 3.6 per cent. Economic activity has recovered rapidly in East-Asian economies. The volume of merchandise trade is expected to increase by 10.5 per cent in 2000. To a large extent, this global recovery occurred as the result of the coordinated loosening of monetary policies after the East-Asian crisis which boosted private sector demand. At the same time, a diversity of the growth patterns can be observed across main regions: United States growth is driven by technological change while European Union growth is driven by external factors, particularly, the weak euro.

Fears of recession have now replaced concerns about possible inflationary pressure. Inflation accelerated as monetary policy was loosened in 1998, which helped to avoid a financial collapse but raised liquidity. Consequently, strong growth and rising inflationary expectations resulted in a tightening of monetary policies. Meanwhile, oil prices rose by 50 per cent in real terms. In the case of the United States, GDP is expected to increase by about 5 per cent in 2000 – well above the trend of long-term potential growth. It should be taken into account, however, that the accounts system was changed - new weighted index numbers are used and new elements are included in output (for example, software) in the second half of 1990s. The pattern of United States growth has also changed – consumption has been very strong, real wealth has risen significantly, and equity prices have been strong (recent falls had a very minor impact). Still, there is a risk of an equity market correction in the United States with possible spillovers to the rest of the world. United States current account is currently in deficit.

Mr. Barrell noted that European Union growth also accelerated from 2.3 per cent in 1999 to 3.6 per cent in 2000. However, the major sources of this growth are relaxed monetary conditions (i.e., weak exchange rate) combined with strong external demand – as the United States is growing strongly. Growth of domestic demand in Europe, in contrast, fell in 2000. In terms of productivity growth, Europe is lagging behind the United States. Therefore, the better budgetary positions in 2000 should be viewed as cyclical and not structural; however, some European states are enacting significant tax reductions.

In concluding his presentation, Mr. Barrell underlined that there is a significant risk of higher inflation. External demand is high both in the United States and in the European Union, raising capacity usage. The weak euro also feeds higher prices unless the structure of the economy has changed. As output is high and spare capacity low, Mr. Barrell opposed policies of further tax reductions.

In the final presentation, Mr. John Walker (Oxford University, United Kingdom) reviewed “*The OEF International Outlook*”. This assessment confirmed the expected slowdown

in the world economy next year as a baseline by many forecasters, but his analysis highlighted significant upside risks. In particular, he mentioned that China has a high potential for growth, fueled by potential membership in the World Trade Organization (WTO) and ongoing inflows of foreign direct investment (FDI). Countries of South-east Asia are on a strong growth track, as their competitiveness increased after the depreciation of nominal exchange rates of their currencies during the Asian crisis. Generally, Asia is expected to grow strongly in 2001.

Concerning economic growth in the United States, Mr. Walker said that the rate of United States productivity growth exceeded the rate of increase in wages, and therefore inflation remains low. At the same time, the composition of investment changed in the United States, with investment in new technology growing sharply. In Europe, in contrast, investment remains weak, despite an export-driven recovery.

On the weakness of the euro, Mr. Walker supported the view that there can be different explanations of euro depreciation, among them the credibility of the European Central Bank (ECB), concerns about external shocks, and strong United States growth. On the vulnerability of United States external balance, the speaker argued that the United States current account is not in as bad a shape as presented, since there are serious problems of measurement. To support this view, he referred to the very large world current account discrepancy, as measured by different institutions (OEF, OECD, IMF).

The outlook for major world economic regions

The short-term economic outlook for different world regions was the subject of a number of sessions.

Developed economies

Mr. Muthi Samudram (Global Economics, Malaysia) was in the chair and led the discussion of **Regional Economic and Policy Issues: North America, Japan and Europe**.

In his review of the outlook for *North America*, Professor Klein agreed with several participants that world economic growth in the near-term depends to a great extent on the performance of the United States economy. In his view, the United States economy is heading toward a “soft landing”, but the possibility of a significant downturn cannot be ruled out. Professor Klein reviewed a list of indicators that summarize the recent performance and current state of the United States economy: a record long expansion, now spanning 114 months; increases in GDP that have recently exceeded potential growth; equity prices that have been flat during 2000; household consumption spending that has been high and rising, but has generated a negative saving rate, although some slowdown in consumer spending has occurred recently; generally high energy prices as the country enters its winter season with low inventories; trade deficits that have been large and growing; productivity that has been rising but accompanied by some increase in the inflation rate; the reduction in military spending that has taken place during the last decade has now ended, with some possibility for increases in the future; and a large budgetary surplus with disagreements on how to spend it and what its future size might be. Professor Klein saw no sign of an end to the current expansion.

With regard to the outlook for economic growth in the United States, Professor Klein believed that tax cuts as proposed by the presidential candidates of the major political parties, although different in amount, would provide a stimulus to the United States economy in the next few years. He also believed that the current rise in productivity would be likely to continue, owing to increasing returns to scale in the American economy resulting from mergers and acquisitions in the corporate sector. The latter are to some extent related to the ICT revolution that has made corporate restructurings possible. In the debate on the nature of the rise in productivity, Professor Klein stood by the secular view. But he also noted some signs of a softening in the economy, such as the slowdown in corporate profit growth, and believed that trade deficits cannot increase forever — the high growth of imports of United States will end at some point and the dollar will get realigned when capital inflows slow down or reverse.

Professor Thomas A. Wilson (University of Toronto) presented his assessment of the *Canadian economy*. In his view, the second half of 2000 would register lower growth than the first half, but growth for the year as a whole should average at least 4.6 per cent. For 2001-2003, GDP growth is forecast to be a bit more than 3 per cent on average each year, which should be sufficient to bring the unemployment rate gradually down into the low 6 per cent range. The consumer price inflation (CPI) 'headline' inflation is expected to have a bit of a rough ride during the rest of 2000 and in 2001 as the current energy-price shock passes through the economy. However, since the Canadian economy has not exceeded its growth potential, the core inflation rate has remained largely unaffected and the headline rate should fall back below 2 per cent in 2002 and 2003. He expects the Bank of Canada to raise interest rates one more time, probably in the first half of 2001.

Professor Wilson pointed out two issues in his presentation that dominate the federal policy agenda in Canada: the potential contribution of the 'New Economy' to economic growth and the allocation of the large and growing federal surplus. If Canada were to replicate the experience of the United States economy over the next four years, namely, the ICT sector driving an acceleration in productivity growth, the impact on Canada's potential growth would be somewhat smaller because the computer-manufacturing industry in Canada accounts for a smaller percentage of total output, and because software investments are treated differently in the Canadian national accounts. He estimated that the possible acceleration of Canada's potential growth from ICT investments could lie in the 0.4 - 0.8 per cent range.

Professor Kanemi Ban (Osaka University) presented the economic outlook for *Japan* for 2001. He was of the view that the Japanese economy has been recovering gradually, as evidenced by the fact that real GDP growth has been positive for two consecutive quarters during the first half of 2000, following a decline in the second half of 1999. Specifically, the recovery in private demand has been gaining strength, though the labour market remains weak and the unemployment rate high. Meanwhile, corporate profits have been improving markedly and so has corporate confidence. Concerned about the strength and durability of the recovery, the Government has been planning to propose a supplementary budget for fiscal 2000. But in Professor Ban's opinion, it would not be necessary, given that the ratio of long-term government debt to nominal GDP hovered above 110 percent. The Bank of Japan recently decided to end its

zero interest rate policy by raising the overnight call rate by 0.25 per cent. He expected interest rates to rise further.

In Professor Ban's forecast, GDP growth in 2000 is expected to be 1.6 per cent and 2.1 per cent in 2001. Widespread new digital technologies such as mobile phones and personal computers, and recently released new models of automobiles, have been stimulating private consumption expenditure. He forecast business fixed investment to grow by 4.5 per cent in 2001. Both exports and imports should increase. However, he did not project a fall in the unemployment rate. Professor Ban also expressed concern about the impact of the recent rapid increase in crude oil prices, but noted that domestic wholesale prices had remained mostly unchanged, mainly due to a decrease in prices of electrical machinery. Nevertheless, some inflationary pressures are expected in 2001.

Professor Peter Pauly (University of Toronto, Canada) reviewed the current economic situation in *Western Europe* and its prospects for 2001. He pointed out that all recent consumer and business indicators signaled that a strong recovery has been underway with a preliminary estimate of the increase in GDP in 2000 of 3½ per cent and a forecast for the same rate of increase in output for 2001. He predicted strong expansion in exports and consumption, with a less robust increase in investment, implying that productive capacity would expand only slowly. Consequently, capacity utilization has been rising steadily to a relatively high level.

The expansion has brought with it an increase in employment at an annual rate of 1½ to 2 per cent, the fastest pace in many years. Fundamentals in European Union labour markets have changed on both the demand and the supply side. The unemployment rate contracted from 12 per cent to 10 per cent of the labour force. He expected it to decline to 8 per cent in the medium-term. Youth unemployment, which is particularly high, dropped from 23 per cent to 20 per cent. On the euro, Professor Pauly pointed out that the fundamentals indicate the value of the currency should appreciate, though he did not specify when and by how much.

Professor Pauly saw fiscal policy as one of the major policy challenges in Western Europe. He stressed that the strong cyclical expansion presented an opportunity to push for reforms and structural adjustments. Germany, for example, has reduced income taxes and France business taxes. There is a danger of reducing taxes too much as the debt burden in many countries remains high. Another issue is to what degree and how quickly will labour market rigidities be removed. Finally, there is the question of how much impact the "new economy" will eventually have on European economies. The size of these effects, he noted, depends on the size of the competitive and research and development sectors in the European economy. In some sectors, such as wireless communications, Europe is already a world leader. One sign of the importance of these effects has been the recent strong increase in cross-border merger and acquisition activity.

Economies in transition

The current outlook for the economies in transition in *Central and Eastern Europe* was summarized by Mr. Franjo Štiblar (Ekonomski Inštitute Pravne Fakultete, Slovenia).

Mr. Štiblar pointed out that a favourable external environment and surge in exports should allow all countries of the region to register positive economic growth in 2000. However, the rate of growth of real GDP in the European economies in transition still remains slower than that currently reported by many developing countries. Some economies in transition in the southern part of Europe are likely to grow at a higher rate, but from a lower base. In many of these countries, growth in 2000 was accompanied by higher than expected inflation (partially due to the oil prices, as the use of oil in the region is intensive and inefficient) and some improvement in external balances. The pace of economic growth in 2000, about 4-4½ per cent for the region as a whole, is expected to continue through 2001, with some deceleration in inflation by about 1 per cent.

In his view, the recent events in Yugoslavia could exert a positive external shock to South-eastern Europe. He stated that though the sub-region is still a long way from political stability, economic progress can be made in the short-term. As an example, the speaker mentioned Bosnia and Herzegovina, where the economic situation has been improving despite political uncertainty.

With regard to risks to the economic situation in the region, Mr. Štiblar mentioned that among possible upside risks is prospective membership by some countries in the European Union as well as the potential membership of Croatia in the WTO and Slovakia in North Atlantic Treaty Organization (NATO). The region should also benefit from progress in structural reforms in Russia and Ukraine, and from any increase in foreign capital flows to these countries. Among downside risks is a sharp increase in oil prices, which could adversely affect almost all economies in transition, with the exception of Russia. Another problem is the depreciation of the euro against U.S. dollar, since most of the export revenue of the economies in transition is euro-denominated; an increase in labour costs; and higher interest rates in international capital markets.

Developing countries

Prospects for developing countries were assessed at a session devoted to the **Regional Outlook and Policy Issues: Asia and Latin America**, chaired by Mr. Adolfo Castilla.

Three reviews of the outlook for *Asia* were presented at the meeting. In the first, Mr. Malcolm Dowling (University of Melbourne, Australia) presented the short-term economic forecast for Asian developing economies. Mr. Dowling stated that most countries in the region are on a rapid economic growth track. At the same time, some residual effects of the international financial crisis on the financial and corporate sectors have yet to be overcome. This factor, combined with the high degree of dependence on the external environment, complicates any assessment of the sustainability of the ongoing recovery over the medium-term.

