Quarterly Bulletin

Swiss National Bank
Quarterly Bulletin

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Overview

Monetary policy assessment (p. 8)

On 19 September 2002, at its quarterly assessment of the situation, the Swiss National Bank decided to leave the target range for the three-month Libor rate unchanged at 0.25%–1.25%. For the time being, the three-month Libor is to be kept in the middle of the target range. Monetary policy was last adjusted on 26 July 2002, when the target range was lowered by 0.5 percentage points.

Economic and monetary developments (p. 12)

The economic pick-up that had started to take hold in many OECD countries at the beginning of 2002 continued in the last few months, albeit at a modest pace. In the second quarter, real gross domestic product (GDP) rose both in the US and in the euro area and Japan compared with the previous period, with Europe and Japan benefiting from higher demand from the US and the Asian region. Domestic demand, however, remained feeble. In particular, there was no sign yet of a turnaround in investment.

In the second quarter 2002, the Swiss economy was not able to overcome the stagnation persisting since mid-2001. Real GDP rose only negligibly quarter-on-quarter and fell 0.4% short of the corresponding year-earlier level. In the industrial sector, the emerging economic recovery ground to a halt, and business prospects in the export sector were again judged less favourably. Employment declined once more, with jobless figures reaching 2.8% by July. Annual inflation measured by the consumer price index receded by 0.1 percentage points to 0.5% between May and August. The prices of imported consumer goods still fell short of the corresponding year-earlier level, while the upward pressure on prices for domestic goods eased somewhat.

The Swiss franc tended to firm between May and August. To counter a tightening of monetary conditions, the National Bank lowered the target range for the three-month Libor rate by half a percentage point to 0.25%–1.25% on 26 July. Subsequently, short-term interest rates declined markedly. In the course of international interest rate movements, long-term interest rates also fell, albeit to a lesser extent than in the money market. In August, the yield on ten-year Confederation bonds amounted to 3.2% compared with 3.5% in May.

How accurate are GDP forecasts – a survey for Switzerland (p. 42)

In this paper, the quality of forecasts for annual growth of real GDP for Switzerland is examined. The survey covers GDP forecasts drawn up by 14 different institutes between 1981 and 2000. As many forecasts as possible published by the institutes during the year for the current calendar year, the following year and the year after are included. The results show that the forecasts made during the year for the current year, or in autumn for the following year are informative and clearly surpass naive forecasting procedures. Moreover, these forecasts meet optimality standards: they are not distorted, not correlated and efficient. They may be described as weakly rational. At the same time, however, the study makes it clear that forecast errors increase considerably with the forecasting horizon. Forecasts over a time period of more than 18 months no longer shed any light on the future course of the economy and do not meet optimality standards. These results are in keeping with the experience gained in other countries.

The International Monetary Fund as lender of last resort (p. 64)

Ten years ago, Switzerland became a member of the International Monetary Fund (IMF). During these ten years, the IMF underwent profound changes, which are primarily reflected in the massive expansion of its credit business. In the process, the nature of the IMF also changed in that it became a kind of international lender of last resort. As a result, the IMF saw itself increasingly confronted with the problem of moral hazard. The paper shows that the IMF introduced or devised numerous measures to limit this risk. One of the chief measures is the participation of the private sector in solving debt crises. This can be achieved by means of joint clauses or a mechanism for the restructuring of sovereign debt.

Übersicht

Geldpolitische Lagebeurteilung (S. 8)

Die Schweizerische Nationalbank beschloss an der vierteljährlichen Lagebeurteilung vom 19. September 2002 das Zielband für den Dreimonats-Libor unverändert bei 0,25%–1,25% zu belassen. Der Dreimonats-Libor soll bis auf weiteres im mittleren Bereich des Zielbandes gehalten werden. Die letzte Anpassung der Geldpolitik war am 26. Juli 2002 erfolgt, als das Zielband um 0,5 Prozentpunkte gesenkt worden war.

Wirtschafts- und Währungslage (S. 12)

Die konjunkturelle Belebung, die sich Anfang 2002 in vielen Ländern der OECD abzuzeichnen begann, setzte sich in den letzten Monaten verhalten fort. Das reale Bruttoinlandprodukt erhöhte sich im zweiten Quartal sowohl in den USA als auch im Euro-Gebiet und in Japan gegenüber der Vorperiode, wobei Europa und Japan von einer steigenden Nachfrage aus den USA und aus dem asiatischen Raum profitierten. Die Binnennachfrage blieb dagegen schwach. Noch keine Trendwende zeichnete sich insbesondere bei den Investitionen ab.

Die schweizerische Wirtschaft vermochte sich im zweiten Quartal nicht von der seit Mitte 2001 anhaltenden Stagnation zu lösen. Das reale Bruttoinlandprodukt wuchs gegenüber der Vorperiode nur geringfügig und lag 0,4% unter dem entsprechenden Vorjahresstand. In der Industrie kam die sich anbahnende konjunkturelle Erholung ins Stocken und die Geschäftsaussichten wurden im Exportsektor wieder zurückhaltender eingeschätzt. Die Beschäftigung bildete sich nochmals zurück und die Arbeitslosenquote stieg bis Juli auf 2,8%. Die am Konsumentenpreisindex gemessene Jahresteuerung sank von Mai bis August um 0,1 Prozentpunkte auf 0,5%. Die Preise importierter Konsumgüter lagen weiterhin unter dem entsprechenden Vorjahresstand, während sich die Teuerung bei den inländischen Gütern leicht verringerte.

Der Franken tendierte von Mai bis August höher. Um einer Verschärfung der monetären Rahmenbedingungen entgegenzuwirken, senkte die Nationalbank am 26. Juli das Zielband für den Dreimonats-Libor um einen halben Prozentpunkt auf 0,25%–1,25%. In der Folge bildeten sich die kurzfristigen Zinssätze deutlich zurück. Im Zuge der internationalen Zinsbewegung gaben auch die langfristigen Zinssätze nach, wenn auch weniger stark als am Geldmarkt. Im August betrug die Rendite zehnjähriger Bundesobligationen 3,2%, gegenüber 3,5% im Mai.

Wie gut sind BIP-Prognosen – Eine Untersuchung für die Schweiz (S. 42)

In diesem Aufsatz wird die Qualität der Prognosen für das jährliche Wachstum des realen Bruttoinlandprodukts für die Schweiz untersucht. Berücksichtigt werden BIP-Prognosen, die von 14 verschiedenen Instituten in den Jahren 1981 bis 2000 erstellt wurden. Dabei werden möglichst alle Prognosen einbezogen, welche die Institute während eines Jahres für das laufende, das nächste und das übernächste Kalenderjahr veröffentlichten. Die Ergebnisse zeigen, dass die Prognosen, die unter dem Jahr für das laufende oder im Herbst für das nächste Jahr gemacht werden, informativ sind und naive Prognoseverfahren klar übertreffen. Auch genügen diese Prognosen den Optimalitätseigenschaften: sie sind unverzerrt, nicht korreliert und effizient. Sie können als schwach rational bezeichnet werden. Gleichzeitig macht die Untersuchung aber klar, dass die Prognosefehler mit dem Prognosehorizont stark zunehmen. Prognosen über einen Zeithorizont von mehr als 18 Monaten sagen über den künftigen Konjunkturverlauf nichts mehr aus und genügen auch nicht den Optimalitätseigenschaften. Diese Ergebnisse stimmen mit ausländischen Erfahrungen überein.

Der Internationale Währungsfonds als internationaler Lender of Last Resort (S. 64)

Vor zehn Jahren trat die Schweiz dem Internationalen Währungsfonds (IWF) bei. In diesen zehn Jahren durchlief der IWF tiefgreifende Veränderungen, die sich insbesondere in der massiven Ausweitung seiner Kredittätigkeit widerspiegeln. Damit wandelte sich auch die Natur des IWF, der zu einer Art internationalem Lender of Last Resort wurde. Als Folge davon sah sich der Währungsfonds vermehrt mit dem Problem des Moral Hazards konfrontiert. Dieser Aufsatz zeigt, dass der IWF viele Massnahmen ergriff oder konzipierte, um dieses Risiko zu begrenzen. Zu den wichtigsten Massnahmen gehört insbesondere die Beteiligung des Privatsektors bei der Lösung von Schuldenkrisen. Diese kann mit der Hilfe von Kollektivklauseln oder einem Mechanismus zur Restrukturierung souveräner Schulden erreicht werden.

Sommaire

Appréciation de la situation économique et monétaire (p. 8)

Lors de l'analyse trimestrielle de la situation du 19 septembre 2002, la Banque nationale suisse a décidé de laisser inchangée à 0,25%–1,25% la marge de fluctuation du Libor à trois mois et de maintenir, jusqu'à nouvel avis, le Libor à trois mois dans la zone médiane de cette marge. La dernière adaptation de la politique monétaire remonte au 26 juillet 2002; la marge de fluctuation avait alors été abaissée d'un demi-point.

Situation économique et monétaire (p. 12)

La reprise que la conjoncture avait commencé à marquer dans de nombreux pays de l'OCDE, au début de 2002, s'est poursuivie ces derniers mois, mais à un rythme modéré. Du premier au deuxième trimestre, le produit intérieur brut réel a augmenté aux Etats-Unis, mais aussi dans la zone euro et au Japon; l'Europe et le Japon ont bénéficié notamment d'une demande accrue en provenance des Etats-Unis et de la zone asiatique. La demande intérieure est restée cependant faible. Ainsi, aucun retournement de tendance n'était perceptible, en particulier du côté des investissements.

Au deuxième trimestre, l'économie suisse n'est pas parvenue à sortir de la phase de stagnation qui la caractérise depuis le milieu de 2001. Le produit intérieur brut réel a augmenté légèrement par rapport au premier trimestre, mais diminué de 0,4% en comparaison annuelle. La reprise de la conjoncture, qui s'était amorcée dans l'industrie, a tourné court, et le secteur de l'exportation s'est de nouveau montré plus réservé en ce qui concerne l'évolution future de la demande. L'emploi a encore reculé, et le taux de chômage a augmenté, passant à 2,8% en juillet. Le taux annuel de renchérissement, mesuré à l'indice des prix à la consommation, a fléchi de 0,1 point entre mai et août pour s'établir à 0,5%. Les prix des biens de consommation importés ont continué à se replier en un an, tandis que le renchérissement des biens d'origine suisse a marqué une légère baisse.

Entre mai et août, le franc a eu tendance à se revaloriser. Pour éviter un durcissement des conditions-cadres sur le plan monétaire, la Banque nationale a abaissé d'un demi-point, le 26 juillet, la marge de fluctuation du Libor à trois mois, marge qui a ainsi passé à 0,25%–1,25%. Les taux d'intérêt à court terme ont ensuite nettement fléchi. Dans le sillage de la tendance observée sur le plan international, les taux d'intérêt à long terme ont eux aussi diminué, mais pas autant que les rémunérations servies sur le marché monétaire. Le rendement des obligations à dix ans de la Confédération s'établissait à 3,2% en août, contre 3,5% en mai.

La fiabilité des prévisions du PIB – Etude empirique pour la Suisse (p. 42)

L'étude porte sur la fiabilité des prévisions de croissance annuelle du produit intérieur brut réel de la Suisse. L'analyse se fonde sur les prévisions du PIB, établies entre 1981 et 2000, par quatorze instituts. Elle tient compte autant que possible de toutes les prévisions que ces instituts ont publiées dans l'année, pour l'année en cours, l'année suivante et l'année d'après. Les résultats montrent que les prévisions faites dans l'année, pour l'année en cours, et en automne, pour l'année suivante, sont instructives et l'emportent nettement sur des procédés dits naïfs de prévision. Elles satisfont également aux conditions d'optimalité: elles sont en effet exemptes de biais et de corrélation, mais efficientes. Elles peuvent être considérées comme faiblement rationnelles. L'examen révèle en outre que les erreurs de prévision augmentent fortement avec l'horizon de prévision. Des prévisions qui portent sur un horizon dépassant 18 mois ne sont plus instructives et ne satisfont plus aux conditions d'optimalité. Les résultats de cet examen sont en harmonie avec ceux obtenus pour d'autres pays.

Le Fonds monétaire international comme prêteur international de dernier ressort (p. 64)

La Suisse a adhéré, il y a dix ans, au Fonds monétaire international (FMI). Durant cette période, cette institution a connu de profonds changements, le plus important étant l'accroissement du volume des crédits accordés. La nature du Fonds s'est elle aussi modifiée: il est devenu en quelque sorte un prêteur international de dernier ressort («lender of last resort»). Par conséquent, il s'est vu confronté davantage au problème du risque moral. Cette étude montre que nombre de mesures qui ont été adoptées ou échafaudées par le FMI durant cette période l'ont été afin de limiter ce risque. Parmi ces mesures figure notamment la participation du secteur privé à la résolution des crises. Elle peut être obtenue à l'aide de clauses d'action collective ou d'un mécanisme de restructuration de la dette souveraine.

Sommario

Valutazione della situazione monetaria (p. 8)

Il 19 settembre 2002, in occasione della valutazione trimestrale, la Banca nazionale svizzera ha deciso di lasciare inalterato allo 0,25%–1,25% il margine di oscillazione del Libor a tre mesi. Fino a nuovo avviso, l'istituto di emissione intende mantenere il Libor a tre mesi nella zona centrale di questa fascia. L'ultimo adeguamento di politica monetaria risale al 26 luglio 2002; in quell'occasione la Banca nazionale aveva ridotto la fascia di fluttuazione di 0,5 punti percentuali.

Situazione economica e monetaria (p. 12)

La ripresa economica delineatasi in diversi Paesi dell'OCSE all'inizio del 2002 è proseguita nel corso degli ultimi mesi, ma ad un ritmo moderato. Nel secondo trimestre dell'anno, il prodotto interno lordo reale è aumentato tanto negli Stati Uniti quanto nell'area dell'euro e in Giappone. Europa e Giappone hanno tratto profitto della crescente domanda proveniente dagli Stati Uniti e dalla regione asiatica. La domanda interna, invece, è rimasta debole. In particolare gli investimenti non hanno segnalato alcuna inversione di tendenza.

In Svizzera l'attività produttiva è risultata stagnante anche nel secondo trimestre. Il prodotto interno lordo reale è aumentato solo leggermente sul trimestre precedente, mentre si è contratto dello 0,4% rispetto all'anno precedente. La ripresa congiunturale che sembrava delinearsi nell'industria si è arrestata e le prospettive d'affari nel settore delle esportazioni sono state giudicate con minore ottimismo. Il calo dell'occupazione è proseguito ed il tasso di disoccupazione è salito al 2,8% in luglio. Da maggio ad agosto, il rincaro annuale, misurato attraverso l'indice nazionale dei prezzi al consumo, si è ridotto di 0,1 punti percentuali scendendo all'0,5%. I prezzi dei beni di consumo importati sono nuovamente risultati inferiori all'anno precedente, mentre il rincaro dei beni domestici si è leggermente ridotto.

Da maggio ad agosto, il corso del franco svizzero si è rafforzato. Per evitare di esporre l'economia a condizioni monetarie quadro più restrittive, il 26 maggio la Banca nazionale ha ridotto di mezzo punto percentuale il margine d'oscillazione del Libor a tre mesi, portandolo allo 0,25%–1,25%. I tassi d'interesse a breve sono perciò nettamente calati. Sulla scia dell'evoluzione internazionale si sono ridotti, seppure in minor misura, anche i tassi a lungo termine. Il rendimento delle obbligazioni a dieci anni della Confederazione è sceso dal 3,5% in maggio al 3,2% in agosto.

La qualità delle previsioni del PIL – Un'analisi per la Svizzera (p. 42)

Il contributo analizza il grado di affidabilità delle previsioni di crescita annuale del prodotto interno lordo reale per la Svizzera. La ricerca si basa sulle previsioni di 14 istituti pubblicate tra il 1981 e il 2000. Nella misura del possibile, sono state prese in considerazione tutte le previsioni pubblicate da un istituto nel corso dell'anno per l'anno stesso e per l'anno successivo. I risultati indicano che le previsioni relative all'anno in corso o che sono pubblicate in autunno per l'anno successivo sono informative e decisamente superiori alle previsioni ottenute con metodi di previsione naive. Tali previsioni soddisfano inoltre le proprietà di ottimalità: sono prive di bias, non correlate ed efficienti. Si possono quindi definire come razionali in senso debole. La ricerca mette tuttavia in evidenza che l'errore di previsione aumenta fortemente con l'orizzonte previsivo. Le previsioni riferite ad un periodo superiore a diciotto mesi non sono più in grado di fornire informazioni utili sull'andamento congiunturale e non presentano più le proprietà di ottimalità. Questi risultati confermano le conclusioni di analoghe ricerche per l'estero.

Il Fondo monetario internazionale come lender of last resort (p. 64)

Da dieci anni, la Svizzera è membro del Fondo monetario internazionale (FMI). In questo decennio il FMI ha conosciuto cambiamenti profondi, che si sono manifestati soprattutto in una notevole espansione della sua attività creditizia. È quindi cambiata la natura stessa del FMI, trasformandosi, si può dire, in un lender of last resort a livello internazionale. Di conseguenza il FMI si è trovato sempre più esposto al problema di *moral hazard*. Quest'articolo dimostra che il FMI ha preso o ideato diversi provvedimenti allo scopo di limitare tale rischio. Una delle misure più importanti è la partecipazione del settore privato alla risoluzione delle crisi d'indebitamento. Essa può essere ottenuta ricorrendo a clausole collettive o a meccanismi di ristrutturazione del debito sovrano.

Monetary policy assessment

Press release on the quarterly assessment of the situation of 19 September 2002

**Unchanged monetary policy –
target range for the three-month Libor rate
remains at 0.25%–1.25%**

The National Bank has decided to leave the target range for the three-month Libor rate unchanged at 0.25%–1.25%. For the time being, the three-month Libor is to be kept in the middle of the target range. The National Bank last adjusted its monetary policy on 26 July 2002, when it lowered the target range by 50 basis points. In so doing, it reacted to the sluggish pace of the economic recovery in Switzerland, which already became apparent at that time, as well as to the Swiss franc's renewed upward trend. The National Bank took advantage of the leeway afforded by the favourable price development. Since March 2001, the National Bank has eased its monetary policy substantially, lowering the target range for the three-month Libor by a total of 2.75 percentage points. The anticipated recovery of the global economy is taking hold only gradually and a perceptible upswing is not expected until the spring of 2003. This will also have an impact on the economic development in our country. The National Bank, therefore, will continue its relaxed monetary stance. Price stability is not threatened.

The Swiss economy's performance was below the National Bank's expectations during the first half-year of 2002. Business activity continues to suffer from the difficult economic climate worldwide and the strong Swiss franc. In the second quarter 2002, real GDP was slightly below last year's level, but did not contract again compared with the previous quarter. Unemployment registered another slight increase.

Private and government consumption remain the most important pillars of the economy. The decline in capital spending accelerated again during the previous quarters, while construction investment saw stagnating figures. By contrast, both exports and imports picked up in the second quarter 2002 vis-à-vis the previous quarter. The development of orders received, however, does not yet point to a sustained recovery of exports.

Annual inflation measured by the national consumer price index (CPI) increased from 0.4% in January to 1.1% in April. It subsequently receded and hit a low point of −0.1% in July 2002. In August, it climbed to 0.5%. The negative inflation rate in July is mainly attributable to a change in data collection on clearance sales prices for clothing. Irrespective of this special effect, inflationary pressure remains low, which is again due largely to lower prices for imported goods. Inflation in the domestic goods sector always exceeded the one-percent mark this year. Core inflation, computed by the National Bank as the trimmed mean, likewise amounts to approximately 1%. Consequently, the modest inflation is not a sign of a deflationary development in Switzerland.

The National Bank views the prospects for the global economy more cautiously than it did only three months ago. Economic growth in the US is unlikely to pick up speed before the spring of 2003; after that it should gradually regain its potential. The same applies to the European economy.

According to the National Bank's assessment, the Swiss economy will see only moderate growth rates until mid-2003. After that, the economy is set to rebound. Private and government consumption are expected to continue to underpin economic activity. What the economy needs to recover, however, is for exports to pick up. Such an increase strongly depends on the development of the global economy, particularly on the demand for capital goods. With rising exports, equipment investment in Switzerland is also likely to go up again. Based on the recently revised figures from the system of national accounts, the National Bank now expects that on average real GDP will almost stagnate in 2002. Growth will probably resume in 2003. Unemployment will rise further this year.

As a result of the delayed economic rebound inflation is likely to remain low during the next quarters and is not expected to rise again until 2004.

Reacting to the strong franc and the lacklustre economy, the National Bank has made significant interest rate cuts, thereby considerably relaxing the monetary conditions. For the time being, it will maintain its expansionary monetary course so as to support the economic rebound and to keep Swiss franc investments a fairly unattractive option. Low interest rates and the relatively significant growth of the monetary aggregates do not jeopardise price stability under the current circumstances. The National Bank considers the present level of the three-month Libor appropriate.

There are still considerable uncertainties in the current climate, however. Should the global economy slide into another recession or the Swiss franc experience another upward trend – especially vis-à-vis the euro – economic recovery in Switzerland might be at risk again. The National Bank will step in quickly should circumstances change.

Press release for 26 July 2002

Economic recovery slower than expected – dissatisfaction with the exchange rate

The Swiss National Bank will lower the target range for the three-month Libor rate with immediate effect by 0.5 percentage points to 0.25%–1.25%. For the time being, it intends to keep the three-month Libor rate in the middle of the new target range. By further loosening the monetary reins, the National Bank reacts to increasing signs from Switzerland and abroad pointing to a delay in economic recovery and slower-than-anticipated economic growth in 2002. It now forecasts the average growth rate for real GDP to fall considerably short of 1% in 2002. Moreover, the further real appreciation of the Swiss franc has led to a tightening of monetary conditions which is clearly undesirable under the current circumstances. The renewed easing of monetary policy will not jeopardise price stability in the short and medium term.

The strengthening of the Swiss franc reflects the sustained economic and political uncertainties, which led to a loss in confidence also on the international stock markets. The turbulence in the stock markets could, however, turn into a risk factor should it persist contrary to expectations. The National Bank will continue to follow the development of the economy very closely.

Economic and monetary developments in Switzerland

Report to the attention of the Governing Board with a view to its quarterly assessment of the situation and to the attention of the Bank Council

The report was passed on 19 September 2002. Data which became available at la later date has been included whenever possible. Quarter-on-quarter comparisons are always based on seasonally-adjusted data.

1   International environment

1.1 Economic development

The economic pick-up that had started to take hold in many OECD countries since the beginning of 2002 continued in the last few months, albeit at a modest pace. In the second quarter, real gross domestic product (GDP) rose in the US, the euro area and Japan compared with the previous period, with Europe and Japan benefiting from higher demand from the US and the Asian region. Domestic demand, however, remained feeble. In particular, there was no sign yet of a turnaround in investment.

In the second half of the year, the economies in most countries are likely to rebound only slightly. The large-scale stock market losses incurred around mid-year, which followed in the wake of a series of financial scandals, placed an additional burden on the economy. They dented, inter alia, consumer confidence, limited companies' financing possibilities and detrimentally affected the financial sector. The prerequisites for an economic recovery remain intact, however. The central banks continued to pursue an expansionary monetary policy course and the available leading indicators did not signal a renewed economic downturn.

Slackening growth in the US

In the US, real GDP increased at an annualised rate of 1.1% in the second quarter vis-à-vis the previous period, as against 5.0% in the first quarter. GDP was thus up 2.1% from a year previously. Growth was driven by private consumer spending and stockpiling as well as, to a lesser degree, by government consumption. Exports picked up momentum as the dollar slid, but foreign trade made an overall negative contribution to growth due to the steep rise in imports. Whereas corporate investment in construction dropped sharply, private residential construction and equipment investment picked up steam.

In the third quarter, the economy is likely to revive only moderately. Manufacturing output in the processing industry remained almost at the previous period's level. According to the latest surveys, private consumption suffered from the consequences of the stock market slump and the gloomier situation on the labour market. The unemployment rate edged down to 5.8%, still remaining one percentage point above the previous year's level. Corporate investment activity remained muted amid the uncertain outlook and the stagnating order intake. Exports, by contrast, continued to expand.

Slump persisting in the EU

In the euro area, real GDP rose at an annualised rate of 1.4% in the second quarter, i.e. at the same pace as in the previous period. It was thus up 0.6% from a year earlier. Whereas exports gained momentum and private and government consumption expanded slightly, investment dropped sharply again. Of the three large industrial countries in the EU zone, France recorded slightly above-average growth also in the second quarter, while the German and Italian economies developed at a subdued pace, as was also the case for most smaller countries.

United States   Graph 1.1

Year-on-year change
— Consumer prices   ■ Real GDP
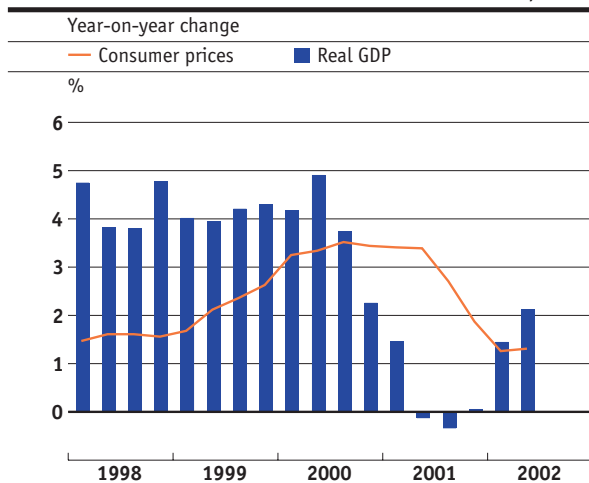
Source: Bank for International Settlements (BIS)

Japan   Graph 1.2

Year-on-year change
— Consumer prices   ■ Real GDP
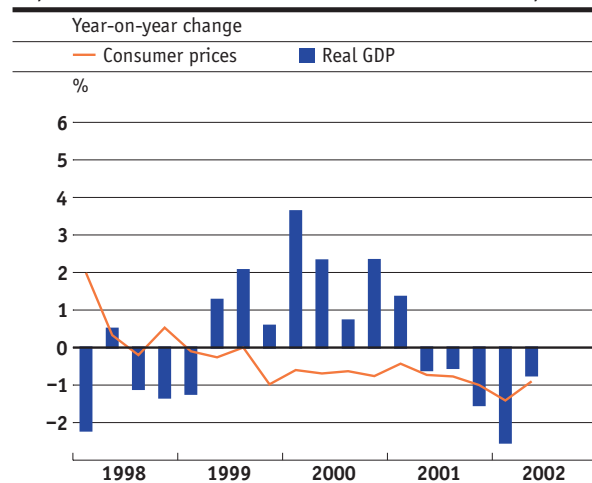
Source: BIS

Real growth in the euro area is likely to remain sluggish in the second half of the year as well. Manufacturing output in the processing industry fell in July after having edged up slightly in the second quarter. The latest surveys suggest that sentiment among producers and consumers deteriorated. While unemployment rose from 8.1% in January to 8.3% in July, private consumption picked up significantly; the appreciation of the euro against the dollar tends to put a brake on export activity.