Asian economies benefited from strong global growth, as demand for their exports, for electronics in particular, increased sharply in 1999-2000. However, a tightening of monetary policies in the developed countries, combined with weakness in the financial sector in most Asian economies, created a liquidity crunch in Asia. Consequently, credit to the private sector fell during the first half of 2000 in several countries and there was slow growth in money supply.

Given limited extension of credits to the private sector, some companies have tried to raise funds through the stock market. This situation is expected to improve, however, as rapid shifts from current account deficits to surpluses in 1999 and 2000 will inject liquidity into the system.

On the other hand, the Asian crisis increased the importance of fiscal policies in the region, as many countries tried to use expansionary policies in the aftermath of the crisis to fuel domestic demand. However, as corporate revenues and personal income taxes shrank after the crisis, governments resorted to public borrowing to cover this deficit-spending. Combined with attempts to recapitalize the domestic banking sector, this borrowing adversely affected public finances. Much of this additional funding has been raised overseas, increasing external debt. In addition, a rising share of non-performing loans exerts pressure on fiscal balances.

Speaking on the prospects of the regional economies, Mr. Dowling stressed a strong trend towards the production of high value-added products. For this purpose, FDI is crucial. However, FDI inflows into the region remain less than satisfactory and the rate of FDI approvals fell in 2000, in China and Indonesia in particular. A large part of the FDI flows is spent to cover debt repayment.

On the prospective effect of the new economy in the region, the speaker listed several factors that should be in place: communications infrastructure, proficient labour force, transparency in business operations, and deregulation of ICT industries. Therefore, it is essential not only to maintain large inflows of FDI, but also to stimulate domestic research and development. However, research and development expenditure in the region remains inadequate.

A major risk to the region, as seen by the speaker, is the possible impact of a “hard landing” in the United States. According to forecasts, imports from Asia will increase by 12.2 per cent in 2001 if there is a soft landing in the United States. Should there be a hard landing, however, a dramatic decline in Asian imports could occur, followed by a rise of only 5.5 per cent in 2002. Mr. Dowling noted that one positive factor for the region is the recovery in Japan. If it is sustainable, then Japan can partially offset the United States role of the export market.

Recent developments and short-term prospects for the Asia-Pacific region were also reviewed by Mr. Azizul Islam (Economic and Social Commission for Asia and the Pacific). Mr. Islam noted that the current estimate of growth prospects for Asia was revised upwards at the beginning of the year by 0.5 to 2 percentage points, and the region’s economic growth is expected to be stronger than in 1999. There are several reasons underlying these expectations. Among them are the continued positive impact of the fiscal stimulus packages implemented by Governments in 1998-1999, the continued growth in exports, a low inflationary environment with the possibility of monetary easing, some progress in financial and corporate sector restructuring, and the modest return of foreign capital flows.

Mr. Islam described the main developments in the region as being positive. The initial recovery after the crisis, driven by fiscal stimulus packages, has been replaced with export-led growth. Exports grew sharply. On the domestic side, consumer demand has improved. At the same time, price developments are satisfactory – inflation in the region remains low with declining interest rates. The credit crunch has eased, except possibly in Indonesia.

However, the speaker stressed, some areas of concern remain. In particular, the recovery in Japan is accompanied by an accumulated increase in public debt and the abandonment of the zero interest-rate policy. The entire Asian region remains highly dependent on the performance of the United States economy. Problems still exist in the financial sector and many countries have structural fiscal and external deficits. Little progress has been made in corporate-sector restructuring, as reflected in the recent decline and volatility of the stock market. With the exception of the Republic of Korea, domestic investment hardly picked up in the region.

At the international level, Mr. Islam noted that the impact on the world economy of the sharp increase in oil prices has adversely affected the region, where most countries are net oil importers. Any increase in oil prices leads to higher production costs, which undermines competitiveness and exerts inflationary pressures. This may force governments to tighten policies with an adverse effect on economic growth. In addition, the oil-price increase worsens the fiscal situation and undermines political stability.

Finally, Mr. Rajiv Kumar (Asian Development Bank) presented an overview of the Asian economies as assessed by his organization. Mr. Kumar noted that the Asian crisis forced the Asian Development Bank (ADB) to monitor economic events more frequently. Available data show that economic growth has now gained momentum in all sub-regions within Asia. According to recent projections prepared by the ADB, developing countries in Asia will grow by 6.9 per cent in 2000 with inflation around 2.7 per cent and deterioration of current accounts by about 1 per cent of GDP due to the increase in oil prices.

Mr. Kumar also mentioned that growth in Asia is based on the sustained growth of exports combined with further improvements in domestic demand, especially consumer demand, as investment spending still remains weak. However, the region faces several problems, among them slow progress in structural reforms and a very weak financial sector. The recent increase in oil prices affects both aggregate supply and demand, and the prospective monetary tightening in the United States and the European Union could have serious implications for monetary policy in the region. Finally, a possible “hard landing” of the United States economy would strongly affect confidence towards the region and capital flows, as these economies are heavily export-dependent.

In her presentation, Ms. Wendy Dobson (University of Toronto, Canada) summarized her paper on “*East-Asian Integration as a Determinant of the International Economic Architecture*”. She pointed out that the world trading and financial systems are changing in irreversible ways, promoting a more efficient allocation of the world’s resources. At the same time, these changes are making the international financial system more prone to crisis. East-Asian responses to these changes are potentially substantial ones that will influence the future nature and architecture of the global economic system.

Professor Dobson pointed out that the crisis in Asia was a private-sector crisis, triggered by high ratios of short-term debt to international reserves, macroeconomic policy mistakes, and creditor and debtor moral hazards. The perception that the international community did not provide sufficient support in the aftermath of the crisis stimulated a search for alternative

solutions, including exchange-rate management and trade initiatives at the regional level rather than by global multilateral institutions.

In closing her presentation, Ms. Dobson concluded that in the absence of monetary integration to reduce currency volatility, prudent macroeconomic policies and exchange-rate management could be implemented at the regional level. She argued that regional initiatives in trade and finance, aimed at achieving regional self-reliance and the development of regional contingency plans, would be a catalyst for change to the evolving global economic architecture now in place. During the discussion following this presentation, an opinion was expressed that Asia is not an optimal currency area and it is not clear whether political will is a sufficient condition for monetary and exchange rate stability in the region.

Mr. Pedro Sainz (Economic Commission for Latin America and the Caribbean) reviewed recent developments in *Latin America and the Caribbean* and prospects for the region over the short-term. He informed the Expert Group that some changes have been made in the forecasts for Latin America from the set presented earlier in the year, principally because of stronger growth in Mexico due to a rapid increase in its exports and a revival in its domestic demand. In contrast, the projection for economic growth in Argentina has been revised downwards from an increase of 2-2½ per cent to one of 1½ per cent.

In terms of economic performance, two groups of countries may be broadly identified in the region. The first comprises Central America and Chile, where the recovery after the crisis of 1998 has been strong. The other is the group of countries in the south of the region, including the Andean countries, where the recovery has been slow, mainly due to political problems and difficulties in the implementation of reforms.

Among the main issues of economic policy in the region, Mr. Sainz mentioned that most countries are moving to a flexible exchange-rate regime and that the relationship between the exchange rate and domestic inflation today is not as straightforward as it was a few years ago. Some countries managed to devalue their currencies without a marked impact on their domestic price level. Monetary policies in the region are no longer tight, and private consumption is increasing despite the reluctance of banks to lend.

A second issue of concern is the effect of rising oil prices on the region. Mr. Sainz mentioned that oil-exporting countries, such as Argentina, Columbia, Ecuador, Mexico and Venezuela, should benefit from higher oil prices. The countries of Central America, as well as Chile and Paraguay, in contrast, are net oil importers. Oil accounts for about 10 per cent of the imports of this latter group of countries. Their external balances and growth prospects are therefore affected by higher oil prices.

Mr. Sainz also noted that increases in exports were not necessarily accompanied by a marked improvement in external balances. In many countries, especially oil exporters, the trade balance is positive, but the current account balance remains negative. This may be explained by high levels of interest payments on external debt.

In the discussion, participants tried to assess the reasons and nature of the current recession in Argentina. It was noted that the country is affected by low prices for food exports and the economy acts under the constraint of its currency board. The latter prevents a devaluation of the currency in order to gain competitiveness and expansionary policies to stimulate domestic demand. Participants also discussed the issue of maintaining the currency-board regime in Argentina, and some suggested that the regime should be abandoned and monetary targeting used instead.

The global impact of higher oil prices

Mr. Carlo d'Adda (University of Bologna, Italy) presided and guided the discussion during a session on **Global Economic Trends: The World Oil Market**.

In his presentation on "*Higher Oil Prices: Reconciling Short-Run Fluctuations and Long-Run Trends*", Mr. Robert Kaufmann (Boston University, United States) noted that nominal oil prices since the 1970s have reflected fundamentals of supply and demand that drive the oil price cycle, and that the rise in oil prices over the last 18 months was caused by the rising phase of the "oil price cycle". This phase has been driven by growth in oil demand and slow increases in production by countries that are not members of the Organization of Petroleum Exporting Countries (OPEC); as a consequence, OPEC has re-established control over the marginal supply. On the demand side, oil demand grew strongly in 1999 and the first half of 2000. After increasing by about 0.6 million barrels a day (mbd) in 1999, demand increases by developed countries in 2000 have been smaller. Oil demand in the "big nine" (Canada, France, Germany, Italy, Japan, the Republic of Korea Mexico, the United Kingdom and the United States) shrank during the first quarter of 2000 before increasing less than one per cent in the second quarter. In the United States, the demand for motor gasoline has decreased 1.4 per cent, the first sustained decline since the Gulf War.

On the supply side, low oil prices that prevailed during much of the late 1990s slowed non-OPEC production, and this allowed OPEC to regain control over the marginal barrel as demand picked up. Between 1998 and 1999, non-OPEC production decreased slightly, from 38.2 mbd to 38 mbd. This small decline was associated with an ongoing decline in the United States production and the end of rapid increases in oil output from the North Sea. In the absence of further gains in non-OPEC production, OPEC re-established control over supply and could raise oil prices by manipulating available operating capacity. OPEC now is able to raise prices and production simultaneously. In April 2000, OPEC reversed its production cuts of March 1999 and increased production by 7½ per cent. However, because the increase in production was less than the difference between demand and non-OPEC production, prices continued to rise through the summer of 2000.

Because these changes were driven by market fundamentals, the LINK model was able to forecast the oil price increase. Prices are now forecast to remain near \$30 per barrel (pb) for the rest of 2000. Beyond 2000, the price of oil is expected to decline due to stagnant demand, but this price decline should be small because few producers have the capacity to alter the supply/demand balance significantly. Although the current level of oil prices will have relatively

little effect on demand, the potential for sustained increases is limited because oil prices are in the range where economic activity and demand is sensitive to price. Beyond 2003, oil prices may rise slowly because increases in overall oil demand increase the demand for oil from OPEC.

Following Mr. Kaufmann's presentation, Mr. Pingfan Hong (United Nations) made a presentation on "*Global Economic Effects of Higher Oil Prices*". He addressed five issues on the basis of tentative results derived from alternative oil price assumptions in a LINK model simulation: the direct impact of higher oil prices on the world economy, the indirect impact, possible policy responses, and the long-run equilibrium price of oil. He mentioned that although the LINK baseline forecast implies that the price of oil is likely to stay at \$30 pb for the rest of 2000 and then soften to the upper \$20 pb range in 2001, there is none the less some risk that oil prices could surge back into the upper \$30s pb range. Therefore, a study of an alternative scenario for the global economy where oil prices rise to about \$37 pb (or 35 per cent higher than the baseline) has been carried out.

Mr. Hong pointed out that in each of the last three decades, oil prices (in 1993 United States dollars) reached \$30 pb or higher and each time there was a significant slowdown in the world economy, with a recession in the major developed economies. Such a track record deserves further consideration. He then reviewed some structural changes in the world economy in terms of oil consumption and energy efficiency across countries, and pointed out that while per capita oil consumption in many developed economies has not risen in the last three decade, many developing economies have shown a continuous rise in oil consumption per head. Energy efficiency, on the other hand, has been improved in almost every economy. For the world as whole, real demand for oil has grown consistently slower than overall global demand. Nevertheless, a significant rise in oil prices, such as that observed during 2000, would definitely, if unevenly, affect the world economy in the following respect: welfare losses to consumers, a redistribution of wealth from oil-consumers to oil-producers, a lower rate of world economic growth, a higher pace of global inflation, and marked changes in external and internal imbalances across countries.