Compared with the euro area, the British economy performed better in the second quarter. Real GDP rose at an annualised rate of 2.3%, as against 0.6% in the previous period. Growth was driven by exports and private consumption. At around mid-year, though, signs of a renewed slowdown in growth emerged in the UK as well.

Slight recovery in Japan

The economic picture for Japan brightened in the second quarter. Real GDP increased at an annualised rate of 2.6% after having stagnated in the previous period and having declined significantly in 2001. Vigorous export activity, stimulated by the depreciation of the yen in 2001, mainly contributed to this rebound. Private and government consumption, by contrast, rose modestly. Investment contracted again, yet not by as much as in the previous periods.

The Japanese economy is likely to exhibit weak growth in the second half of the year. A sustained recovery of domestic demand is still not to be expected; domestic demand is, among other factors, affected by the deterioration in the labour market. The unemployment rate stood at 5.5% in July, compared with 5.0% a year earlier. Moreover, the appreciation of the yen in the second quarter is likely to put a strain on the export sector.

Situation in Latin America deteriorated

Several Latin American countries were hit by crises in the first half of 2002. In Argentina, the economy collapsed and inflation soared. Negotiations with the International Monetary Fund (IMF) on a new economic programme and loan package failed. In the second quarter, the crisis spilled over to Uruguay, where the banking system ran into liquidity problems after Argentine and, subsequently, Uruguayan account holders started to withdraw their deposits. In June and August, the international financial institutions provided Uruguay with extensive funds to prop up its banking system. In Brazil, too, economic woes multiplied. Growing uncertainty about the outcome of the presidential election in October led to a second-quarter increase in the risk premium on Brazilian government bonds, and the Brazilian currency plunged. In order to stabilise the situation and to counteract the growing loss of confidence on the part of creditors and investors, the IMF approved a USD 30 billion stand-by credit for Brazil at the beginning of September.

Euro area   Graph 1.3

Year-on-year change
— Consumer prices   ■ Real GDP
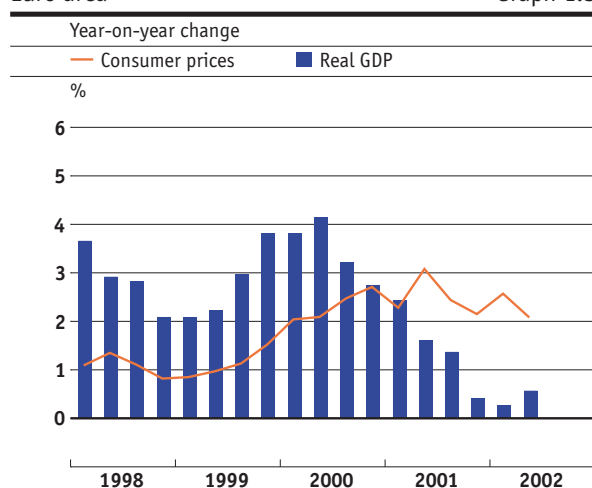
Source: BIS

Switzerland   Graph 1.4

Year-on-year change
— Consumer prices   ■ Real GDP
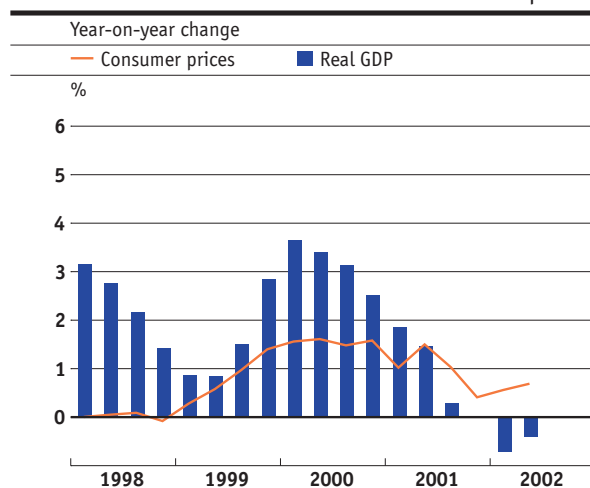
Sources: Swiss Federal Statistical Office (SFSO)
State Secretariat for Economic Affairs (seco)

1.2 Monetary development

Stable prices

In the OECD area (not including high-inflation countries), consumer prices held steady on average between May and July after having increased in the first four months of the year mainly on the back of higher energy prices. Between May and July, energy prices rose only slightly, whereas food prices fell somewhat and the other prices were flat. Average annual inflation in the OECD countries was 1.4% in July.

In the US and the UK, the annual inflation rate measured by consumer prices remained unchanged at 1.3% and 1.2% respectively in the second quarter. In July, it rose slightly to 1.5% in the US and edged down to 1.0% in the UK. In the euro area, inflation (harmonised price index) receded from 2.6% in the first quarter to 2.1% in the second quarter and slipped further to 1.9% in July.

In Japan, deflation seems to be subsiding slowly. In July, consumer prices fell 0.8% short of the year-earlier level, compared with a decline of 0.9% in the second quarter and 1.4% in the first.

No change in key interest rates

The central banks of the major industrial countries left their key interest rates unchanged in the third quarter as well after having reduced them significantly in 2001. The Fed's targeted call money rate still stood at 1.75%, the minimum offered rate for refinancing transactions (repo rates) of the ECB at 3.25% and the repo rate of the Bank of England at 4.0%. The call money rate of the Bank of Japan persisted at 0.0%. By steering this monetary policy course, the central banks took account of the low inflationary threats and the relentlessly lacklustre economy. Some smaller industrial countries, however, such as Canada and Norway, lifted their key interest rates slightly.

Lower long-term interest rates

Long-term interest rates slipped during the second quarter, following a first-quarter rise. In the US, the yield on ten-year government bonds sank by 0.6 percentage points to 4.7% between March and July. During the same period, the euro area registered a decline of 0.3 percentage points; in July, ten-year government bonds yielded 5.0%. In the UK, the ten-year yield on government bonds rose to 5.2% up to May and subsequently slipped to 5.0% in July; in Japan, it stood at 1.3%, 0.2 percentage points below the February figure.

1.3 Economic outlook

As a result of the increased uncertainty about the onset and the magnitude of the economic recovery, most forecasting institutions downgraded their growth expectations for real GDP. In September, the consensus forecast[1] for the US was 2.4% for 2002 and 3.1% for 2003, i.e. 0.3 and 0.5 percentage points respectively below the June forecast. Forecasts for the euro area were also lowered, yet not by as much.

Real GDP is projected to grow by 1.0% in 2002 and by 2.3% in the next year (June forecast: 1.3% and 2.7% respectively). The forecast for the UK was revised slightly downward to 1.6% and 2.6% respectively. In September, the consensus participants were more pessimistic in their outlook for Japan, too. For 2002, they expect real GDP to contract by 0.8%, as against 0.5% projected three months earlier. The forecast for 2003 is still 1.0%.

Forecasts Table 1

| | Economic growth[2] | | | | Inflation[3, 4, 5] | | | |
| | OECD | | Consensus | | OECD | | Consensus | |
	2002	2003	2002	2003	2002	2003	2002	2003
European Union	1.5	2.8	1.0	2.3	2.1	2.0	2.1	1.8
Germany	0.7	2.5	0.5	1.9	1.4	1.6	1.4	1.4
France	1.4	3.0	1.2	2.4	1.5	1.4	1.8	1.5
United Kingdom	1.9	2.8	1.6	2.6	2.3	2.3	2.1	2.3
Italy	1.5	2.8	0.7	2.3	2.5	2.1	2.3	1.9
United States	2.5	3.5	2.4	3.1	1.4	1.8	1.6	2.3
Japan	−0.7	0.3	−0.8	1.0	−1.6	−1.7	−1.0	−0.7
Switzerland	1.0	2.3	0.6	1.8	0.6	0.7	0.7	1.0
OECD	1.8	3.0	–	–	1.3	1.4	–	–

1 Consensus forecasts are monthly surveys conducted among approximately 200 leading companies and economic research institutes in roughly 20 countries, covering predictions for the development of GDP, prices, interest rates and other relevant economic indicators.

The results are published by Consensus Economics Inc., London.

2 Real GDP, change from previous year in percent
3 Consumer prices (Consensus) and consumption deflator (OECD), change from previous year in percent

4 Inflation EU: euro area
5 OECD: not including high-inflation countries
Sources: OECD: Economic Outlook June 2002;
Consensus: September Survey

2 Monetary development

The Swiss franc firmed from May to August 2002. In order to counter the tightening of monetary conditions and so as not to jeopardise the economic recovery, the Swiss National Bank lowered the interest rate target range for the three-month Libor rate by 0.5 percentage points on 26 July for the second time this year. Monetary conditions in Switzerland have thus eased somewhat overall.

The lower money market rates were mirrored in the accelerated growth of the money stock M_3. The interest rate-induced switching of term deposits to more liquid forms of investment is most clearly reflected in the expansion of the money stocks M_1 and M_2. The volume of domestic loans shrank slightly, however. Stock markets suffered drastic losses.

2.1 Interest rates

Further fall in money market rates

On 2 May 2002, the National Bank lowered the interest rate target range for three-month Swiss franc investments on the London interbank market (Libor) by 50 basis points. On 26 July it reduced the target range for its key interest rate by another 50 basis points to 0.25%–1.25%. Since the three-month Libor had fluctuated within the lower half of the old target range before it was cut, the actual reduction only amounted to roughly 25 basis points. In August, the three-month Libor hovered slightly above the 0.75% mid-point of the new target range. Repo rates declined from 0.93% before the interest rate reduction to 0.57% at the end of August.
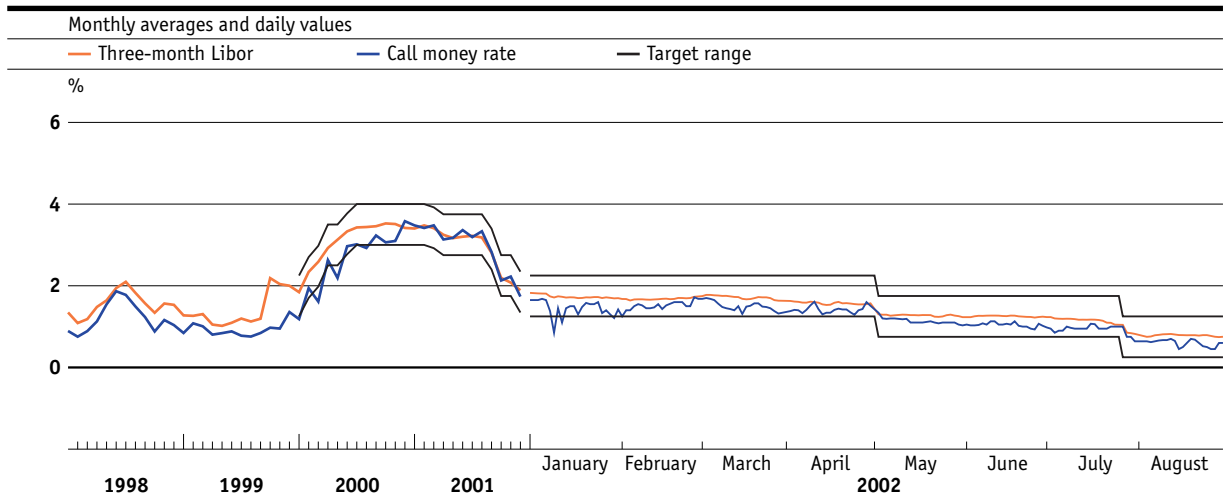
The call money rate and the issuing yield of federal money market debt register claims developed parallel to the key rate (cf. graph 2.1). Since May, the call money rate has fallen short of the three-month Libor rate by 18 basis points on average, the issuing yield of federal money market debt register claims by 27 basis points.

Since the major foreign central banks kept their key interest rates steady from May to August 2002, money market rates abroad with a three-month maturity remained approximately at their level of early May (cf. graph 2.3). As a consequence, the interest rate gaps between US dollar and euro investments, on the one hand, and Swiss franc investments, on the other, continued to widen. US dollar interest rates exceeded Swiss interest rates by 99 basis points on average in August (May: 63 basis points); euro interest rates were 256 basis points higher than the Swiss ones (May: 219 basis points). The differential to the lower Japanese money market rate narrowed from 120 basis points in May to 72 basis points in August.

Long-term yields also on the decline

Long-term yields decreased as well. Measured by the estimated yield on a synthetic federal discount bond with a residual maturity of ten years, they receded from 3.48% in May to 3.18% in August (cf. graph 2.2). The decline was, however, less pronounced than that on the money market. The time premium thus increased appreciably. Measured by the difference between the yield on a ten-year discount bond and the yield on a three-month money market debt register claim, the time premium rose from 2.33 percentage points in May to 2.61 percentage points in August.

Although inflation rates persisted at over 2% and short-term interest rates in the euro area remained unchanged, yields on European government bonds with a maturity of ten years fell by just as much as the corresponding yields on Confederation bonds (cf. graph 2.4). The differential between European and Swiss long-term interest rates amounted to 1.55 percentage points in August. Yields on US government bonds exhibited the steepest decline. The differential to long-term Swiss interest rates shrank from 1.68 percentage points in May to 1.08 percentage points in August. Even nominal yields of comparable Japanese bonds, which were already at an extremely low level, dropped somewhat. The difference between Swiss and Japanese government bonds amounted to 1.93 percentage points in August.

Money market rates

Graph 2.1

Monthly averages and daily values

— Three-month Libor   — Call money rate   — Target range

%

1998   1999   2000   2001   January February March April May June July August

2002

Bond yield and interest rate structure

Graph 2.2

Monthly averages and daily values

— Confederation bonds   — Federal money market debt register claims (3 months)   ▮ Interest rate differential

%

1998   1999   2000   2001   January February March April May June July August

2002

Interest rates abroad

Graph 2.3

Three-month Libor

— USD   — DEM   — EUR   — CHF

%

1998   1999   2000   2001   2002

Interest rates abroad

Graph 2.4

Long-term government paper

— US   — Germany   — Euro area   — Switzerland

%

1998   1999   2000   2001   2002
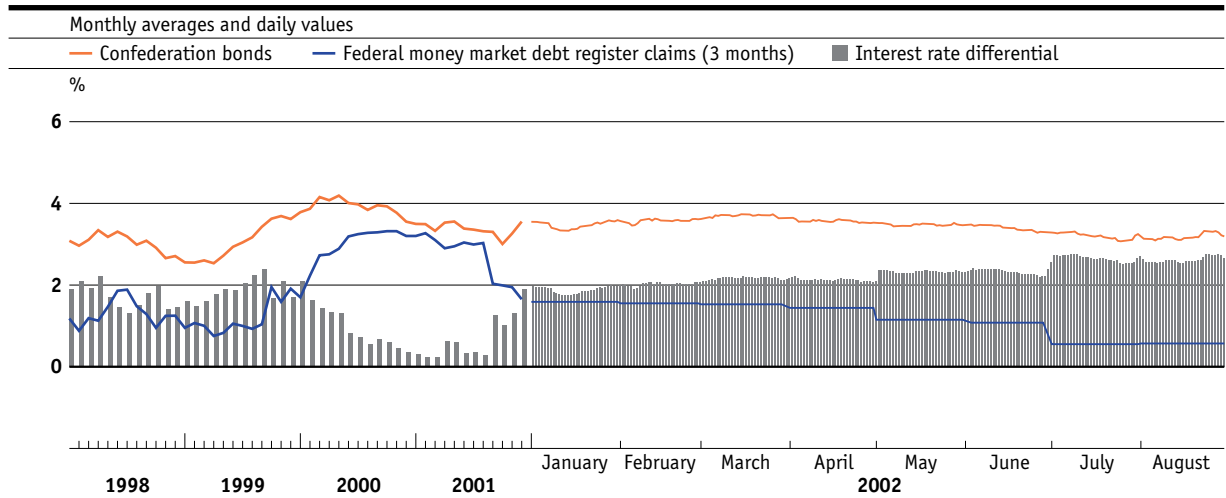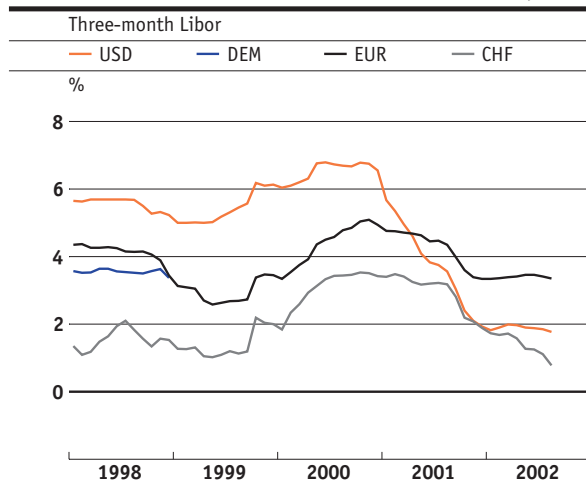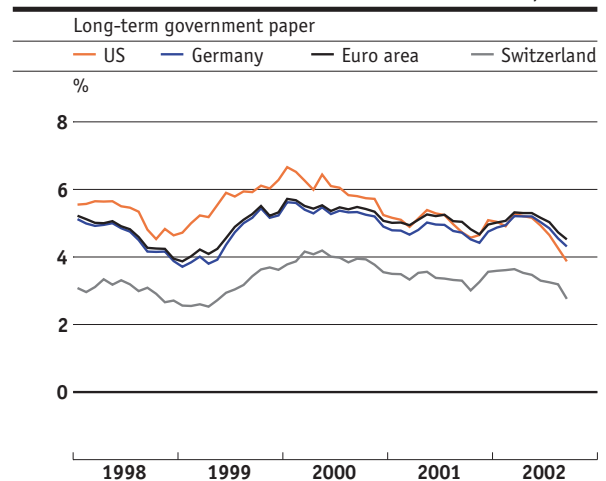
Graphs 2.1 and 2.3: Source: SNB

Graph 2.2: Confederation bonds: until the end of 2000, average yield calculated by maturity: as of 2001, spot interest rate of 10-year discount bonds. Money market debt register claims: yield at auction. If several auctions per month: the last of the month. Source: SNB

Graph 2.4: US: yield on 10-year US treasury paper, secondary market. Germany: current yield on quoted 10-year German Federal securities. Switzerland: Confederation bonds; see graph 2.2. Source: BIS

Banks' interest rates declined

The yield on medium-term notes of commercial banks generally follows the long-term yield of prime borrowers with a time lag of about one month. This also proved true from May to August 2002. After initially persisting at the level of early April (3.19%), the yield on medium-term notes of the cantonal banks declined to 2.72% by the beginning of August. The interest rate on savings deposits at cantonal banks remained virtually steady. At the beginning of August, it stood at 1.2%. Even though the refinancing basis was favourable thanks to the marked decline in money market rates, the banks left their terms for old and new mortgage loans unchanged until the end of July. It was not before August that several banks lowered their mortgage loan rates.

Major corrections on the stock exchanges

In June and July 2002, stock exchanges around the world suffered falls in equity prices to an extent last seen after the attacks in the US on 11 September 2001. These losses were partly offset in August. Stock indices in August fell short of their end-2001 readings: the Swiss indices by 16.5% (SMI) and 19.0% (SPI), the European STOXX50 by 24.6% and the Dow Jones by 13.0%.

The latest stock market losses are primarily due to dwindling investor confidence. The confidence crisis was, in particular, deepened by several high-profile bankruptcies, such as the one of the energy giant Enron and the media group WorldCom, as well as by the ongoing discussion about the role of auditors in connection with accounting irregularities. The US Congress consequently toughened punishments for balance sheet fraud. Simultaneously, the US Securities and Exchange Commission (SEC) drastically stiffened regulations on the disclosure duties of listed companies.

2.2 Exchange rate

US dollar stabilising

From May to mid-July 2002, the US dollar remained soft against the major currencies, continuing a phase that had started in February. During this more than five-month period, the US dollar lost up to 11% vis-à-vis the pound sterling and up to 15% vis-à-vis the euro. For a short period of time, the euro was above parity. It was last traded at such a high price in February 2000. Against the yen, the US dollar lost up to 13%. The Japanese currency climbed to its highest level against the US currency since February 2001.

In mid-July 2002, the downward slide of the greenback was halted. It subsequently gained some ground. Vis-à-vis the euro, it firmed by 3% until the end of August. The appreciation against the yen and the pound sterling was slightly weaker (1.7%).

Stable Swiss franc

Averaged over May to August, the euro exchange rate in Swiss francs remained relatively stable. By reducing the interest rate target range on 26 July, the National Bank succeeded in easing the upward pressure on the Swiss franc, which had become manifest in July. At the end of August, the euro was quoted at Sfr 1.47.

The Swiss franc, however, further strengthened against the US dollar from May to July, reaching a level last recorded three and a half years ago. The greenback subsequently gained 3.5% and was quoted at Sfr 1.49 at the end of August 2002.

The real export-weighted external value of the Swiss franc rose by 2.0% in the first eight months of the year. The Swiss franc gained 9.7% against North America, 4.1% against Asia and 5.9% against Australia. It remained comparatively stable vis-à-vis the European countries (0.5%).

Exchange rates   Graph 2.5
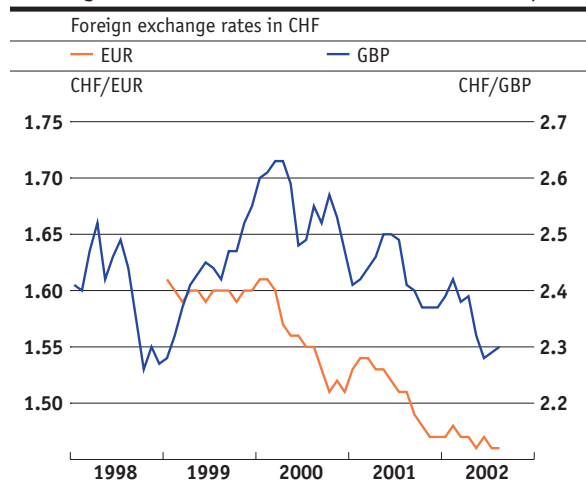
Exchange rates   Graph 2.6
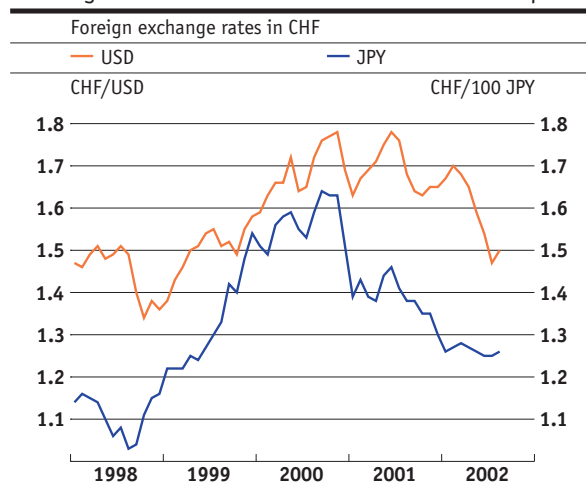
Real exchange rate indices   Graph 2.7
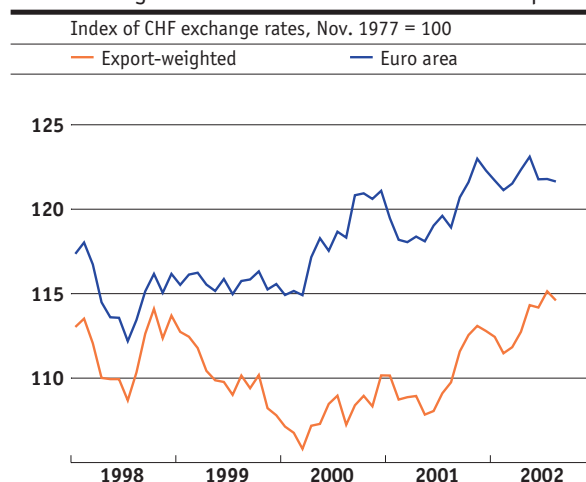
Graphs 2.5, 2.6 and 2.7:
Source: SNB

2.3 Monetary aggregates

Monetary base developing slowly but surely

The seasonally-adjusted monetary base, which consists of banknote circulation and the banks' sight deposits with the National Bank, remained virtually steady since the beginning of the year. As the monetary base expanded significantly in the second half of 2001, it exceeded its year-earlier level by far. Compared with the year-back month, the seasonally-adjusted monetary base grew by 5.6% in July.

The seasonally-adjusted banknote circulation, which accounts for approximately 90% of the monetary base, amounted to Sfr 34,935 million on average in the second quarter. This corresponds to a 1.8% decrease (annualised 7.0%) compared with the previous quarter. However, it is still 7.3% higher than a year earlier. The fall in banknote circulation from the previous quarter is largely due to a decline in large and medium denominations. Yet 1000-franc notes still make a considerable contribution to year-on-year growth in banknote circulation compared with the previous year.

As usual, the seasonally-adjusted sight deposits exhibited much heavier fluctuations than banknote circulation. Their average level of Sfr 3,175 million since the beginning of the year was largely equal to that recorded in the year-earlier period. Second-quarter demand for sight deposits was up by 6.6% (annualised 28.9%) from the previous quarter.

Significant growth of money stock M_3

The broadly defined monetary aggregates M_1, M_2 and M_3 continued to show very mixed development. The steadily declining money market rates increasingly prompted investors to switch from term deposits to more liquid forms of investment. Term deposits were thus 11.9% lower in July than a year previously. At the same time, transaction accounts expanded by 7.5% and currency in circulation by 3.3%. Sight deposits staged an especially vigorous increase of 15.6%. Overall, the money stock M_1 was 10.9% higher in July than a year ago.

The money stock M_2, which additionally includes savings deposits, also rose steeply, by 11.3% in July compared with the year-earlier month. The money stock M_3 rose by 5.7% in the year to July. This is the highest year-on-year growth rate since May 1997.