Mr. Hong stressed two major issues that he believed to be more important than the issue of welfare effects across nations. These are the indirect impact of oil price increases, such as on confidence and the policy response. He pointed out that many quantitative studies were based on comparative statics estimated changes to the real economy within the neighbourhood of the current equilibrium but a review of historical oil shocks showed that high oil prices could lead to a sudden breakdown in consumer and business confidence, which in turn would entail large declines in consumption and investment, and therefore a recession. This impact would be much larger than the immediate direct income effects on the real economy, as shown by a numerical simulation prepared for the Expert Group. On the issue of policy response, he showed monetary policy would be ineffective, at best, for this kind of supply shock, and could have some adverse effects on the real economy should central banks raise interest rates too quickly. He believed that an increase in government spending would aid low-income families when facing higher oil prices. The most effective policy, if viable, should be one directed at increasing the supply of oil. Mr. Hong concluded that oil prices cannot stay too high for too long because either supply would rise or world growth would slow down and eventually lead to a lower price. The question

for policy is how to stabilize oil prices at the “optimal level”, one that leaves both oil-exporting and oil-importing economies better off.

“*The Role of OPEC in Relation to Oil Market Trends*” was addressed by Mr. Sam Olofin (Ibadan University, Nigeria). He indicated that OPEC no longer views itself as a cartel to control the oil market. Rather, it views its role as that of a forum of producers interested in pursuing market-stabilizing policies along with three other groups of players in the oil market to ensure supply and demand stability and equitable prices. The other major players are non-OPEC oil producing countries and the major oil companies on the supply side, and the OECD countries, which account for over sixty per cent of total consumption, on the demand side. As a forum of countries depending on a single commodity (oil) for the bulk of their export earnings, OPEC seeks to optimize the earnings for its members over the long-term by ensuring that prices are kept at a reasonable level of \$22-28 pb over the long-term.

OPEC has moved over the last ten years from supplying 57 per cent of total market output of crude oil to a 30-35 per cent market share. It still controls 75 per cent of known world reserves and maintains a production capacity of 25 mbd, with about 5 mbd spare capacity, largely in Saudi Arabia. Increasing its market share would require additional investments to expand production capacity. Mr. Olofin noted that the decline in oil prices between 1997 and 1999 led to a decline in OPEC members’ foreign exchange reserves. The recent increases in prices enabled OPEC members to augment their foreign exchange reserves rather than provide funds for further investments to boost production capacity.

Recent interventions to reverse the trend in oil prices illustrate the waning influence of OPEC in the oil market compared to its dominant role in the 1970s. Reversing the trend in declining prices such as that in late 1998 and early 1999, when prices fell to about \$10 pb, would require cooperation of major non-OPEC producers to reduce supply by over 2 mbd. On the other hand, the United States’ releasing 30 millions barrels from its strategic reserves reflects an effort to reduce prices. OPEC sees a growing convergence of interests between producers and consumers and between OPEC and non-OPEC oil-producing countries. In OPEC’s view, this would ensure long-term stability in demand, supply and the price of oil.

III. Studies of World Development Trends and Policy Issues

In addition to its assessment of the short-term world economic outlook, the Expert Group also addressed questions related to the appraisal of growth performance and the analysis of policy issues. Two sessions, one on **Economic Development**, chaired by Mr. George Zanas, and one on **African Development**, chaired by Mr. Olav Bjerkholt, were devoted to the consideration of long-term development trends. Two other sessions, summarized below, focused on the assessment of international and European policy issues.

The role of institutions and economic growth

In an invited lecture, entitled “*Growth and Institutions: A Review of the Evidence*”, Ms. Janine Aron (Oxford University, United Kingdom), critically reviewed the economic literature that tries to link quantitative measures of institutions, such as civil liberties and property rights,

to the growth of GDP across countries and over time. In her review, she examined a range of influential studies in the heterogeneous literature on growth and institutions to obtain a better understanding of the linkages involved and to assess critically the sometimes strong claims made by researchers in this field. She argued that a sensible interpretation of the effects of politics and institutions on economic growth requires a more structural-theoretical approach based on a common institutional framework.

Ms. Aron pointed out that a correlation between institutional variables and growth suggests a relationship but not the direction of causality. Causality can run in both directions, from good institutions promoting growth and from higher growth leading to improved institutions. Given the poor data for African countries, the relative state of African institutions can be gauged from credit-rating measures, where coverage is fairly complete and some intra-African comparisons are possible. In the case of Africa, several measures of social characteristics reflect ethnic differences. They are highly correlated with one another, with increased ethnic diversity negatively correlated with institutional quality and service provision. Increased ethnic diversity appears to have a negative, though almost insignificant, impact on growth

In a second presentation, Mr. Cletus Dordunoo addressed the issue of “*Growth, Inflation and Foreign Exchange Rate Regimes in Sub-Saharan Africa*”. Mr. Dordunoo stated that in most Sub-Saharan African countries reforms initiated over the last decade have been aimed at creating a market friendly economy. Such endeavours bring to the forefront the importance of exchange rate regimes and the need for a currency that is stable, credible and convertible. Such a currency is expected to keep inflation low and prevent capital flight.

Mr. Dordunoo pointed out that an important issue for countries in Sub-Saharan Africa that floated their currency in the 1970s has been the extent of flexibility they should adopt in the future. In the Communauté Financière Africaine (CFA) zone, which remained a fixed exchange regime even when the economic position of the zone deteriorated in the early 1980s, the issue has been on how to allow greater flexibility while keeping key provisions of the CFA accords. In addressing this question, he reported some empirical results on the relationship between the exchange rate regime and macroeconomic performance. Among the major findings is that factor accumulation, measured by the ratio of capital formation to GDP is statistically positively correlated with the pace of economic growth. Given the endogeneity of the process, this result can be attributed to the stable investment climate that CFA zone enjoyed, at least in the late 1980s, when the exchange rate arrangement had more benefits than costs.

The development experience of Africa

In another presentation at the session on African Development, Mr. Paul Collier (World Bank) talked about “*Africa’s Development Traps and How it Might Escape From Them*”. He stated that although Africa has the lowest economic growth rate compared to other regions, it has also the highest rate of conflict. He also noted that Africa was a fast growing region in the past. During the 1960-1973 period, for example, Africa outperformed South Asia according to such indicators as output, capital formation, education and total factor productivity. But, during the 1973-1994 period, Africa’s performance deteriorated sharply. For example, output growth was

negative during this period (-0.6 per cent), while economic growth was positive in South Asia (2.6 per cent); total factor productivity also declined in Africa (-1.3 per cent) compared to 1.3 per cent increase in South Asia. He asked, “What went wrong?” According to Mr. Collier, Africa has fallen into five traps.

The partnership trap is the use of government revenues to reserve employment and privileges to a favoured group rather than providing goods and services to all people. Ethnical fractionalization has led to the support of dictatorships that get in return protection and privileges at the cost of economic growth. In his view, countries with a high ethnic diversity need democracy.

Corruption is the second trap. At present, Africa is, in his view, the most corrupt region. Thirty years ago, Africa as a region was not corrupt. In Mr. Collier’s view, Africa has become corrupted because of the deterioration of economic services that were formerly available.

The third trap mentioned by Mr. Collier is primary commodity dependence. Africa has increased its dependence on primary commodity trade rather than lessening it. It is the only region whose economic structure has not changed.

An unstable tax base closely tied to the primary commodity nature of the African economy is the fourth trap. Volatility in primary commodity prices requires a high level of management as it exposes Africa to unexpected external shocks that negatively affect economic performance. Instead, the low level of per capita income and high dependence on primary commodity trade is associated with a high level of risk of conflict. Conflict is a trap because, once a country falls into strife, it can continue for a long time.

The final trap listed by Mr. Collier is capital flight. Forty per cent of the private wealth in the region is held outside the continent.

Tax competition as an International policy issue

Professor Jack Mintz (University of Toronto, Canada) was invited to address the Expert Group by the Chairman of the session on **International Economic Policy Issues**, Ms. Mette Rolland. Professor Mintz spoke on the “*Meaning and Implication of Tax Competition*”. He first described how taxes would impact on investment and financial transactions in a closed economy, and then extended the framework for analysis of an open economy. The main investigation was whether uncoordinated taxes imposed at the international level result in greater or less taxation of capital. He stated that with the interaction of corporate income taxes and international capital flows, source-based capital taxes would result in significant distortion in the allocation of capital at the international level.

His review of the economic literature suggested that if real capital were perfectly mobile, capital taxes would disappear. However, as he commented, reality suggests that competition for real capital was less extreme than what the typical economic model implies. The problem with corporate taxation was much deeper. One issue is that taxable profits are highly mobile, leading to the “tax base flight” fiscal externality effect dominating other kinds of fiscal externalities.

Governments have been trying to protect their tax bases by imposing restrictions on measures that lead to an erosion of profits as well as reducing statutory tax rates. Meanwhile, new technological developments and novel financial transactions make it more problematical to define profits earned in one country alone. Governments have been increasing their reliance on profit-based measures of transfer prices. These kinds of administrative practices, however, require considerable cooperation among governments. Therefore, governments will need to rely more on consumption taxes, such as a value-added tax, in the future since taxes on capital income may have become too difficult to administer.

Current policy issues in Europe

At a session devoted to **European Economic Policy Issues**, Mr. Thomas Wilson led the discussion of three papers prepared for the meeting.

Messrs. Taran Faehn and Erling Holmoy (Statistics Norway, Norway) presented a study on *“Trade Liberalization and Environment: A CGE Study for Norway”*. Using a computable general equilibrium (CGE) model, their study examined the effects of the multilateral agreement on trade liberalization of the last decade on the environment of Norway. Besides the Uruguay Round Agreement, Norway has since 1994 been part of the European Economic Area (EEA) and has also signed European Free Trade Association resolution on fisheries. The study addressed the environmental implications of these treaties. Results from the study showed that, although aggregate welfare effects were modest, changes in the pattern of production, the substitution among inputs and in consumption had led to changes for several pollutants. One main effect is that increased demand for energy is met by substitution towards more polluting energy sources.

In a session on regional policy issues, Mr. Ray Barrell presented a paper he and Mr. Nigel Pain (NIESR, United Kingdom) prepared on *“Monetary and Fiscal Policy in Europe”*. In his presentation, Mr. Barrell noted that a new framework for monetary policy has arisen within Europe with the system of independent central banks and the ECB at its core. When implementing monetary policy under the new framework some confusion has arisen as to what exactly the ECB has been targeting. Fiscal policy, on the other hand, is performed by national governments, but is constrained by targets and penalties. This raises the question of whether there is room for a stabilization policy under the new framework.

With regard to monetary policy by the ECB, Mr. Barrell argued that the targeting regime was clear. In his view, it consists of two feedbacks, inflation and a nominal aggregate. It could also be viewed as a price-level targeting regime. The reasoning behind this view goes back to an old Bundesbank idea whereby the state and society have an implicit contract to pursue price level stability. Such a regime is very useful when there are negative inflation shocks, which can lead to a deflationary spiral. Price level targeting generates stabilizing expectations and supports demand. This becomes more important as the degree of nominal price inertia increases.

In the fiscal framework at the national level, there are penalties if the deficit is greater than 3 per cent. In previous work, the speaker showed, using stochastic simulations, that if countries in the region aimed for structural budget deficits of less than 1 per cent of GDP, these deficits would stay within bounds under most adverse shocks, and there would be sufficient

room for automatic stabilizers to work. He noted that discretionary policy has been common in Europe during the past 30 years. But in a number of countries, this has led to more instability because it has been pro-cyclical. Recently, government revenues have been very strong so targets have been reached, though it remains unclear whether this improvement has been structural or cyclical. To test this, a 10 per cent permanent devaluation was simulated, yielding increased growth of 1.5 per cent in the first year and a euro-area budget deficit improvement of 0.9 per cent by the end of the first year, which is similar to actual experience. So the improvement could have been due to the euro. Finally, he analysed the sources of budgetary improvements in some of the larger European countries.