Monetary base — Graph 2.8
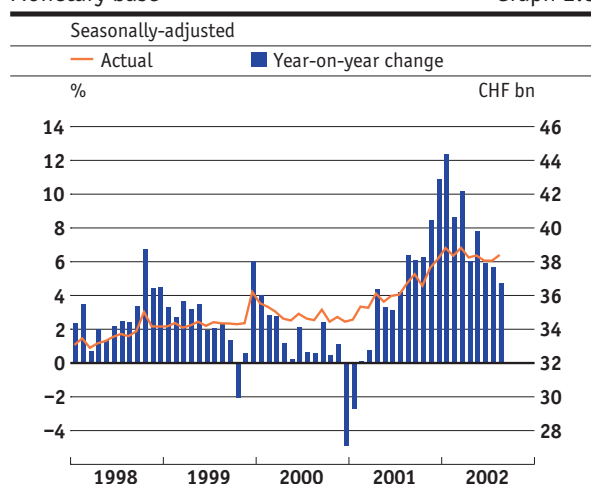
Money stock M_3 — Graph 2.9
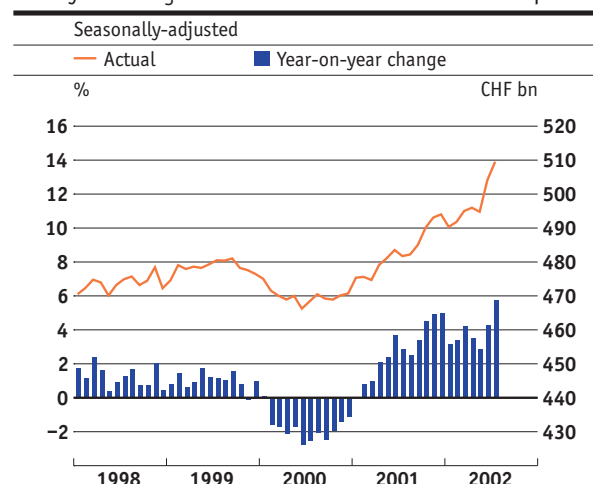
Graphs 2.8 and 2.9:
Source: SNB

Monetary base and its components   Table 2

	2000	2001	2001			2002				
			Q2	Q3	Q4	Q1	Q2	June	July	August
Banknote circulation[1]	31.6	33.0	32.5	32.7	34.6	35.9	34.9	34.5	34.7	34.4
Change[2]	2.4	4.7	3.9	5.5	8.7	10.8	7.3	5.9	5.9	5.3
Sight deposit accounts[1]	3.2	3.3	3.3	3.4	3.3	3.1	3.3	3.4	3.1	3.3
Change[2]	−12.0	0.2	0.4	4.9	6.0	0.1	−0.3	7.4	4.9	−2.3
MB[1,3]	34.8	36.3	35.8	36.1	37.8	39.0	38.1	37.9	37.8	37.7
SAMB[1,4]	**34.8**	**36.3**	**35.9**	**36.7**	**37.5**	**38.7**	**38.2**	**38.1**	**38.1**	**38.4**
Change[2]	1.1	4.1	3.5	5.4	8.4	10.3	6.5	5.8	5.6	4.6

Broadly defined monetary aggregates and their components[5]   Table 3

	2000	2001	2001			2002				
			Q2p	Q3p	Q4p	Q1p	Q2p	Junep	Julyp	Augustp
Currency in circulation	2.4	5.2	3.8	5.8	9.8	10.6	7.0	6.4	3.3	4.0
Sight deposits	−4.6	−1.5	−2.1	−0.9	1.4	3.3	5.6	9.5	15.6	16.4
Transaction accounts	0.4	−0.6	−1.7	0.2	3.2	4.5	5.8	7.0	7.5	9.5
M₁	**−1.9**	**−0.2**	**−1.1**	**0.5**	**3.3**	**4.9**	**5.9**	**8.2**	**10.8**	**12.0**
Savings deposits	−9.0	−5.8	−7.5	−5.4	−0.6	4.4	9.1	10.1	11.9	13.4
M₂	**−5.3**	**−2.8**	**−4.1**	**−2.3**	**1.5**	**4.6**	**7.4**	**9.1**	**11.3**	**12.6**
Term deposits	17.9	27.4	33.9	24.3	17.9	−0.1	−9.0	−11.3	−11.9	−16.3
M₃	**−1.8**	**2.8**	**2.7**	**2.9**	**4.8**	**3.6**	**3.5**	**4.3**	**5.7**	**5.8**

1 In billions of Swiss francs; average of monthly values; monthly values are averages of daily values
2 From previous year in percent
3 MB = monetary base = banknote circulation + sight deposit accounts

4 SAMB = seasonally-adjusted monetary base = monetary base divided by the corresponding seasonal factors

5 Definition 1995, change from previous year in percent
p Provisional

2.4 Loans and capital market borrowing

Domestic loans declined

Domestic loans comprise loans by the banks to borrowers resident in Switzerland or the Principality of Liechtenstein. They include unsecured customer claims, secured customer claims and mortgage claims. At 76%, mortgage claims account for the largest part of domestic loans in terms of volume. Mortgage claims plus secured customer claims make up the secured domestic loans. A breakdown by individual components shows that unsecured customer claims shrank by approximately 17% since peaking in April 2001. The decline in June 2002 was 15% in a year-on-year comparison. This decline reflects the persisting uncertainties surrounding the future development of the economy and the situation on the financial markets. For the first time this year, secured customer claims have also contracted. In June, they dropped by 5.5% year-on-year. Mortgage claims, however, which are the best secured loan component, expanded further.

While mortgage claims continued to increase, the other loan categories shrank markedly. On balance, domestic loans declined in June 2002, albeit only slightly, compared with the previous year.

Booming bond issues

In the second quarter 2002, issuing activity in the Swiss capital market was, as in the previous quarter, characterised by the comparatively strong presence of foreign borrowers. Their gross issuance, though, at Sfr 11 billion, fell short of the peak reached in the first quarter (Sfr 14.4 billion). Roughly half of these issues were accounted for by tranches of issuing programmes. Redemptions were relatively low again. This resulted in Sfr 6.7 billion in net borrowing on the capital market by foreign borrowers, an amount that has only rarely been topped in recent years. Issuance by Swiss borrowers was, once more, slightly higher than in the previous quarter. Issues by the Confederation again accounted for more than half of the total issuing volume. Redemptions were relatively low as no Confederation bonds were due or paid back early. Net borrowing on the capital market by Swiss bond issuers reached Sfr 5.3 billion, one of the highest levels in recent years.

Issuing activity in the stock market ground to a near standstill. The value of the issues fell nearly Sfr 1 billion short of the amount of redemptions, which were roughly at the same level as in the previous quarters.

Annual rates of change: secured and unsecured loans   Graph 2.10

Capital marked borrowing in billions if Swiss francs Table 4
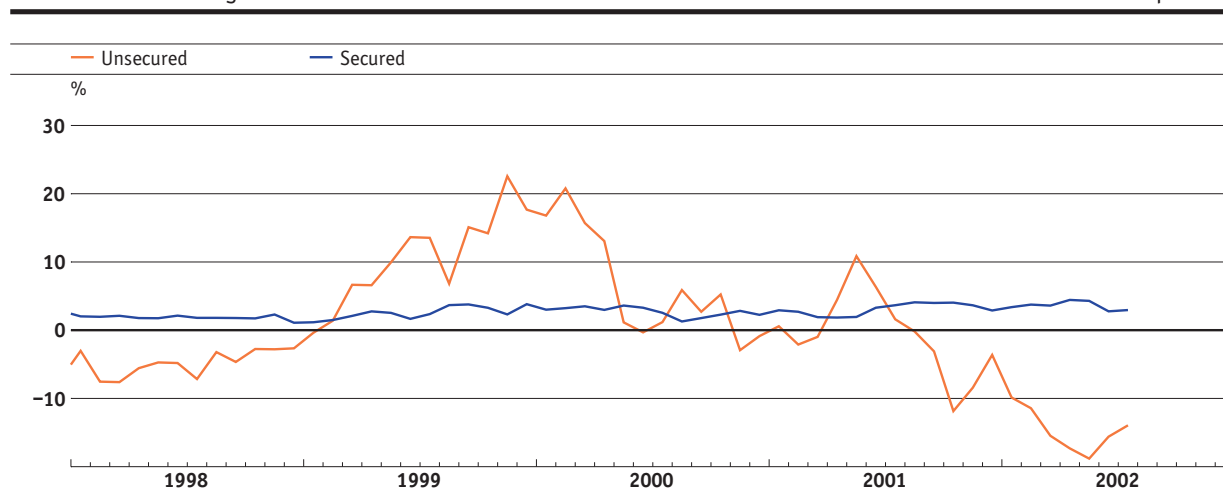
	2000	2001	2001			2002	
			Q2	Q3	Q4	Q1	Q2
Bonds and shares, total							
Price of issue[1]	79.5	73.4	14.2	18.7	21.6	24.0	20.5
Conversions/Redemptions	53.6	60.4	11.8	18.1	14.6	13.7	9.4
Net borrowing	25.8	13.0	2.3	0.6	7.0	10.3	11.1
Swiss bonds							
Price of issue[1]	37.1	27.0	5.6	7.9	4.7	8.0	9.2
Conversions/Redemptions	23.0	21.1	4.5	4.8	4.5	6.9	4.0
Net borrowing	14.1	5.9	1.1	3.1	0.2	1.1	5.3
Swiss shares							
Price of issue[1]	8.9	12.3	1.4	0.6	9.4	1.5	0.2
Redemptions	5.7	7.3	0.5	5.4	0.4	0.8	0.9
Net borrowing	3.2	5.0	0.9	−4.8	8.9	0.7	−0.8
Foreign bonds[2]							
Price of issue[1]	33.5	34.0	7.1	10.2	7.5	14.4	11.1
Redemptions	25.0	32.0	6.8	7.9	9.6	5.9	4.4
Net borrowing[3]	8.5	2.1	0.3	2.3	−2.1	8.5	6.7

1   By date of payment
2   Without foreign-currency
bonds
3   Without conversions

3 Aggregate demand and output

3.1 GDP and industrial output

Delayed economic recovery

In the second quarter 2002, the Swiss economy was not yet able to overcome the recessionary trends persisting since mid-2001. Real GDP rose only modestly quarter-on-quarter and fell 0.4% short of the corresponding year-earlier level. Private and government consumption as well as construction investment added some positive momentum. Equipment investment, by contrast, tumbled again compared with the previous period; as a consequence, domestic final demand shrank further. Conversely, goods exports were higher and inventories increased again. With imports also rising at an accelerated pace, however, GDP was only slightly higher.

Weaker GDP growth in 2001

According to a first estimate by the Swiss Federal Statistical Office (SFSO), real GDP rose by 0.9% in 2001. The economy thus grew 0.4 percentage points more slowly than anticipated by the State Secretariat for Economic Affairs (seco). Subsequently, the seco adjusted its quarterly estimate to that of the SFSO. The new growth curve for real GDP points slightly downwards from the second quarter 2001 until the first quarter 2002, as compared with the previous period. The correction in construction investment was especially pronounced (cf. section 3.3). Yet private consumption, too, exhibited less robust development than initially assumed. The first GDP estimate of the SFSO is always revised in the following year.

GDP and its components
At prices of 1990; percentage-point contribution
to year-on-year change in GDP

Table 5

| | 2000 | 2001 | 2002 | | | 2002 | |
			Q2	Q3	Q4	Q1	Q2
Private consumption	1.1	1.1	1.2	0.9	1.0	1.0	0.3
Govt. and social insurance consumption	0.2	0.4	0.1	0.3	0.4	0.1	0.7
Investment in fixed assets	1.5	−1.4	−0.6	−2.0	−3.0	−1.8	−2.2
Construction investment	0.3	−0.6	−0.6	−0.8	−0.7	0.0	0.2
Equipment investment	1.2	−0.8	0.0	−1.1	−2.3	−1.7	−2.4
Domestic final demand	**2.9**	**0.1**	**0.7**	**−0.7**	**−1.6**	**−0.7**	**−1.3**
Inventories	−0.3	0.7	0.3	2.3	0.0	0.8	1.1
Exports, total	4.3	0.0	0.9	−1.2	−1.6	−3.3	−0.4
Aggregate demand	**6.9**	**0.7**	**1.9**	**0.4**	**−3.3**	**−3.2**	**−0.6**
Imports, total	−3.7	0.1	0.5	0.1	−3.3	−2.5	−0.2
GDP	**3.2**	**0.9**	**1.5**	**0.3**	**0.0**	**−0.7**	**−0.4**

Sources: SFSO, seco

Industrial activity still weak

The economic revival in the industrial sector, which had been observed in the first few months of the year, began to stall in the second quarter. According to the surveys conducted by the Swiss Institute for Business Cycle Research at the Swiss Federal Institute of Technology (KOF/FIT), business activity in industry was sluggish from May to July. The synthetic index of industrial activity persisted at an unsatisfactory level, and output continued to decrease slightly.

All in all, the picture for domestic market-oriented companies was somewhat brighter than that for the export sector. Both orders received from Switzerland and the order backlog stabilised compared with the first quarter, and finished goods inventories were further reduced.

In the export sector, however, orders received were still on a slight decrease. Since output was increased from the first quarter, finished goods inventories could not be reduced any further and were increasingly being assessed as too high again.
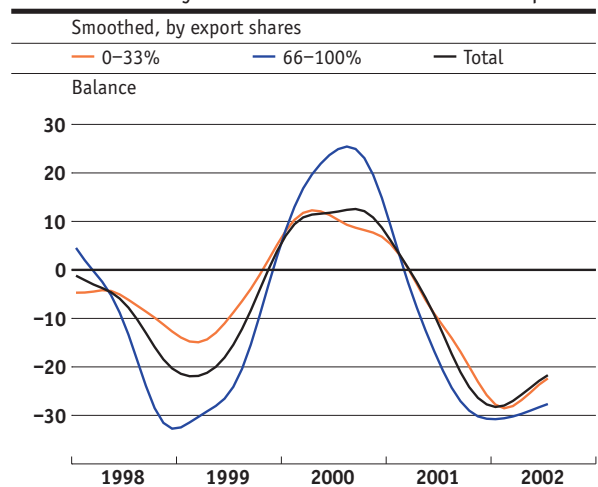
More cautious expectations

The business outlook also deteriorated somewhat from May to July, but the mood remained optimistic overall. After expectations had brightened considerably in the first few months of 2002, the export industry, in particular, again gave a more cautious assessment of the development of demand in the short and medium term. Accordingly, it cut back somewhat its production plans and the planned purchases of primary products. In the domestic sector, however, the leading indicators improved steadily until July, although not as substantially as at the beginning of the year.
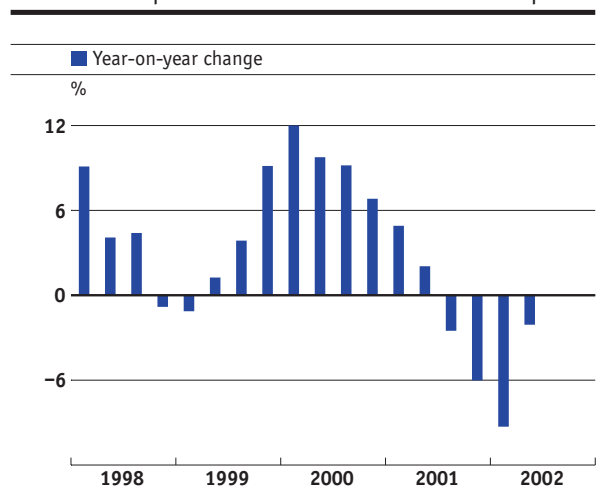
GDP   Graph 3.1

Smoothed, at prices of 1990
— Actual   ■ Year-on-year change
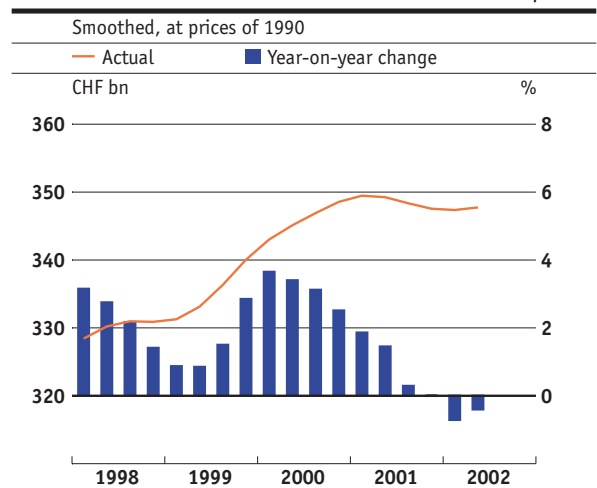
Industrial activity   Graph 3.2

Smoothed, by export shares
— 0–33%   — 66–100%   — Total
Balance

Industrial output   Graph 3.3

■ Year-on-year change
%

Graph 3.1:
Annualised estimate for the quarter
Source: seco

Graph 3.3: Source: SFSO

Graph 3.2: The synthetic index of industrial activity consists of the results of the following four questions: orders received and output compared with the corresponding year-earlier month, as well as evaluation of the order backlog and of the finished goods inventories.
Source: Swiss Institute for Business Cycle Research at the Federal Institute of Technology (KIF/FIT)

3.2 Foreign trade and current account

Slightly stronger exports

Swiss exports of goods in the second quarter were, for the first time again, slightly higher than a year previously (0.4%), following three straight quarters of considerable declines. They picked up steam compared with the previous period as well. Positive momentum was created, in particular, by growing demand from the US, the emerging economies of Asia and some EU countries.

Exports of consumer goods exhibited the steepest rise, with demand for pharmaceutical products and clothing developing at an above-average pace. Shipments of raw materials and semi-manufactures, too, surpassed their year-back level for the first time in three quarters (1.3%). Exports of capital goods, however, continued to fall, yet at a much slower rate (−5.1%). While exports of the machinery and electronics industry dropped once more, deliveries of precision instruments, in particular, expanded.

Mixed demand from the EU

Overall, (nominal) exports to the EU countries again declined slightly in the second quarter, falling 2.0% below the previous year's level. Compared with the previous period, however, the downward trend eased. Whereas exports to Germany and Britain were significantly lower than a year earlier (−9.4% and −7.7% respectively), exports to France climbed again for the first time following three declining quarters (9.0%). Exports to Italy also advanced further (3.4%).

Real exports by use[1]
Change from previous year in percent

Table 6

| | 2000 | 2001 | 2001 | | | 2002 | |
			Q2	Q3	Q4	Q1	Q2
Total	**7.1**	**2.1**	**3.8**	**−1.4**	**−1.6**	**−5.6**	**0.4**
Raw materials and semi-manufactures	9.6	−1.5	−0.8	−4.6	−7.3	−7.7	1.3
Capital goods	9.9	0.2	3.1	−3.4	−7.8	−12.5	−5.1
Consumer goods	2.4	6.7	8.2	3.2	8.8	2.0	4.3
Export prices	3.3	2.0	4.5	2.0	−0.8	−0.1	−0.6

Real imports by use[1]
Change from previous year in percent

Table 7

| | 2000 | 2001 | 2001 | | | 2002 | |
			Q2	Q3	Q4	Q1	Q2
Total	**7.0**	**−0.4**	**1.4**	**−0.4**	**−8.4**	**−6.2**	**−0.6**
Raw materials and semi-manufactures	8.1	−1.2	4.5	−4.0	−10.1	−9.2	−2.6
Energy sources	−0.8	9.3	13.2	1.4	10.4	11.9	0.0
Capital goods	8.5	−5.8	−6.5	−5.3	−16.2	−14.0	−8.4
Consumer goods	5.8	3.3	4.5	5.6	−3.1	−0.3	6.6
Import prices	6.0	1.6	5.1	−0.2	−1.2	−3.1	−3.5

1 Without precious metals, precious stones and gems as well as objets d'art and antiques (total 1).
Source: Swiss General Directorate of Customs

Demand stimuli from the US, Asia and Eastern Europe

The most significant positive demand stimuli came from the US, the emerging economies of Asia and from Eastern Europe. Exports to the US topped the year-earlier level by 4.1% after three quarters of sometimes steep falls. The Asian emerging economies had a 5.1% higher demand for Swiss goods. While demand from China and the Central European countries also exhibited positive development, exports to Japan plummeted once more (−16.7%).
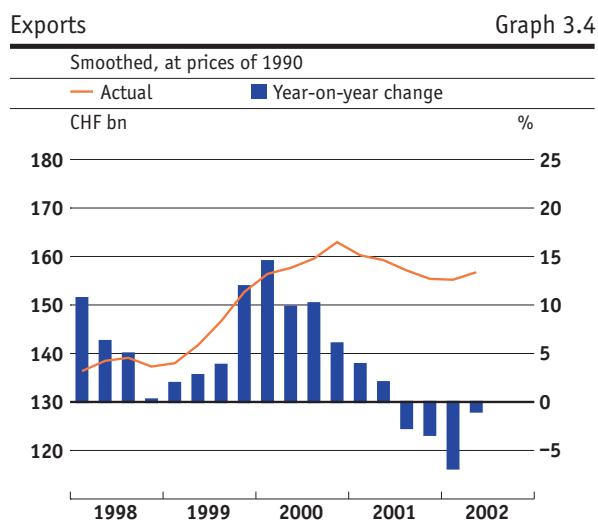
No clear turnaround yet

Real exports continued to rise in July compared with the previous month. Given the fragile global economic situation, which is mirrored in the unsatisfactory development of orders received in the Swiss export industry, a renewed setback cannot, however, be ruled out.
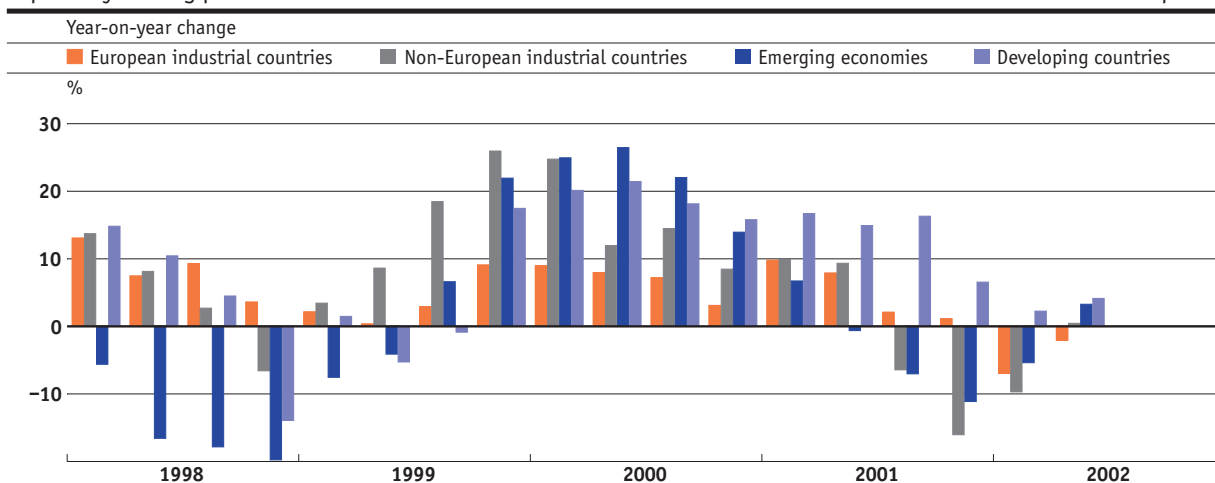
Imports back at year-earlier level

Real imports of goods were considerably higher in the second quarter compared with the previous period. At 0.6%, the corresponding year-back level was only slightly missed, following a decline of −6.2% in the first quarter.

Second-quarter imports of capital goods were, for the fifth time in a row, below the previous year's level (−8.4%); however, the rate of decline decelerated compared with the previous quarters. The same holds true for imports of raw materials and semi-manufactures, which fell by 2.6% from the previous year. Imports of consumer goods regained considerable ground (6.6%) for the first time since the end of 2001. Imports of pharmaceutical products exhibited especially vigorous growth, but there were still no signs of a turnaround in consumer durables.

Exports   Graph 3.4

Smoothed, at prices of 1990
— Actual   ■ Year-on-year change
CHF bn   %

Exports by trading partners   Graph 3.5

Year-on-year change
■ European industrial countries   ■ Non-European industrial countries   ■ Emerging economies   ■ Developing countries
%

Graph 3.4: Annualised estimate for the quarter, incl. precious metals, precious stones and gems as well as objets d'art and antiques (total 2).
Source: seco

Graph 3.5: Without precious metals, precious stones and gems as well as objets d'art and antiques (total 1).
Source: Swiss General Directorate of Customs

Lower export and import prices – higher terms of trade

In the second quarter, export prices, measured by average prices, fell by 0.6% year-on-year after having edged 0.2% lower in the first quarter. Import prices fell substantially more (−3.5%), with the decline in the prices of capital goods and energy sources being particularly pronounced. Overall, the relationship between export and import prices (terms of trade) improved by 2.9% (first quarter: 3.0%) within a year.

Current account surplus widened again

In the second quarter, nominal imports again weakened much more significantly, by 4.0%, than nominal exports, which virtually stagnated year-on-year (−0.2%; special trade, not working-day adjusted). The trade balance closed with a surplus of Sfr 1.5 billion, following a small positive balance in the previous year. Total goods trade, which also includes trade in electrical energy, and imports and exports of precious metals, precious stones, gems, etc., recorded a surplus (Sfr 0.7 billion), following a deficit a year earlier.

The surplus from services shrank by Sfr 1 billion year-on-year to Sfr 5 billion. Receipts from tourism and the banks' income from financial services again receded considerably. Receipts from international transportation and the insurance companies' earnings from services dropped as well. The surplus from labour income and investment income amounted to Sfr 5.5 billion, slightly less than in the second quarter 2001. This decline was due to lower net earnings from portfolio investment and direct investment.

Compared with the corresponding year-back quarter, the current account surplus rose by Sfr 0.3 billion to Sfr 9.7 billion in the second quarter. The share in nominal GDP was 9.1%, as against 9% in the year-earlier quarter.

Current account Balances in billions of Swiss francs   Table 8

| | 2000[1] | 2001[2] | 2001[2] | | | 2002[3] | |
			Q2	Q3	Q4	Q1	Q2
Goods	−4.2	−4.6	−1.2	−0.7	0.9	0.1	0.7
Special trade	−2.1	1.7	0.2	0.1	1.6	0.9	1.5
Services	25.6	24.2	6.0	5.7	5.3	7.9	5.0
Tourism	2.4	2.0	0.0	0.4	0.0	1.3	−0.2
Labour income and investment income	35.7	21.4	5.9	3.1	7.0	5.0	5.5
Investment income	43.5	30.0	8.0	5.3	9.2	7.3	7.8
Current transfers	−4.9	−6.9	−1.3	−2.2	−2.2	−2.2	−1.5
Total current account	**52.2**	**34.1**	**9.4**	**5.9**	**11.0**	**10.8**	**9.7**

1 Revised
2 Provisional
3 Estimates

3.3 Investment

Investment activity remained subdued in the second quarter. This was especially true for equipment investment, which plummeted again. Construction investment, by contrast, continued to show muted growth. Overall, investment in fixed assets fell 8.7% below the previous year's level.

Slight increase in construction investment

Construction investment expanded slightly in the second quarter compared with the previous period and exceeded the year-earlier level by 1.7%. According to the quarterly construction survey by KOF/FIT, the majority of building contractors still considered business to be difficult. Whereas the situation in foundation engineering was again judged more pessimistically, signs of a stabilisation in building engineering emerged. This is also reflected by the number of newly built apartments, which was up 3% in the second quarter compared with the previous year.