In a second presentation on the euro zone, “*Asymmetry and the Problem of Aggregation in the Euro Area*”, Messrs. David Mayes and Matti Viren (Bank of Finland, Finland) also address the problem of policy formation in the European Union. They noted that it is widely acknowledged that the appropriate monetary policy for the euro area as a whole may not be appropriate for all sectors or regions; nevertheless, the policy implications of this have not been widely studied. When conducting studies of policy in the area, data utilized are usually based on aggregates, which are unweighted or based on GDP (or similar) weights. Underlying this approach is an assumption that behaviour is linear over the relevant range. They argue that there are important asymmetries and non-linearities in inflation behaviour and its transmission mechanism. If so, average behaviour as calculated from the aggregates may be misleading as a guide to policy, and the location/sector within the area experiencing the shocks may matter. Using data from the European Union and OECD countries, they estimated threshold models with two regions to calculate investment-saving, Okun and Phillips curves, and found evidence of considerable asymmetries and non-linearities, particularly in the labour market. For example, one asymmetry found was that the inflation-dampening response to high levels of unemployment was very small while low levels of unemployment could generate a significant inflationary response.

A third policy study, “*EMU and the Financial Rules*”, on the euro zone was presented by Mr. Jean-Louis Brillet (INSEE, France). Using a multi-country modelling framework, Mr. Brillet studied the consequences of the formation of the Economic and Monetary Union (EMU) by comparing the model properties that would apply under alternative regimes. The model used simulates macroeconomic linkages among six countries: France, Germany, Italy, the Netherlands, Sweden, the United Kingdom and the rest of the world. In his study, he first examined how the dynamics and amplitude of responses to different demand and supply shocks were affected by the choice of different interest rate rules and assumed exchange rate behaviour. Then, the four EMU countries (less Sweden and the United Kingdom) were linked through common exchange and interest rates, and the above tests were repeated. The main finding was that the introduction of EMU was generally stabilizing on the system.

IV. Studies in Applied Macroeconomics and Econometrics

Another session at the Expert Group meeting was devoted to technical research and the elaboration of quantitative tools involved in the study of world economic developments and trends. Presentations covered both empirical studies of particular subjects, such as the labour

market, and problems of economic model estimation and theoretical questions related to estimation methodology.

The changing nature of contemporary economies

At a session on **The New International Economy**, Mr. Jan van Heerden introduced three papers that addressed the question of the changing nature of contemporary economies.

In the first presentation, Mr. Matthew Shane (U.S. Department of Agriculture, United States) summarized a paper he and Professor Terry Roe (University of Minnesota, United States) prepared (“*The New Economy: Global Effects*”) that examined the evidence regarding the “New Economy” in the United States and explored its implications, directly as well as indirectly, for emulating the United States’ experience elsewhere in the world economy. They defined the New Economy as the benefits gained by the decline in the cost of producing knowledge, accessing the world’s stock of knowledge, and applying the knowledge relative to the cost of producing physical goods and services. In the case of the lead country, the stock of knowledge is, of course, the knowledge produced in that economy, and that may well take an extended period of accumulation before evidence of its beneficial effects on productivity (or reduction in the cost per unit of value added) becomes measurable.

As regards the exportability of the experience of lead countries to follower countries, it bears stressing that knowledge as defined is non-rival and only partially excludable, thus involving a positive externality. It is as a rule predicated on a production environment with large fixed and low to trivial variable costs – the setup for a market structure involving monopoly rents, at least in the short run.

Mr. Shane argued that the appropriate stock of knowledge has been accumulating in the United States for years with a critical threshold having passed sometime around 1995. The result has been an upward shift of between ½ and 1 percentage point in sustainable productivity levels as compared to the period 1980-1995. The fairly wide range stems from difficulties inherent in measuring the benefits of the New Economy, as carried out in growth-accounting exercises. Such benefits will accrue in the first instance to countries with direct involvement in the production of ICT rather than simply its use in production.

Among the follower economies, those that are more open and flexible are the more likely to be exposed to knowledge production, such as through FDI, though their level of temporary monopoly rents attainable may well be inferior to the margin feasible for lead economies. The authors noted, however, that FDI is not a panacea since production based on FDI-embodied knowledge will not automatically spill over to local firms in the short to medium run. Strong internal investment, where feasible augmented with FDI, in the production and export of knowledge-based industries can, in their view, provide the foundations for knowledge-based production, exports, and imports.

In the general discussion of this paper, Professor Klein inquired to what extent the authors had separated banking and financial services from the rest of the economy, as much of the ICT-based productivity gains has occurred in those sectors. Also, he argued that estimates

based on linear production functions are likely to yield biased results as most ICT-intensive activities are likely to be non-linear, more S-shaped than normally distributed over the cycle. He also stated his belief that much of the recent merger and acquisition activity has been motivated by upfront increasing returns to scale (never mind the longer-term outcome of these mergers and acquisitions (M&As), some of which have been quite disappointing).

By contrast, Messrs. Bert Hickman (Stanford University, United States) and Robert Coen (Northwestern University, United States) argued in their presentation (“*The Contemporary Economy: New, Old or Middle-Aged*”) that there has not been anything very surprising in the upturn that started in the United States in the 1990s, except high productivity growth with low inflation towards the latter part of the cycle, when compared with the previous two extended economic cycles in the United States.

Their conclusion is derived from a structural analysis of the supply side of the United States economy that investigated the relative importance of several factors affecting its recent performance, especially the strong growth with low unemployment and inflation recorded in recent years. The analysis is based on estimates of the supply blocks of the Hickman-Coen model for the United States’ economy, most recently updated with improved specifications of the age and price equations and incorporating new measures of GDP and non-farm business activity based on chained indices for prices and output. In their study, they approach the natural rate of unemployment from a different perspective than the standard non-accelerating inflation rate of unemployment (NAIRU) view by applying the Phillips curve only to the labour market, while specifying a mark-up model of price setting.

Within this framework, the authors asked a number of questions pertaining to recent “New Economy” speculations, including a shift in potential full employment output, the relationship between actual and full employment, the path of labour productivity, to what extent the labour productivity gains stem from faster technological progress, and so on. These questions are addressed from the perspective of the behaviour of the business cycle during three periods: 1960-1969, 1981-1990, and 1990-1999 (though the latter has not yet run out of steam).

Summarizing the findings, the authors presented seven points:

First, potential full employment output and actual output in the United States grew less in the 1990s than before. Second, the slight increase in productivity growth in the 1990s relative to the 1980s was more than offset by a decrease in labour supply growth. Third, there was a modest increase in full employment productivity growth in the 1990s. This was entirely due to capital deepening, which was far greater in the 1960s, since a rise in labour costs induced an increase in the capital-labour ratio. Fourth, the natural rate of unemployment has recently declined because of the fading away of earlier price and exchange-rate shocks and the concurrent aging of the population, which accounts for about half of the decline in the overall natural rate. Fifth, wage inflation in 1996-1999 accelerated to 4.6 per cent from 2.1 per cent over the earlier period. Sixth, price inflation decreased while wage inflation increased because of lower mark-ups over trend in the 1990s, largely on account of increased international competition. Finally, the decline in the natural rate compressed price inflation by about one third and wage inflation by

10 per cent; while import prices decreased price inflation by about half and wage inflation by about 5 per cent.

In short, the apparently good performance of the United States' economy in the 1990s is not unprecedented. It lags far behind the upswing of the 1960s in output, productivity growth, and unemployment rates. Only the low inflation and strong growth in the end period of the cycle appear to differ, with some 60 per cent of the lower inflation being attributable to low import costs and downward shifts in the natural rate.

Professor Pauly, in the general discussion, argued that the authors had tried to shoehorn structural change into a forty-year framework that does not really allow for structural change. Professor Klein argued that price and wage changes should be distinguished since the wedge between the two is precisely productivity. He stood by his view that there has been increasing evidence of a secular shift in the sustainable level of labour productivity in the United States and believed that this trend is being emulated in a number of countries that have recently been accumulating substantial investment in ICT-related activities.

Mr. Pete Richardson presented a paper prepared by six OECD staff members ("*The Concept, Policy Use and Measurement of Structural Unemployment: Estimating a Time-Varying NAIRU Across 21 OECD Countries*") that attempted to improve the understanding of structural unemployment in OECD countries. Their basic assumption was that, while there is no long-term tradeoff between inflation and structural unemployment, one must reckon with a more or less stable relationship between inflation and unemployment in the short to medium run. Mr. Richardson argued that the NAIRU, while conceptually unambiguous, is poorly defined for policy purposes, subject to uncertainty, and unobservable in practice.

However, in their view, some idea of the NAIRU can be obtained by inferring from observed inflation, medium-term potential growth, structural labour-market issues, and various indicators of the business cycle. It was argued that two broad approaches to tackling this question exist in the literature. The structural approach relies on structural wage/price models. The authors deem this approach to be subject to too many specification problems to be useful for their purposes. It has been especially difficult to measure the relevant structural determinants on a comparable basis over time, but especially over countries. Since the purpose of the paper is primarily comparability across OECD countries, they rejected this approach.

The other way of approaching the issue is the Phillips-curve approach. This is implicitly a reduced form of the structural model with the definition of NAIRU hinging on various definitions of expectations-augmented supply factors. However, temporary supply shocks are unlikely to affect the fundamental specification of the NAIRU. Such structural determinants as demographic factors, real interest rates, taxes, structural policies, and so on are difficult to compare across countries.

Given these difficulties, the authors estimated a short-run NAIRU, utilizing essentially past increases in prices and short-run employment gaps proportional to predicted changes in inflation. Depending on the relationship between observed unemployment, expected unemployment, and short-run gaps, temporary supply shocks can help explain why inflation may

be stable or falling. If the relationship is the reverse, the implication is that there will be speed limit effects. The authors utilize maximum likelihood techniques to estimate the fundamental relationship in combination with Kálmán filter techniques to obtain estimates of a transition equation in order to address these issues.

In evaluating the results obtained, the authors argued that their NAIRU estimates have fairly large standard errors on the order of $\frac{1}{4}$ to $\frac{1}{2}$ per cent. Further work will be needed to refine the technique and reduce this margin of error.

Model specification and applications of macroeconomics

Mr. Orhan Güvenen presided at a session on **Applied Macroeconomics** and introduced three papers dealing with estimating empirical relationships at the national level.

In the first of these presentations, entitled “*Expectations in Export Price Formation*”, Mr. Pal Boug informed the Expert Group about research he carried out with Ådne Cappelen and A. R. Swensen (all of Statistics Norway). Mr. Boug pointed out that the formation of export prices is an area in which the linear quadratic adjustment cost (LQAC) model under rational expectations may be relevant in practice. He then elaborated on LQAC model specification and data requirements, and provided some empirical results of its application (cointegration and testing the LQAC model). The results were, unfortunately, not very promising as far as the empirical success of the LQAC-model is concerned. In fact, the conditional error correction model is found to be reasonably stable in spite of substantial shocks that hit the Norwegian economy during the 1980s and 1990s. These findings rule out any expectation-based model, not only the restrictive LQAC-model, as an explanation of the data.

It was noted in the discussion that the authors’ finding could be of some interest from a policy perspective. The knowledge that export prices respond to changes in prices of competing products and domestic costs is important for modelling and forecasting the effects of changes in the exchange rate. If the true model is the conditional error correction model, then currency policies that increase the competing price will depress inflationary effects on export prices more than what would be predicted by the LQAC-model under rational expectations.

Mr. Gunnar Bårdsen presented a paper, “*Model Specification and Inflation Forecast Uncertainty*”, co-authored by Messrs. Eilev S. Jansen and Ragnar Nymoen. Mr. Bårdsen stated that recent work on monetary policy has focused on the conditional inflation forecast as the operational target for monetary policy, often referred to as inflation targeting. Canada and New Zealand are the pioneering countries of this approach; Sweden moved to inflation targeting in 1993, and since 1997 an inflation target has represented the nominal anchor of the United Kingdom economy. An explicit inflation target implies that the central bank’s conditional forecast 1-2 years ahead becomes the intermediate target of monetary policy. If the inflation forecast is sufficiently close to the target, the policy instruments (a short-term interest rate) are left unaltered. Should the forecast be higher (lower) than the target, monetary instruments are changed until the revised forecasts are close to the inflation target. Consequently, there is an unusually strong linkage between forecasting and policy analysis.

Mr. Bårdsen also explained the model's specification (dynamic incomplete competition model and Phillips curve models) together with the estimation techniques employed. Finally, he drew some empirical conclusions. The incomplete competition model forecasts annual inflation better and has a significantly smaller forecast error than the Phillips-curve model. The results showed that different specifications can be tested. There is a role for econometric model specification and evaluation in order to reduce the amount of model uncertainty.

Econometric studies of international relationships

Ms. Ofelia Templo (National Economic and Development Authority, the Philippines) presided at the session on **Applied International Economics**, where three papers were presented and discussed by the Expert Group.

Professor Stephen G. Hall (Imperial College, United Kingdom) began the session with a discussion of a new technique in cointegration analysis in his paper on "*Interest Rate Linkages: Identifying Structural Relations*". The paper attempts to shed light on the identification question in econometrics. Generally, it has been considered to be impossible to identify structural relationships without some underlying theory. But, as discussed by Professor Hall, it turns out that cointegrated systems have odd properties in terms of long-run parameters, which under some circumstances make it possible to identify their structure without theory. The intuition for this started very early in the cointegration literature and revolves around the question of statistical significance. If one variable is dropped from an equation and cointegration still exists, then that variable is not significant. But if the cointegration property is lost, then the variable must be significant.

In the context of a structural vector error correction model, the usual story is that structural parameters can be identified with the right number of theoretical conditions (or restrictions). But it is also possible to identify the structural parameters if the cointegrating properties are just right. The idea comes from work by Davidson. It concerns the notion of irreducible cointegrating (IC) vectors. These are vectors where no variable can be dropped without losing cointegration. It is this set of vectors that can help understand the structure of the relationships. If you have an IC vector and the underlying structure is exactly or overidentified, then the IC vector uniquely identifies the structural vector. However, not all IC vectors are structural, some are solved vectors, which are linear combinations of structural vectors. All structural vectors, if identified, are irreducible but not vice versa. There may be a lot of IC vectors of which some are structural, but the key is that structural vectors will be among those with the lowest variance, leading to a simple methodology for finding the structural vectors. This methodology was then explained by Professor Hall in more detail and applied to a concrete problem, specifically, testing uncovered interest-rate parity for the major industrial economies.

In the second paper, "*Testing for Long-Run Stability: An Application to the Money Multiplier in India*", Mr. Gangadhar Darbha (National Institute of Public Finance Policy, India) discussed the pitfalls in testing for stability of long-run relationships, specifically, the relationship between monetary aggregates and reserve money. Previous studies of these phenomena have used conventional tests for cointegration, and, in the case of India, have failed to find cointegration. Using the recently developed residual-based cointegration tests of Gregory

and Hansen (1996) that explicitly allow for regime shifts, he found that, contrary to earlier studies, there exists a stable, but time varying, long-run relation between measures of the money stock and reserve money in the Indian context. He also found that the observed variation in cointegrating relations is better characterized by a discrete one-time shift, rather than a gradually evolving random-walk process, attributable, possibly, to discrete changes in monetary policy.

In a study, “*News and Dollar Exchange Rate Dynamics*”, Mr. Massimo Tivegna (LUISS, Italy) described a news-based multivariate GARCH (Generalized Autoregressive Conditional Heteroskatic) estimation and simulation of the DM-dollar and Yen-dollar exchange rates, long-term yields, and the Dow Jones stock exchange Index. Twice daily frequency data (Japanese-European and American time zones) were used in the estimation exercise, and a new class of unscheduled news variables, together with scheduled macroeconomic news, were used as additional explanatory variables. The unscheduled news items were statements by policy makers, foreign exchange market reports, and comments of various kinds on economic, monetary and fiscal policy announcements, in general, major events in the world financial markets. The multivariate estimation of the mean and volatility parameters and the simulation of the complete two-zone model allowed the assessment of the relative importance of the different kinds of news, both in mean and variance, and the dynamic impulse response of exchange rates to different news-shocks.

Technical and statistical lessons for economic modelling

Mr. Aleksander Welfe (Institute of Econometrics and Statistics, Poland), in the chair, served as moderator of the technical discussion by the Expert Group on **Modelling Techniques**.

Mr. Ken Wallis (Warwick University, United Kingdom) presented the first paper in this section on the topic “*Comparing Macroeconometric Models: Lessons from the ESRC Macroeconomic Modelling Bureau*”.

Mr. Wallis’ presentation broadly covered issues related to comparative analysis of macroeconomic models. The speaker began by noting that empirical economics is often criticized for not paying enough attention to the variety of possible explanations of the phenomena under study. The same could be said about macroeconomic modelling, since differences among models are commonly observed and different models produce different results.

Since few serious attempts were made in the past to explain these differences, the establishment of the ESRC Macroeconomic Modelling Bureau was an effort to take this a significant step forward. After the establishment of the Bureau, large comparative work on econometric models has been done. Particularly, the Bureau undertook comparisons across models of the United Kingdom economy at different stages of its development—design, execution, analysis and testing.

Among the first objectives of the Bureau, Mr. Wallis mentioned, was to standardize the comparison of overall model properties in order to eliminate differences that may have resulted from setting exogenous assumptions for the simulation experiment in different ways. The

sources of important differences emerging from these standard simulations were then tracked down to the model structures. This helped not only to compare outcomes of model simulations, but also to raise questions about particular model equations.

The speaker then presented three main aspects of the development of the models—their theoretical structure, the treatment of expectations of future values of endogenous variables, and the modelling of fiscal and monetary policy variables. Underlying this work was the notion of the long-run or steady-state properties of the model. He concluded by recommending this model builders to enhance the transparency of their models and increase the exchange of information among themselves and with users. Mr. Wallis also stressed the importance of standardized experiments in econometric model comparison exercises.

A second paper in the session, “*Statistical Issues in Macroeconomic Modelling*”, was presented by Mr. Eilev Jansen (Norges Bank, Norway). The paper describes the influx of mathematical statistics into economics and focuses on an approach based on fundamental statistical concepts. The methodology advocated in the paper was illustrated by two case studies—the modelling of household sector and the modelling of wages and prices.

Problems of forecasting economic activity and consumption

A session on **Forecasting** was chaired by Mr. Byron Gangnes, who introduced the three speakers and guided the discussion.

In the first presentation, Professor Robert S. Mariano (University of Pennsylvania, United States) summarized his paper on “*Testing Forecasting Accuracy*”. Professor Mariano emphasized the importance of predictive ability for an estimated model, not only for the quality of the forecasts produced by the model but also for the adequacy of the model for policy analysis. The earlier literature took an informal approach, assessing the forecast accuracy of a model by the calculation of summary forecast error statistics. Later efforts proceeded more formally, constructing appropriate statistical tests of forecast accuracy, but under the simplifying assumptions that loss functions were quadratic in the forecast errors and that the probability distribution of the forecast errors was Gaussian and serially uncorrelated. More recent work has relaxed these assumptions and allowed loss functions to be non-quadratic and asymmetric, and for forecast errors to be non-Gaussian. These tests generally are based on large-sample asymptotic analysis, with some limited experimental studies of their size and power properties in small samples. The speaker discussed three of these recent tests.

In the second presentation, entitled “*What Do OECD Forecasts and Data Revisions Reveal*”, Messrs. Heinz Glück and Stefan Schleicher and Ms. Rosaria Catena (Austrian National Bank and University of Graz, Austria) reviewed forecasts of the OECD. They noted that the OECD has produced a semi-annual forecast, as published in its *Economic Outlook*, for many years and that these forecasts were an ideal data set in which to examine the issue of forecast accuracy. Two aspects of the question of forecast accuracy were addressed by the authors. First, could one observe an improvement in forecast accuracy over the sample period. Second, given that national income data are progressively revised as more complete information becomes available, the authors also looked to see how forecast accuracy had improved during the data

revision process. These issues were addressed by looking at measures for the dispersion of the forecast errors and cumulative residuals or CUSUM-tests of a data correction model that also serves for re-estimating the preliminary data of the national income accounts.

In the third presentation of the session, a paper by Messrs. Øyvind Eitrheim, Eilev S. Jansen, and Ragnar Nymoén (all of Norges Bank, Norway), "*Progress From Forecast Failure - The Norwegian Consumption Function*", was presented. The speaker pointed out that the breakdown of an economic model's forecast properties could be used as a powerful tool to discriminate among models. Often the model would need to be re-specified to account for data after the break, and this could be viewed as a gain in knowledge. Using the empirical modelling of Norwegian consumption as an example, he showed that the financial deregulation in the mid-1980s led to forecast failure for both consumption functions and Euler equations. In an estimation period containing the pre-break data, the consumption function was found to be the encompassing model. However, while both models' forecast performance deteriorated after the break point, the Euler equation forecast was superior in the post-break period. Re-specification led to a third model where wealth plays a central role. This model was shown to have constant parameters over an expanded sample period.

The macroeconomic modelling of economic growth

In a session on **Macroeconomic Models**, Mr. Constantin Ciupegea (Institute for World Economy, Romania) served as chair and moderator of the discussion.

Professor V. Pandit (Delhi School of Economics, India) presented a paper entitled "*Policies for Stability and Growth: Experiments with a Large and Comprehensive Structural Model for India*". First, he introduced an economic model of the Indian economy, which consists of 347 structural equations to deal with production, capital formation, price behaviour, public finance, money and banking, trade and balance of payment, private consumption and saving. Professor Pandit described experiments carried out with this model to study monetary policy, fiscal policy, and exchange-rate policy in the Indian economy. He highlighted an important, but counterintuitive, result of the study indicating that a "liberal" monetary policy may not be desirable. As a high rate of growth of the money supply would raise the rate of inflation, the real value of public investment would be eroded. Consequently, any increase in private investment would be curbed by a reduction in public investment. Therefore, Professor Pandit pointed out, the study showed that a combination of monetary policy and fiscal policy would be more effective in promoting growth with moderate inflation.

In a second presentation, Mr. Stéphane Déés (CEPII, France) presented a paper co-authored with Messrs. Loïc Cadiou (CEPII, France) and Jean-Pierre Laffargue (CEPREMAP, France) entitled "*A Computational General Equilibrium Model with Vintage Capital*". In his introduction, Mr. Déés made a comparison between two different technologies assumed in computational general equilibrium models: putty-putty technology, which assumes that the capital intensity of the production process can be changed instantaneously and without cost and a putty-clay technology, which assumes that the current technology menu is only available to newly created units of production. In his opinion, the former approach, which has been widely used in conventional models, has been a main reason for the empirical failure of many CGE

models—for example, their inability to explain medium-term movements in the share of wages in value-added observed in some European economies.

As part of his presentation, Mr. Déés presented a model of the production of goods and the demand of factors with a putty-clay technology. He noted some advantages of this specification: the irreversibility of investment is embedded in the model and firing costs can easily be introduced—leading to a more convincing foundation of the stickiness of employment observed in reality. When calibrated with French data, the model exhibits a unique solution path for reasonable values of the parameters. But he indicated that his study also showed that for high risk-averse households, the stability of the model in the original variables has not satisfied. With simulation of a permanent shift in the wage curve, the putty-clay framework provides medium-term dynamics in the distribution of income between production factors that putty-putty models lack. He concluded that, as also mentioned by other economists, the putty-clay investment framework may be the appropriate way to model factor demand in European economies.

Mr. Shashanka Bhide (National Council of Applied Economic Research, India), presented the third paper in this session, titled “*Incorporation of Regional Variations in a Macroeconometric Model for India: A Production Frontier Approach*”. The paper was co-authored with Mr. K.P. Kalirajan (NCAER, India and Australian National University, Australia).