Stagnation in the second half of 2002

In the second half of 2002, construction investment in general is not likely to provide any stimuli. Residential construction will probably perform best. In the first half of 2002, the number of building permits issued for new apartments was nearly 5% higher than a year earlier. Figures published by Wüest&Partner on the development of supply and prices point to a consistently strong excess demand for residential space. Residential construction is also underpinned by the low mortgage rates and falling construction costs. In April, prices for residential construction were 0.2% lower than a year ago; the previous survey of October 2001 had reported a 1.9% increase. As regards industrial construction, there are no signs of improvement yet. The excess supply of office and commercial space rose steeply in the second quarter, which means that projects will generally be postponed or trimmed down for some time to come. Construction volume in foundation engineering, which is strongly influenced by the large infrastructure projects, is likely to develop more or less as in the previous year, thus not generating any stimuli for growth.
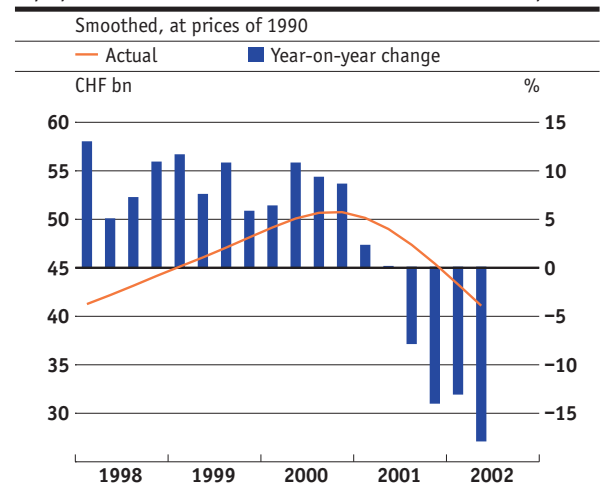
Construction investment 2001

The system of national accounts for 2001, published by the SFSO in September, showed significantly revised figures for real construction investment, which dropped by 4.8% after the quarterly GDP estimate had suggested a 1.3% increase. The clear decline is attributable to the development of investment in foundation engineering, which dwindled by 11% after several large private and public infrastructure projects had entered into their finishing stages in 2001. Investment in building construction slipped by approximately 3% in real terms, mainly due to sharply declining investment in residential construction. It should be noted that the figures on construction investment are based on the provisional data published in July 2002 and will most probably have to be revised next year.

Construction investment   Graph 3.6

Smoothed, at prices of 1990
— Actual   ■ Year-on-year change
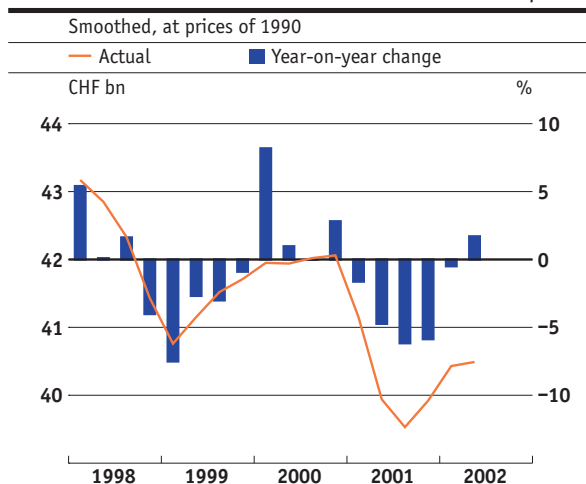
Equipment investment   Graph 3.7

Smoothed, at prices of 1990
— Actual   ■ Year-on-year change

Graphs 3.6 and 3.7:
Annualised estimate for the quarter
Source: seco

Steep fall in equipment investment

Second-quarter equipment investment plummeted again compared with the previous period, falling almost 18% short of the year-earlier level. This development was reflected both in declining imports of capital goods and in dwindling sales of Swiss capital goods (Swissmem survey).

No turnaround in sight yet

Given the unsatisfactory business situation in industry and the gloomy earnings reports, a turnaround in equipment investment is unlikely in the short term. Although domestic orders received in the Swiss machinery, electronics and metal industry stabilised in the second quarter and the downtrend in seasonally and trend-adjusted imports of capital goods slowed, an increase in equipment investment is to be expected only once the economic climate has improved substantially.

3.4 Consumption

Weaker growth in private consumption

Private consumer spending was up 1% in the second quarter from the previous period (annualised rate). It thus remained on its moderate growth path which, according to the revised figures, started in the third quarter 2001. In a year-on-year comparison, private consumption grew by 0.5%, as against 1.6% in the first quarter.

The indicators suggest that demand for consumer goods as well as for services rose at a much slower pace than a year earlier. From April to June, real turnover in the retail industry, on average, fell 0.4% short of its corresponding year-back level after having expanded by 2.8% in the first quarter. The number of newly registered motor cars was 7.6% down from the previous year's level, and the number of domestic overnight stays in hotels diminished by 2.0% (first quarter: −2.0% and −9.3% respectively).

Consumer sentiment gloomy

The consumer confidence index compiled at the beginning of July fell from the previous survey in April, from −9 points down to −18 points. It thus again hit the level it had reached in October 2001 in the aftermath of the terrorist attacks of 11 September. Households judged especially the development of the economy and the financial situation in the past twelve months to be significantly less favourable than in their previous assessment. Future economic prospects and job security were also deemed to be considerably worse than in the previous survey three months ago.

According to the retail trade survey by KOF/FIT, business activity deteriorated clearly since April and was only barely satisfactory in July. Despite this disappointing development, the retail trade industry remains optimistic about the prospects for the coming three months. The hotel and restaurant industry, however, anticipates shrinking demand.

Private consumption   Graph 3.8

Smoothed, at prices of 1990

— Actual   ■ Year-on-year change
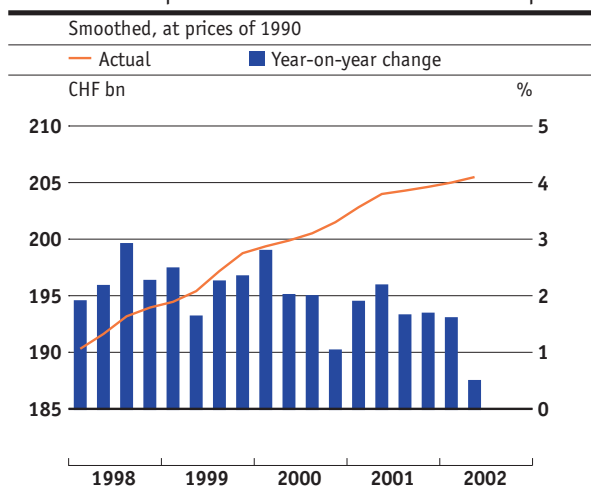
Annualised estimate for the quarter
Source: seco

3.5 Capacity utilisation

The rate of utilisation of the production factors in a national economy is of considerable significance for assessing inflation and deflation risks. This rate may be estimated on the basis of two indicators, the output gap and the utilisation of technical capacities in industry. The (positive or negative) output gap measures the deviation of actual real GDP from the production potential, which must be estimated empirically. Capacity utilisation in industry is computed based on business surveys of the average utilisation of production units.

Negative output gap widens

Since the beginning of 2001 business activity has been waning; this was reflected in the development of the output gap. Since real GDP grew at a slower pace than the production potential, the output gap narrowed continuously from a slightly positive value in the fourth quarter 2000 (0.6%) to −1.8% in the second quarter.

Slightly rising capacity utilisation in industry

By contrast, capacity utilisation in industry according to the KOF/FIT survey rose slightly in the second quarter. The value adjusted for seasonal and random factors amounted to 80.6% compared with 80.3% in the previous period. It thus continued to fall distinctly short of the long-term average of 84%. Moreover, a growing number of enterprises regarded production capacities as too high. A lack of demand was still listed as the chief obstacle to production.

3.6 GDP forecasts for 2002 and 2003

The National Bank expects real GDP to come close to stagnation in 2002 after still having forecast an increase of 1% in June. On the whole, negligible stimuli only are likely to emanate from domestic demand in the second half-year. Given the weak economic growth in major markets, exports, too, will hardly stage a recovery.

A number of institutions and banks also revised their economic forecasts for 2002 downward in the third quarter. On average, in September they expected a rise in real GDP of 0.8% following projected growth of 1.2% in June. The forecast of the Business Economists' Consensus (BEC)[1] for GDP growth amounted to 0.3% at the end of September. It thus was 0.9 percentage points lower than in the previous survey in June.

The forecasts for 2003 also underwent a downward adjustment. The institutions and banks now expect the Swiss economy to grow by 1.8%, following 2.2% in June 2002. The forecast of the BEC amounted to 1.5% (June: 2.1%).

Capacity utilisation   Graph 3.9
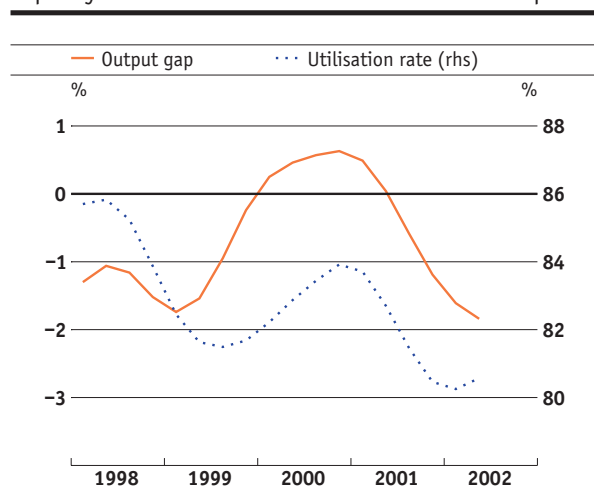
Sources: SNB, KOF

[1] A total of 20 economists from banks, companies and economic research institutes participated in the quarterly Business Economists' Consensus (BEC) at the end of September 2002. It is conducted and analysed by the Economics and Treasury Section of Zürcher Kantonalbank on behalf of Business Economists.

4 Labour market

4.1 Employment

Declining employment

Employment declined for the third time in succession in the second quarter. Compared with the previous period, it diminished by 0.4%, falling short of the corresponding year-earlier level by 0.3%. The decline affected full-time employment only, which dropped by 0.5% from the first-quarter level and by 1.3% year-on-year. By contrast, the number of persons working between 50% and 89% increased by 0.7% and 3.9% respectively. The figures for part-time employment of less than 50% remained unchanged.

Staff was reduced mainly in the industrial and construction sectors. The number of employed persons diminished in these two sectors by 0.7% each compared with the previous period and fell 2% and 2.5% respectively year-on-year. Jobs were cut in practically all sectors. In the service sector, employment declined by 0.1%, still exceeding the previous year's level by 0.4%. Jobs were shed mainly in trade, the hotel and restaurant industry, in insurance and services for enterprises.

Weaker demand for labour

Sluggish economic development also affected the assessment of staff capacities. According to the quarterly survey in the industrial sector by KOF/FIT, enterprises continued to consider their workforces to be excessive. The same applied to an even greater extent to the construction sector. The employment forecasts by the SFSO deteriorated further in the second quarter, with the service sector also being affected, notably banks and insurance companies.

Following a temporary rise in March and April, the Manpower Index, which measures the space occupied by job advertisements in Swiss newspapers, declined again until July. The vacancies index calculated by the SFSO based on a survey also continued to recede in the second quarter.

Labour market Figures not seasonally-adjusted   Table 9

|	2000	2001	2001 Q2	Q3	Q4	2002 Q1	Q2	July	August
Full- and part-time employed[1]	2.2	1.1	1.0	1.1	0.4	−0.3	−0.3	–	–
Full-time employed[1]	1.0	0.7	0.7	0.5	0.0	−1.0	−1.3	–	–
Unemployment rate[2,3]	2.0	1.9	1.7	1.7	2.1	2.6	2.5	2.6	2.7
Unemployed[3]	72.0	67.2	61.1	61.1	77.3	93.5	91.2	93.0	96.4
Jobseekers[3]	124.6	109.4	103.2	100.8	119.9	139.8	139.7	142.3	145.2
Persons on short working hours[3]	0.7	2.4	0.8	1.5	6.6	13.6	11.6	3.5	–
Registered vacancies[3]	13.5	12.4	13.9	11.4	10.6	10.5	10.3	9.6	8.9

1 Change from previous year in percent
2 Registered unemployed in percent of the economically active population according to the 1990 national census (working population: 3,621,716 persons)
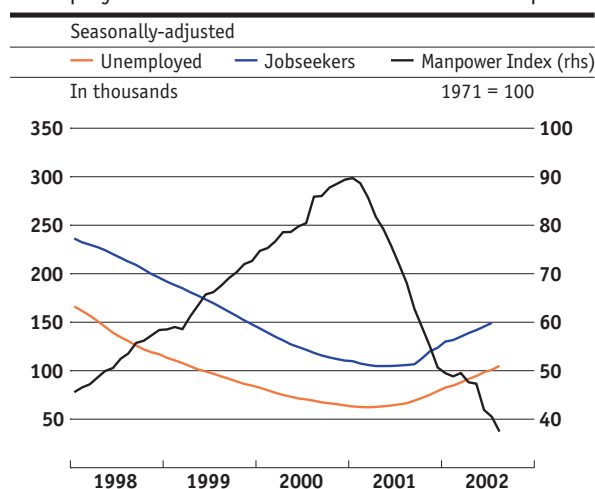
3 In thousands; yearly and quarterly values are averages of monthly values
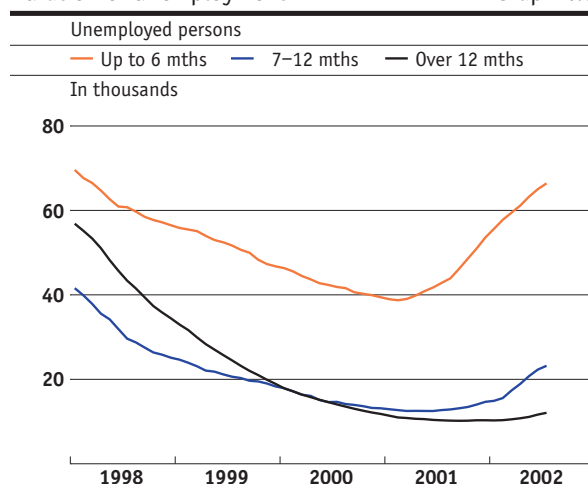Sources: SFSO, seco