In his introduction, Mr. Bhide mentioned that the large interstate variations in India in terms of level of development, rate of economic growth, and level of resources had been an important subject in research and policy debate. In this regard, the regional balance in development has been one of the major criteria in formulating various national policies. However, he pointed out, the assessment of economic performance at the state level has not been as systematic as at the national level, and many macroeconomic models do not deal with regional differences. Therefore, the study presented by Mr. Bhide tried to incorporate regional dimensions in a macroeconometric model for India.

In doing so, the authors adopted a production frontier approach, in contrast to the traditional production function approach. The latter approach does not examine variations in the technical efficiency of different producers while the former does. More specifically, the study applied the production frontier approach to state-level data on the output of the agricultural sector when estimating different technical efficiencies, while all other sectors were modelled at the national level.

Their study showed the importance of initial conditions of states with respect to literacy, infrastructure; and “general efficiency” for the impact that policies might have on agricultural output. The changes at the macroeconomic level influence output at the state level differentially due to differences in the extent of coverage of irrigation, crop-diversification, and factors such as general efficiency. Mr. Bhide concluded that from a policy perspective, understanding the impact of various policies at the regional level should be important inputs into the process of designing policies for the national economy.

Studies in the application of econometrics

In the session on **Applied Econometrics**, Mr. Wladyslaw Welfe (Institute of Econometrics and Statistics, Poland) introduced the speakers and guided the discussion.

At the session, Mr. Ingvild Svendsen (Norges Bank, Norway) made a presentation on "*Rational Expectations in Export Price Setting? – An Empirical Study*". In this study, Mr. Svendsen focused on two questions: the long-run determination of export prices for traditional goods produced in the private mainland Norwegian economy; and the dynamics of price movements along the long-run path, once prices have been determined. The first question was analysed within a framework that allows for imperfect competition, using a cointegration technique. The dynamics, on the other hand, are modelled according to both a backward-looking error-correction model and a forward-looking model that assumes linear quadratic adjustment costs and rational expectations. His study could not reject super-exogeneity to be present in the error-correction model, and the empirical evidence is not consistent with the rational expectations hypothesis.

Mr. Duncan Ironmonger (University of Melbourne, Australia) then presented a study on "*Long-Term Global Projections of Household Numbers and Size Distributions for LINK Countries and Regions*". He reported that global projections for household numbers and size distribution had been prepared for 144 individual countries using as an input the latest United Nations set of world population projections with three fertility scenarios and the "age-ratio Poisson" model originally developed by the author and his colleagues.

In the final paper of the session, Mr. Qaisar Farooq Akram (Norges Bank, Norway) summarized a paper entitled "*When Does the Oil Price Affect the Norwegian Exchange Rate?*". He began his presentation noting the common belief that prices of crude oil should have a significant influence on the Norwegian exchange rate. But, as he pointed out, many existing quantitative studies had failed to establish a robust relationship between these two variables. The study presented to the Expert Group, in contrast, explored the possibility of a non-linear relationship between these two variables. Using daily observations, the study revealed a negative correlation between oil prices and the value of the Norwegian currency. More interestingly, the strength of this relationship depends on whether oil prices are within the range of \$14-20 pb and on the direction of the change in prices. The relationship, for example, is strong when the prices are below \$14 pb and falling. He also tested this non-linearity with equilibrium correcting models of the exchange rate, derived from monthly and quarterly data to control for the influence of other economic variables.

Annexes

8:00PM-10:00PM **Registration/Information Desk:**

Foyer of Scandinavia Ballroom
Radisson SAS Scandinavia Hotel

Monday, October 2

9:00-9:30 **Welcome**

Opening remarks by Lawrence Klein

9:30-10:30 **World Economic Outlook**

Chair : Ådne Cappelen

- "Project LINK World Outlook"
- Jozef van Brabant, United Nations, New York
- "The World Bank Global Economic Prospects"
- Hans Timmer, The World Bank, Washington
- "The IMF International Economic Outlook"
- Torsten Sløk, International Monetary Fund, Washington

10:30-11:00 **Break**

11:00-12:30 **World Economic Outlook (cont.)**

Chair : Delia Nilles

- "The OECD International Economic Outlook"
- Pete Richardson, OECD, Paris
- "The NIESR International Economic Outlook"
- Ray Barrell, NIESR, London
- "The OEF International Outlook"
- John Walker, Oxford University

12:30-2:00 **Lunch**

2:00-3:30 **Global Economic Trends: The World Oil Market**

Chair : Carlo d'Adda

- "Higher Oil Prices: Reconciling Short Run Fluctuations and Long Run Trends"
- Robert Kaufmann, Boston University
- "Global Economic Effects of Oil Prices: A Re-Assessment"
- Pingfan Hong, United Nations

Panel Discussion

Participants: Sam Olofin, University of Ibadan
Christina Rodriguez, Metroeconomica
Others

3:30-4:00 **Break**

4:00-5:30 **European Economic Policy Issues**

Chair : Thomas Wilson

- "Monetary and Fiscal Policy in Europe"
- Ray Barrell and Nigel Pain, NIESR, London
- "Asymmetry and the Problem of Aggregation in the Euro Area"
- David Mayes and Matti Viren, Bank of Finland, Helsinki
- "EMU and the Financial Rules"
- Jean-Louis Brillet, INSEE, Paris

5:30 **Reception, Oslo City Hall**

Tuesday, October 3

9:00-10:30 **Economic Development**

Chair : George Zanas

"Institutions and Growth" (Invited Lecture)
Janine Aron, Oxford University

"Growth, Inflation and Foreign Exchange Rate Regimes
in Sub-Saharan Africa"
Cletus Dordunoo, GIMPA, Ghana

10:30-11:00 **Break**

11:00-12:30 **African Development**

Chair : Olav Bjerkholt

- "Africa's Development Traps and How It Might Escape From Them" (Invited Lecture)
- Paul Collier, The World Bank
- "Trade Liberalization in Zimbabwe - Experiences and Modelling"
- Jørn Rattsø, Trondheim

12:30-2:00 **Lunch**

2:00-3:30 **Regional Outlook and Policy Issues : Asia and Latin America**

Chair : Adolfo Castilla

- "Asia : Summary"
- J. Malcolm Dowling, University of Melbourne
- Azizul Islam, ESCAP, Bangkok
- Rajiv Kumar, ADB, Manila
- "East Asian Integration as a Determinant of the International Economic Architecture"
- Wendy Dobson, University of Toronto
- "Latin American Outlook : Summary"
- Pedro Sainz, ECLAC

3:30-4:00 **Break**

4:00-5:30 **Regional Economic and Policy Issues : North America, Japan and Europe**

Chair : Muthi Samudram

- "North America Outlook : Summary"
- Lawrence R. Klein, University of Pennsylvania
- "Japan Outlook : Summary"
- Kanemi Ban, Osaka University
- "Western Europe : Summary"
- Peter Pauly, University of Toronto
- "Central and Eastern Europe : Summary"
- Franjo Štiblar, Ekonomski Inštitute Pravne Fakultete

Evening Conference Dinner

Wednesday, October 4

9:00AM-8:30PM **Full-Day Excursion : Lillehammer**
Gather at Radisson for 9:00AM Departure

Thursday, October 5

9:00-10:30 **The New International Economy**

Chair : Jan van Heerden

- "The New Economy : Global Effects"
- Matthew Shane and Terry Roe, United States Department of Agriculture, Washington, and University of Minnesota
- "The Contemporary Economy : New, Old, or Middle-aged?"
- Bert Hickman and Robert Coen, Stanford University and Northwestern University
- "The Concept, Policy Use and Measurement of Structural Unemployment: Estimating a Time-Varying NAIRU Across 21 OECD Countries"
- Pete Richardson, Laurence Boone, Claude Giorno, Mara Meacci, David Rae and Dave Turner, OECD, Paris

10:30-11:00 **Break**

11:00-12:30 **International Economic Policy Issues**

Chair : Mette Rolland

- "Meaning and Implication of Tax Competition" (Invited Lecture)
- Jack Mintz, University of Toronto
- "Trade Liberalization and the Environment: A CGE Study for Norway"
- Taran Faehn and Erling Holmøy, Statistics Norway

12:30-2:00 **Lunch**

2:00-3:30 **Applied International Economics**

Chair : Ofelia Templo

- "Interest Rate Linkages : Identifying Structural Relations"
- Stephen G. Hall, Imperial College, London
- "Testing for Long-Run Stability : an Application to the Money Multiplier in India"
- Gangadhar Darbha, National Institute of Public Finance and Policy, Delhi
- "News and Dollar Exchange Rate Dynamics"
- Massimo Tivegna, LUISS, Rome

3:30-4:00 **Break**

4:00-5:30 **Applied Macroeconomics**

Chair : Orhan Güvenen

- "Expectations in Export Price Formation: Testing Using Cointegrated VAR Models"
- P. Boug, Ådne Cappelen, and A. R. Swensen, Statistics Norway
- "Potential Output and Foreign Trade in Small Open Economies"
- Zsolt Darvas and Andras Simon, National Bank of Hungary
- "Model Specification and Inflation Forecast Uncertainty"
- Gunnar Bårdsen, Eilev S. Jansen and Ragnar Nymoene, Norges Bank

Friday, October 6

9:00-10:30 **Modelling Techniques**

Chair : Aleksander Welfe

- "Comparing Macroeconometric Models : Lessons from the ESRC Macroeconomic Modelling Bureau (b.1983, d.1999)" (Invited Lecture)
- Ken Wallis, Warwick University
- "Statistical Issues in Macroeconomic Modelling"
- Eilev S. Jansen, Norges Bank

10:30-11:00 **Break**

11:00-12:30 **Forecasting**

Chair : Byron Gangnes

"Testing Forecasting Accuracy"
Robert S. Mariano, University of Pennsylvania

"What Do OECD Forecasts and Data Revisions Reveal"
Heinz Glück, Stefan Schleicher, and Rosaria Catena, Austrian National Bank and University of Graz

"Progress From Forecast Failure - The Norwegian Consumption Function"
Øyvind Eitrheim, Eilev S. Jansen, and Ragnar Nymoene, Norges Bank

12:30-2:00 **Break**

2:00-3:30 **Macroeconometric Model**

Chair : Constantin Ciupegea

- "Policies for Stability and Growth: Experiments With A Large and Comprehensive Structural Model for India"
- V. Pandit, Delhi School of Economics
- "A Computational General Equilibrium Model with Vintage Capital"
- Loic Cadiou, Stéphane Déés, and Jean-Pierre Laffargue, CEPII and CEPREMAP, Paris
- "Incorporation Regional Variations in a Macroeconometric Model for India: A Production Frontier Approach"
- Shashanka Bhide and K.P. Kalirajan, NCAER, Delhi and ANU, Canberra

3:30-4:00 **Break**

4:00-5:30 **Applied Econometrics**

Chair : Wladyslaw Welfe

- "Rational Expectations in Export Price Setting ? - An Empirical Study"
- Ingvild Svendsen, Norges Bank
- "Long-Term Global Projections of Household Numbers and Size Distributions for LINK Countries and Regions"
- Duncan Ironmonger, University of Melbourne
- "When Does the Oil Price Affect the Norwegian Exchange Rate?"
- Qaisar Farooq Akram, Norges Bank

5:30-6:00 **LINK Developments and Business Meeting**

Chair : Peter Pauly, University of Toronto

Annex B: List of participants

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Annex C: List of papers

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List of Papers presented at the LINK Meeting

"Higher Oil Prices: Reconciling Short Run Fluctuations and Long Run Trends" *	Robert Kaufmann, Boston University
"Global Economic Effects of Oil Prices: A Re-Assessment" *	Pingfan Hong, United Nations, New York
"Monetary and Fiscal Policy in Europe" *	Ray Barrell and Nigel Pain, NIESR, London
"Asymmetry and the Problem of Aggregation in the Euro Area"	David Mayes and Matti Viren, Bank of Finland, Helsinki
"EMU and the Financial Rules"	Jean-Louis Brillet, INSEE, Paris
"Institutions and Growth"	Janine Aron, Oxford University
"Growth, Inflation and Foreign Exchange Rate Regimes in Sub-Saharan Africa"	Cletus Dordunoo, GIMPA, Ghana
"Africa's Development Traps and How It Might Escape From Them"	Paul Collier, The World Bank
"Trade Liberalization in Zimbabwe - Experiences and Modeling"	Jørn Rattsø, Trondheim, Norway
"East Asian Integration as a Determinant of the International Economic Architecture"	Wendy Dobson, University of Toronto
"The New Economy : Global Effects"	Matthew Shane and Terry Roe, USDA, Washington and Univ. of Minnesota
"The Contemporary Economy : New, Old, or Middle-aged?"	Bert Hickman and Robert Coen Stanford University and Northwestern University
"The Concept, Policy Use and Measurement of Structural Unemployment: Estimating a Time-Varying NAIRU Across 21 OECD Countries"	Pete Richardson, Laurence Boone, Claude Giorno, Mara Meacci, David Rae and Dave Turner, OECD, Paris
"Meaning and Implication of Tax Competition"	Jack Mintz, University of Toronto
"Trade Liberalization and the Environment: A CGE Study for Norway"	Taran Faehn and Erling Holmøy Statistics Norway

"Interest Rate Linkages : Identifying Structural Relations"	Stephen G. Hall, Imperial College London
"Testing for Long-Run Stability : an Application to the Money Multiplier in India"	Gangadhar Darbha, National Institute of Public Finance and Policy, Delhi
"News and Dollar Exchange Rate Dynamics"	Massimo Tivegna, LUISS, Rome
"Expectations in Export Price Formation: Testing Using Cointegrated VAR Models"	P. Boug, Ådne Cappelen, and A. R. Swensen, Statistics Norway
"Potential Output and Foreign Trade in Small Open Economies"	Zsolt Darvas and Andras Simon National Bank of Hungary
"Model Specification and Inflation Forecast Uncertainty"	Gunnar Bårdsen, Eilev S. Jansen and Ragnar Nymoén, Norges Bank, Norway
"Statistical Issues in Macroeconomic Modelling"	Eilev S. Jansen, Norges Bank, Norway
"Testing Forecasting Accuracy"	Robert S. Mariano, Univ.of Pennsylvania
"What Do OECD Forecasts and Data Revisions Reveal"	Heniz Glück, Stefan Schleicher, and Rosaria Catena, Austrian National Bank and University of Graz
"Progress From Forecast Failure – The Norwegian Consumption Function"	Øyvind Eitrheim, Eilev S. Jansen, and Ragnar Nymoén, Norges Bank
"Policies for Stability and Growth: Experiments With A Large and Comprehensive Structural Model for India"	V. Pandit, Delhi School of Economics, India
"A Computational General Equilibrium Model with Vintage Capital"	Loic Cadiou, Stéphane Déés, and Jean-Pierre Laffargue, CEPII and CEPREMAP, Paris
"Incorporation Regional Variations in a Macroeconometric Model for India : A Production Frontier Approach"	Shashanka Bhide and K.P. Kalirajan NCAER, Delhi and ANU, Canberra
"Rational Expectations in Export Price Setting ? - an Empirical Study"	Ingvild Svendsen, Norges Bank
"Long-Term Global Projections of Household Numbers and Size Distributions for LINK Countries and Regions"	Duncan Ironmonger, Univ. of Melbourne Australia
"When Does the Oil Price Affect the Norwegian Exchange Rate?"	Qaisar Farooq Akram, Norges Bank

* Forecast-related papers

FORECASTS

COUNTRY	AUTHOR
1. Singapore	Mun Heng
2. Oxford	Adrian Cooper
3. Venezuela	Jose Barcia Arufe
4. Japan	Kanemi Ban
5. Slovak Rep.	Michael Olexa
6. Poland	Prof. W. Welfe
7. Greece	Stella Balfoussias
8. Philippines	O.M. Templo
9. Ukraine	
10. South Africa	Renee Koekemoer
11. Ireland	Central Bank of Ireland
12. Turkey	Suleyman Ozmucur
13. Denmark	Tony Kristensen
14. India	Prof. V. Pandit
15. Romania	Constantin Ciupagea
16. Bulgaria	Garabed Minassian
17. Czech Rep.	M. Klima and D. Vavra
18. China	
19. Hungary	
20. Ukraine	Valery Heyets
21. Finland	Jukka Railavo
22. New Zealand	Ashley Lienert\
23. Norway	Prof. S. Olofin
24. Slovenia	Jose Mencinger
25. Togo	
26. Mexican Economy	Alfredo Coutino
27. Costa Rica	
28. Spain	Julian Perez
29. Brazil	
30. Asia-Pacific Region	ESCAP (Mr. Islam)
31. Australia	
32. Korea	Kiseok Hong
33. Colombia	Maria A. Arbelaez
34. OECD	P. Richardson
35. Asian Dev. Economies	Malcolm Dowling
36. East Asia	Prof. Dobson
37. Taiwan	
38. Argentina	A. O'Connell
39. Italy	C. D'Adda
40. Euro Area	D. Mayes & M. Viren
41. Nigeria	S. Olofin & A. Adenikinju
42. United Kingdom	Adrian Cooper
43. Chile	Pablo Cabezas

COUNTRY REPORTS

<u>NO.</u>	<u>COUNTRY</u>	<u>AUTHOR</u>
1.	UNITED STATES	WEFA Group
2.	VENEZUELA	Cristina Rodriguez
3.	RUSSIA	Evgeny Gavrilentov
4.	GHANA	Cletus Dordunoo
5.	SWEDEN	Patrik Eriksson
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15.	SWITZERLAND	Delia Nilles
16.	UKRAINE	Valery Heyets
17.	JAPAN	Kanemi Ban
18.	SLOVENIA	F. Stiblar & J. Mencinger
19.	CZECH REPUBLIC	M. Klima & D. Vavra
20.	SLOVAK REPUBLIC	M. Olexa & J. Haluska
21.	MEXICO	Alfredo Coutino
22.	TURKEY	S. Ozmucur
23.	CROATIA	
24.	CHINA	Liping Tao
25.	NORWAY	A. Cappelen
26.	GERMANY	Elke Schafer-Jackel
27.	MALAWI	Martin Ganiza
28.	SOUTH AFRICA	Jan van Heerden
29.	FRANCE	Fabrice Pesin
30.	BRAZIL	Eustaquio J. Reis

ANNEX TABLES

Annex Table 1. Project LINK estimates and forecasts of growth in real gross domestic product, exports and imports, 1998-2002

Pre-LINK Meeting Forecasts, October 2000

Country	Annual rates of growth														
	Growth of real gross domestic product					Growth of real exports					Growth of real imports				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Industrialized countries															
Australia	4.9	4.4	3.8	2.3	3.0	-0.5	4.5	9.3	2.0	5.0	6.2	5.1	4.9	2.9	4.0
Austria	2.9	2.1	3.4	3.1	2.6	7.9	5.1	11.7	7.7	6.1	6.4	3.2	7.9	6.1	5.6
Belgium	2.1	3.9	4.5	3.9	3.2	5.9	4.4	4.4	4.8	3.6	6.7	4.7	4.0	3.2	3.3
Canada	3.3	4.5	4.6	3.1	3.3	8.9	10.0	10.5	5.0	4.2	6.1	9.4	12.8	5.7	4.1
Denmark	2.5	1.6	2.0	1.8	2.3	2.0	6.3	6.4	5.3	4.7	7.1	1.6	4.3	4.5	4.9
Finland	5.0	3.5	4.9	4.0	4.0	9.3	7.4	11.1	7.8	6.9	8.5	3.4	6.6	6.3	6.7
France	3.4	2.7	3.6	3.1	3.0	6.6	3.6	9.0	6.7	5.0	8.3	3.0	5.0	5.0	5.7
Germany	2.2	1.5	3.0	3.2	2.6	7.0	4.2	12.3	7.4	4.8	8.5	7.1	9.0	8.6	7.9
Greece	3.6	3.5	3.7	4.2	4.0	9.2	5.4	5.0	6.1	6.2	5.7	5.1	6.1	6.5	6.6
Iceland	2.5	2.3	2.2	2.3	2.3	2.7	1.9	1.5	6.8	6.7	5.8	0.1	-0.1	5.9	3.2
Ireland	7.8	7.8	8.6	5.8	5.7	21.4	12.4	15.1	12.9	7.5	25.8	8.7	14.5	8.6	8.0
Italy	1.5	1.4	2.8	2.7	2.9	3.6	-0.3	8.0	6.7	7.0	9.3	3.8	7.3	8.0	7.5
Japan	-2.5	0.3	1.4	2.2	2.9	-2.5	1.9	11.1	4.5	5.6	-7.6	5.3	8.1	3.7	7.6
Netherlands	3.0	3.2	4.8	3.6	3.1	6.4	4.6	8.6	7.9	6.2	7.7	5.4	8.3	8.7	6.1
New Zealand	-0.6	3.9	4.3	3.6	3.2	14.5	7.3	7.0	6.6	5.8	3.0	8.6	1.8	4.5	6.0
Norway	2.0	0.9	2.8	1.7	1.7	2.1	1.4	4.5	4.5	4.8	7.0	-2.4	-0.1	-1.3	1.4
Portugal	3.5	3.0	3.3	3.0	2.8	7.9	4.7	7.5	7.4	7.2	13.7	7.4	6.9	6.1	6.5
Spain	3.8	3.9	4.1	3.2	3.4	7.8	8.9	12.5	9.4	9.5	10.6	12.3	12.1	10.3	10.8
Sweden	3.0	3.8	4.4	3.5	2.8	7.4	4.7	9.4	7.2	5.4	7.3	0.8	6.7	5.7	4.6
Switzerland	2.1	1.7	2.5	1.7	1.1	10.3	-2.9	4.9	3.3	3.2	10.3	-2.9	4.9	3.3	3.2
United Kingdom	2.2	2.1	3.2	2.6	2.1	2.6	3.3	5.5	6.5	6.7	8.8	7.6	7.7	6.5	6.7
United States	4.4	4.2	5.2	3.7	3.3	2.3	2.9	8.3	9.4	8.0	11.9	10.7	12.8	7.6	6.5
Eastern Europe and former USSR															
Bulgaria	3.5	2.5	4.6	4.9	5.6	-7.6	-12.7	9.4	9.1	6.5	16.6	-12.4	4.4	0.7	3.1
Hungary	5.0	4.5	6.1	5.7	5.7	30.5	9.4	12.7	9.5	6.6	26.0	9.0	10.0	10.0	10.0
Poland	4.8	4.2	5.0	5.6	6.6	8.0	1.3	8.2	7.9	9.3	13.3	4.0	7.3	9.2	9.2
Romania	-7.2	-2.8	1.6	3.6	4.1	1.6	3.4	11.5	0.4	6.2	8.6	-7.6	7.6	3.4	5.5
Russia	-4.9	3.2	6.5	3.9	4.8	-5.8	-9.7	0.4	-1.9	-4.8	-18.8	-25.6	11.0	11.4	7.9

Annex Table 1. Project LINK estimates and forecasts of growth in real gross domestic product, exports and imports, 1998-2002

Pre-LINK Meeting Forecasts, October 2000

Country	Annual rates of growth														
	Growth of real gross domestic product					Growth of real exports					Growth of real imports				
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Developing countries															
Argentina	3.9	-3.1	1.6	2.4	3.8	8.1	-8.2	5.2	7.7	-2.0	-4.6	-20.6	0.4	5.4	13.7
Bolivia	5.5	0.6	3.7	4.1	4.1	21.0	-7.9	-5.5	5.8	14.9	-2.2	-16.8	8.8	6.1	4.0
Brazil	-0.1	1.0	3.9	4.4	5.5	1.7	29.9	4.9	18.6	15.1	-1.9	13.3	-1.1	7.4	7.9
Caribbean	4.0	4.8	3.9	4.3	4.3	13.9	8.9	-0.4	4.3	0.0	15.0	-5.5	-1.7	2.1	2.6
Chile	3.4	-1.1	5.6	5.7	5.7	5.9	6.9	9.5	7.0	7.0	2.1	-14.3	12.4	7.2	7.2
Colombia	0.5	-4.4	3.2	3.3	3.5	5.9	5.7	11.8	4.6	2.6	-3.2	-15.4	6.1	2.6	4.7
Ecuador	0.4	-6.6	0.9	2.9	3.5	-9.3	19.3	14.0	-4.1	-0.2	9.8	-43.7	18.5	29.3	22.6
Mexico	4.9	4.0	5.8	4.5	5.2	12.1	14.5	14.9	11.2	11.5	16.5	12.9	14.7	14.6	17.0
Paraguay	-0.4	0.5	1.5	0.5	0.5	12.0	-16.0	2.7	1.5	-4.3	1.4	-25.6	1.1	4.0	-2.1
Peru	-0.4	1.6	4.9	5.3	5.8	4.5	7.1	8.6	7.6	12.5	0.7	-17.3	7.9	10.6	9.6
Uruguay	4.5	-2.9	1.9	3.4	3.4	1.3	-18.8	10.2	1.6	0.1	-6.7	-11.5	3.0	-1.0	-4.2
Venezuela	-0.1	-7.2	3.3	3.9	3.3	1.4	-11.1	6.6	4.7	3.5	14.9	-21.0	11.1	14.1	11.9
Algeria	2.5	3.3	6.0	5.5	5.3	6.8	7.5	7.8	8.3	6.5	3.0	4.5	5.0	6.0	5.0
Egypt	5.6	6.0	3.9	4.9	5.8	6.0	7.0	8.0	8.0	8.0	6.0	5.0	5.0	5.0	5.0
Libya	-2.0	5.4	6.2	5.5	5.0	-25.9	66.3	60.6	1.3	13.9	2.5	2.5	2.5	2.7	2.7
Morocco	6.3	-0.7	0.7	8.0	5.0	8.9	5.2	1.9	7.4	4.3	4.9	6.4	7.2	-2.6	-0.5
Tunisia	5.0	6.2	4.2	7.0	5.6	8.1	0.1	-1.4	6.4	5.1	17.2	-2.2	1.1	1.8	2.6
Ethiopia	-0.5	0.0	3.0	4.0	4.5	3.0	3.5	3.8	3.9	5.0	4.0	4.5	4.8	4.9	7.0
Gabon	2.0	1.8	1.9	0.8	1.5	-1.3	1.8	1.9	1.9	1.9	2.2	2.5	1.7	2.4	2.4
Kenya	1.8	1.5	2.1	5.0	5.8	-6.9	6.0	1.0	1.0	5.0	-6.7	12.0	20.0	5.0	5.0
Nigeria	3.0	3.4	3.5	3.5	3.5	1.9	1.8	2.4	2.4	2.4	-0.2	1.8	-0.6	-0.3	-0.5
South Africa	0.5	1.4	2.2	2.9	3.4	3.4	4.0	3.9	4.1	4.0	-10.6	8.7	4.6	4.9	4.4
Sudan	3.0	4.0	7.0	7.0	5.8	8.0	7.5	40.2	3.3	6.2	12.0	-10.5	12.0	0.9	1.0
African Least Developed Countries	2.3	3.3	4.7	3.8	5.0	3.0	3.0	3.0	3.0	3.0	8.4	10.1	6.4	3.9	5.2
Other African countries	2.8	2.5	4.5	4.0	5.3	4.9	5.2	5.2	5.2	5.4	4.7	0.4	2.9	9.8	2.4
Cyprus and Malta	4.0	3.9	4.2	4.4	4.3	9.2	7.2	5.4	5.6	5.7	9.9	7.6	5.3	5.8	3.7
Iran	2.2	2.6	4.0	3.5	3.6	-4.9	-14.4	5.0	12.3	-5.2	-2.2	0.8	4.5	5.8	4.6
Iraq	15.0	8.0	10.0	11.7	8.1	60.2	58.3	9.9	2.7	20.8	32.0	15.0	5.7	5.7	5.7
Israel	2.2	2.1	5.0	4.3	4.2	9.2	5.3	4.3	4.4	4.2	-10.1	-13.0	0.7	6.6	4.8
Kuwait	-2.5	1.2	2.8	2.5	2.1	-2.9	-9.9	10.3	12.0	-5.1	-0.4	-12.6	2.9	3.0	3.1
Saudi Arabia	1.6	0.7	2.9	2.6	2.1	-4.2	-7.0	8.0	12.6	-5.2	4.2	-10.2	11.9	-1.4	-4.4

Annex Table 1. Project LINK estimates and forecasts of growth in real gross domestic product, exports and imports, 1998-2002

Pre-LINK Meeting Forecasts, October 2000

Country	Annual rates of growth														
	Growth of real gross domestic product						Growth of real exports						Growth of real imports		
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Turkey	3.3	-4.2	5.5	5.0	6.5	10.4	-6.7	8.0	5.1	7.0	2.4	-4.3	13.8	6.6	7.9
Other West Asia oil exporters						-3.4	-5.9	0.3	7.8	1.4	-2.3	4.3	2.6	3.9	2.7
West Asia oil importers	4.2	0.7	2.6	3.3	3.1	1.9	3.0	3.0	3.0	3.0	-6.2	1.3	3.5	3.0	4.4
India	5.6	6.4	6.6	6.9	7.2	6.0	5.8	5.1	7.6	8.7	8.3	11.5	15.8	10.9	8.7
Pakistan	1.9	3.9	4.7	4.8	5.4	-4.1	13.8	7.5	6.2	7.8	-6.0	2.1	3.4	4.6	4.6
China (Hong Kong)	-5.1	3.0	6.9	5.7	5.5	-4.6	4.0	13.7	11.0	10.0	-6.6	0.7	12.5	10.5	9.7
Indonesia	-13.0	0.3	3.6	5.8	5.6	12.0	-32.1	8.2	9.2	9.6	-4.9	-40.9	6.9	11.8	9.2
Korea	-5.8	10.7	8.6	6.0	6.2	13.5	16.3	17.4	11.2	7.4	-22.0	28.9	20.8	15.8	10.7
Malaysia	-7.4	5.6	8.3	7.5	7.3	-0.2	14.0	13.8	11.5	11.1	-19.4	11.8	14.5	12.2	10.8
Philippines	-0.6	3.3	3.6	3.6	4.6	-21.0	3.6	7.6	9.0	9.6	-14.7	-2.8	7.9	9.2	10.2
Singapore	0.4	5.4	8.3	6.7	6.2	-6.4	8.0	10.7	8.6	8.0	-10.1	8.6	11.6	9.4	8.8
Taiwan	4.6	5.4	6.5	6.3	6.1	2.4	9.7	14.5	10.3	9.2	6.3	4.4	13.7	10.0	9.8
Thailand	-10.2	4.2	5.8	5.4	5.3	6.7	8.9	13.9	9.6	8.7	-22.3	20.2	13.4	10.4	11.3
S.E. Asia Least Dev.	5.1	5.1	5.2	5.1	5.3	18.3	-17.8	8.7	7.7	6.5	4.8	-16.8	9.4	4.8	-0.8
Other South East Asia	4.1	4.5	4.9	5.3	5.5	-1.6	-1.1	-0.4	8.3	7.3	-5.3	-4.8	7.9	9.6	13.1
China	7.8	7.4	8.4	8.5	8.0	3.0	6.0	18.3	13.1	12.3	8.1	9.7	17.9	15.2	12.2

Source: Estimates and forecasts of Project LINK, as prepared by the Development Policy Analysis Division of the United Nations Secretariat.

Annex Table 2. Project LINK estimates and forecasts of private consumption inflation, unemployment and interest rates, 1998-2002

Pre-LINK Meeting Forecasts, October 2000

	Private consumption deflator (Annual rate of growth)				Unemployment rate (Per cent of labour force)				Interest rate (Annual percentage)			
	1998	1999	2000	2002	1998	1999	2000	2002	1998	1999	2000	2002
Industrialized countries												
Australia	0.9	1.1	4.4	1.6	8.0	7.2	6.6	8.0	4.6	5.0	6.1	7.0
Austria	0.6	0.7	1.8	1.6	6.4	6.0	5.4	5.2				6.7
Belgium	0.8	0.8	2.0	1.1	9.5	9.0	8.4	8.3				5.8
Canada	1.0	1.3	1.9	2.1	8.3	7.6	6.8	6.7	5.0	4.9	5.7	5.0
Denmark	1.8	2.5	3.0	2.1	6.9	6.0	5.7	5.9	4.0	3.2	4.4	5.0
Finland	2.1	2.1	3.5	2.2	11.4	10.2	10.1	9.0				
France	0.7	0.5	1.1	1.7	13.2	12.8	12.6	12.3				
Germany	0.9	0.8	2.0	1.0	10.7	10.0	9.6	9.0				
Greece	4.7	2.5	2.3	2.2	3.2	3.1	2.9	2.9	10.4	8.3	6.7	5.3
Iceland	3.1	3.0	3.0	3.0	7.4	5.6	4.4	4.2	6.0	6.0	5.9	5.9
Ireland	3.8	3.3	5.0	4.2	11.8	11.6	11.4	11.1				
Italy	2.1	2.1	2.7	2.4	4.1	4.7	4.4	4.0	2.3	2.2	2.1	2.8
Japan	0.2	-0.5	0.4	1.4	4.1	4.7	4.4	4.0				
Netherlands	1.8	1.9	2.6	3.3					7.5	5.1	6.3	6.7
New Zealand	1.1	1.0	1.7	1.5								
Norway	2.6	1.9	3.0	2.3	3.1	3.6	3.5	3.5				
Portugal	2.8	2.3	2.5	2.4	5.0	4.4	4.1	4.0				
Spain	1.6	2.7	3.4	2.7	18.8	15.8	13.4	11.7				
Sweden	-0.6	1.2	1.1	1.8	6.5	5.6	4.6	3.9	4.4	3.3	4.4	5.2
Switzerland	-0.3	0.4	1.6	2.1					1.3	3.0	2.5	2.9
United Kingdom	2.5	1.9	1.9	2.0	4.8	4.4	3.9	3.9	7.0	5.2	5.9	6.2
United States	1.1	1.8	2.5	2.1	4.5	4.2	4.1	4.3	4.8	4.6	5.9	5.9
Euro area									3.5	3.0	4.3	5.0
Eastern Europe and former USSR												
Bulgaria	21.0	3.4	6.9	2.6								
Hungary	14.9	8.7	7.5	6.6								
Poland	11.1	7.3	10.0	8.6								
Romania	58.9	59.1	33.8	18.6								
Russia	29.8	66.2	22.0	19.6								

Annex Table 2. Project LINK estimates and forecasts of private consumption inflation, unemployment and interest rates, 1998-2002

Pre-LINK Meeting Forecasts, October 2000

	Private consumption deflator (Annual rate of growth)				Unemployment rate (Per cent of labour force)				Interest rate (Annual percentage)						
	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Developing countries															
Brazil	4.9	8.4	6.9	5.0	5.0										
Chile	4.7	4.3	3.5	4.2	4.4										
Colombia	18.8	7.8	17.7	13.6	13.6										
Mexico	20.4	16.5	19.3	12.6	10.2										
Peru	7.3	2.9	2.7	3.1	3.7										
Venezuela	35.8	23.6	18.0	21.2	22.4										
Algeria	12.3	12.4	12.4	12.3	12.0										
Egypt	6.8	7.0	7.5	7.8	8.0										
Libya	13.2	13.2	13.2	13.2	13.3										
Morocco	4.8	4.7	4.6	4.5	4.7										
Tunisia	4.0	4.6	4.6	4.6	5.0										
Ethiopia	11.5	11.5	11.5	11.5	11.5										
Gabon	10.0	10.0	10.0	10.0	10.0										
Kenya	10.0	3.0	6.5	10.0	8.0										
Sudan	18.2	18.3	19.5	15.1	13.2										
Turkey	75.5	66.0	53.1	30.9	26.8										
China (Hong Kong)	2.9	-4.2	-1.6	-0.2	0.6										
Indonesia	79.1	8.5	7.1	6.8	5.4										
Korea	8.6	2.7	3.0	3.8	2.8										
Malaysia	5.3	2.8	2.0	2.7	3.4										
Philippines	9.6	8.1	4.7	5.1	5.1										
Taiwan	2.7	-1.5	0.8	1.6	1.6										
Thailand	9.7	-2.6	2.5	3.7	3.5										

Source: Estimates and forecasts of Project LINK, as prepared by the Development Policy Analysis Division of the United Nations Secretariat.