Full- and part-time employment

Graph 4.1

Seasonally-adjusted

— Over 90%　— 50–90% (rhs)　— Up to 50% (rhs)

In thousands　　　　　　　　　　In thousands
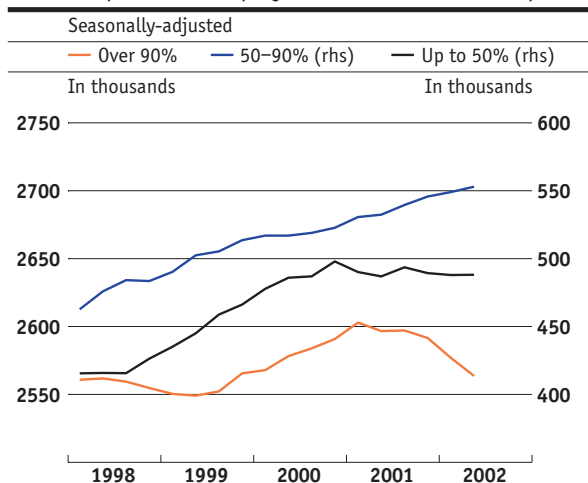
Unemployment and vacancies

Graph 4.2

Seasonally-adjusted

— Unemployed　— Jobseekers　— Manpower Index (rhs)

In thousands　　　　　　　　　　1971 = 100

Duration of unemployment

Graph 4.3

Unemployed persons

— Up to 6 mths　— 7–12 mths　— Over 12 mths

In thousands

Graphs 4.1, 4.2 and 4.3:
Source: SFSO

4.2 Unemployment

Further rise in unemployment

The number of unemployed persons mounted between April and July from 91,600 to 101,000 persons, and the unemployment rate rose by 0.3 percentage points to 2.8% (seasonally-adjusted). The rate of jobseekers increased in a similar proportion. It rose from 3.8% to 4.1%, equivalent to just under 150,000 jobseekers.

Rising unemployment – since mid-2001 – extended the average duration of unemployment. At first, unemployment figures only rose for persons who had been out of a job for less than six months; since the beginning of 2002, unemployment has also been mounting in the seven to twelve month category. In the months ahead, long-term unemployment, which had only increased negligibly in the second quarter, is also expected to grow markedly.

Unemployment rose to approximately the same extent in all three regions. In the Ticino, it grew by 0.4 percentage points to 4% between April and July, in the French-speaking and in the German-speaking parts of Switzerland by 0.3 percentage points each to 3.7% and 2.5% respectively.

Significantly more short-time work

Parallel to the number of unemployed, short-time work also increased significantly in the second quarter. A large proportion of short-time staff were employed in the capital goods sector, which is particularly affected by the current slump in business activity. The introduction of short-time work enables enterprises to lower labour costs without having to resort to layoffs. If the economy recovers, no costs will arise for the recruitment of new staff. Short-time work is an instrument for bridging staff overcapacities in the short term. In the event of continuously weak demand, further job cuts are a strong possibility. The decline in short-time work to 8,800 persons, which was observable in July, is probably due to this effect.

5 Prices

5.1 Consumer prices

Annual inflation measured by the national consumer price index fell from 0.6% to 0.5% between May and August. The general trend towards a slowdown in price rises thus continued. In July, the consumer price index was 0.1% below the year-earlier level. The main reason for this temporary decline in the index was the data on clearance sales prices in the category "clothing and footwear", which had been collected a month earlier than formerly. Without this special effect, annual inflation would have amounted to 0.5%. Inflationary pressure on domestic goods and services eased further due to persistently sluggish business activity, and inflation-dampening effects continued to emanate from imported consumer goods.

Further decline in domestic inflation

In domestic consumer goods, annual inflation diminished by 0.3 percentage points to 1.3% in June, an unchanged level in July and August. The decline was particularly pronounced in domestic goods. Annual inflation in this category had still amounted to 1.8% in January and dropped to 0.7% by August. By contrast, price pressure in the service sector only eased marginally. In August, the rent index exceeded the corresponding previous year's level by 0.8%, following 0.9% in the previous survey in May. Annual inflation in other private services, which account for approximately half of the basket of services, declined by 0.3 percentage points to 1.8% between May and August. Price increases for public services stabilised at 1.6%.

Accelerated price decline on imported goods

After the price-curbing effect of imported consumer goods had virtually petered out in April (−0.7%), the index of imported goods again remained well below the year-earlier level from May onwards. In August, a year-on-year decline of 2.0% was recorded. A contributing factor continued to be price reductions for oil products, which in August fell short of the previous year's level by 7.8%. The higher external value of the Swiss franc also continued to keep the lid on prices.

Breakdown of the national consumer price index
Change in percent

Table 10

	2001	2001 Q4	2002 Q1	Q2	May	June	July	August
National consumer price index total	**1.0**	**0.4**	**0.6**	**0.7**	**0.6**	**0.3**	**−0.1**	**0.5**
Domestic goods and services	1.7	1.8	1.8	1.5	1.6	1.3	1.3	1.3
Goods	1.5	1.5	1.8	1.2	1.4	0.6	0.5	0.7
Services	1.8	1.9	1.7	1.6	1.6	1.6	1.5	1.4
Private services without rents	1.5	1.9	2.0	2.0	2.1	2.0	1.8	1.8
Rents	2.8	2.2	1.6	1.1	0.9	0.9	0.9	0.8
Public services	0.5	1.1	1.3	1.6	1.6	1.6	1.6	1.6
Imported goods and services	−1.2	−3.5	−3.0	−1.8	−2.0	−2.6	−3.9	−2.0
Without oil products	−0.4	−0.7	−1.8	−0.1	−0.3	−0.7	−3.0	−0.9
Oil products	−4.7	−16.0	−9.7	−10.2	−10.4	−12.9	−8.5	−7.8

Sources: SFSO, SNB
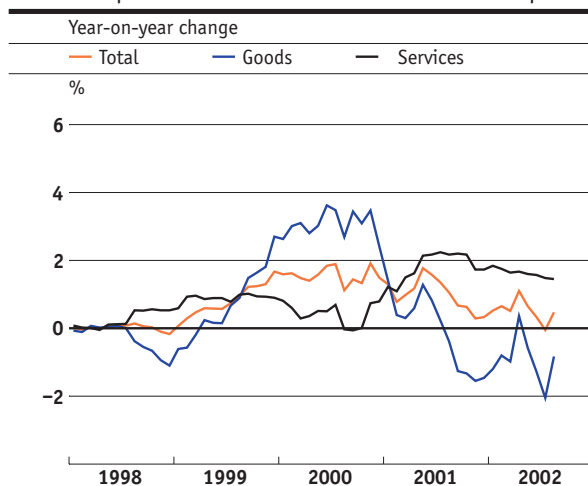
5.2 Core inflation

Slightly lower core inflation of the SNB

Since inflation measured by the national consumer price index is subject to numerous short-term effects that tend to obscure the view on the general price trend, the National Bank computes a core inflation rate. This core inflation rate excludes, in any period, those 15% of goods with the highest annual inflation rate and the 15% of goods with the lowest annual inflation rate from the commodities basket of the consumer price index. In June, core inflation of the National Bank dropped by 0.2 percentage points to 0.9%, where it remained in July and August. This decline reflects the cyclically-induced lower inflationary pressure. The fact that core inflation exceeds inflation as measured by the national index shows, moreover, that the inflation-dampening special factors carry more weight than inflationary influences.
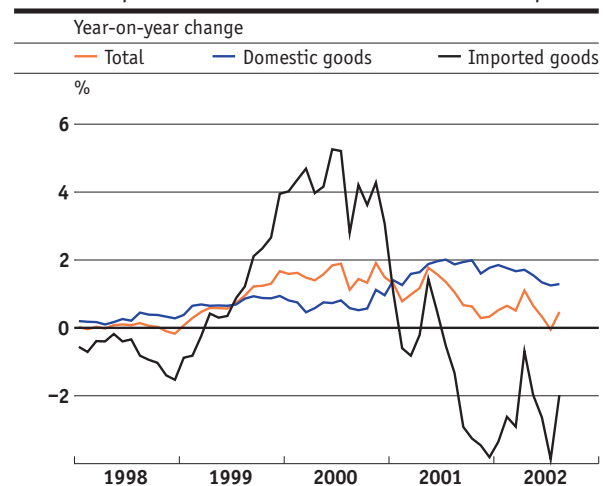
... and of the SFSO

The two core inflation rates calculated by the SFSO always exclude the same goods from the commodities basket. In the case of core inflation 1, these are foodstuffs, beverages, tobacco, seasonal products, energy and fuel. Core inflation 2 also excludes products with administered prices. Compared with May, the two core inflation rates declined by 0.2 percentage points each and amounted to 0.7% and 0.6% respectively in August.

Consumer prices — Graph 5.1

Year-on-year change
— Total — Goods — Services
%

Consumer prices — Graph 5.2

Year-on-year change
— Total — Domestic goods — Imported goods
%

Graphs 5.1, 5.2:
Sources: SFSO

5.3 Prices of total supply
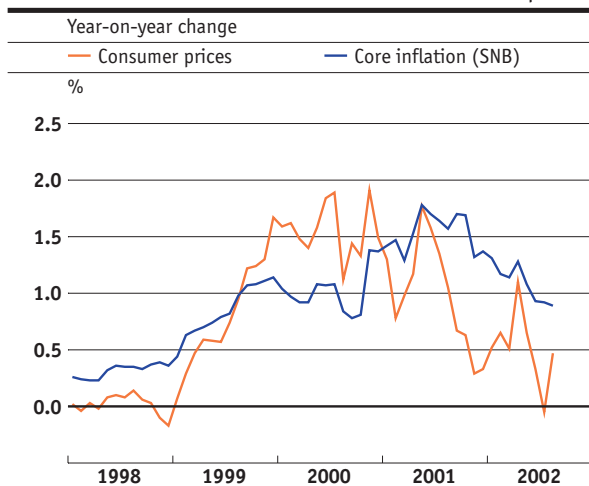
Stabilisation of prices of total supply

The price index of total supply (producer and import prices) again dropped slightly between May and August after the decline in March and April had come to a standstill. This was attributable to imported goods, which became cheaper – not least due to the firming of the Swiss franc. The price level for goods manufactured in Switzerland remained stable. Thus, as hitherto, no inflationary stimuli for the downstream consumer level emanate from producer and import prices.

In August, producer prices fell 0.6% short of the previous year's level. This decline was due to price cuts for semi-manufactures (−1.8%). By contrast, prices for consumer goods and capital goods topped the previous year's level (1.1% and 0.5% respectively). For the first time in two years, the price index for raw materials surpassed the year-earlier level (+2.0%). While the prices of goods produced in Switzerland for the domestic market fell by 0.6% compared with the previous year, export goods became cheaper by 0.4%.
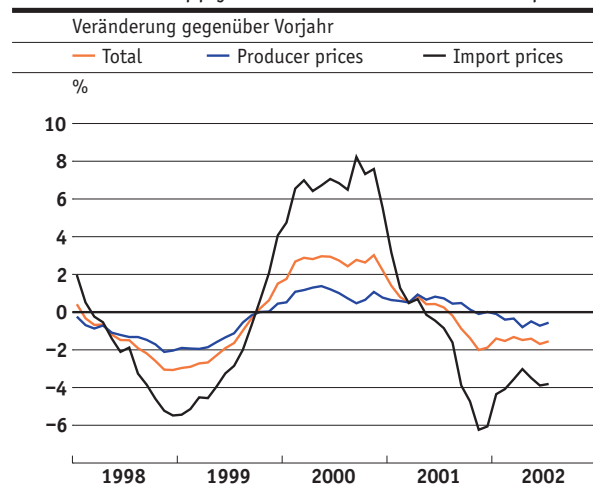
In August, the index figure for imported goods was 3.3% lower than a year earlier. Prices continued their downward trend in all four categories of goods. This trend was particularly pronounced in the case of raw materials and semi-manufactures (−6.1% and −3.6% respectively). Consumer goods and capital goods did not become cheaper to the same extent (−3.0% and −2.2% respectively).

Core inflation	Graph 5.3

Year-on-year change
— Consumer prices   — Core inflation (SNB)

Sources: SFSO, SNB

Prices of total supply	Graph 5.4

Veränderung gegenüber Vorjahr
— Total   — Producer prices   — Import prices

Source: SFSO

6 Inflation prospects

6.1 International price development

Inflation-dampening effects from abroad

Fears concerning an imminent US attack on Iraq and possible delivery bottlenecks pushed up the oil price per barrel of Brent crude oil from approximately 23 dollars to at times just under 29 dollars between June and mid-September. The higher prices, however, were offset by the US dollar's depreciation vis-à-vis the Swiss franc. Expressed in Swiss francs, the price for crude oil was even somewhat below the previous year's level. The situation on the crude oil market is not expected to ease in the coming months. In addition to the continuing political tension, the seasonally induced higher demand for oil also stands in the way of a price decline. As a result of the weak growth of the global economy, inflationary pressure on other import goods is likely to remain insignificant, however – a development which is further reinforced by the stronger Swiss franc. Contrary to our assessment in June, we now expect that the price index for imported consumer goods will be slightly below the corresponding year-earlier level by the end of the year.

6.2 Price development in Switzerland

Hardly any cyclical inflationary stimuli

As a result of the weak economy, domestic inflation on the consumer level has eased considerably since the beginning of the year. An appreciable economic upturn is unlikely in the short term. The situation on the labour market, in particular, will probably only improve during the course of 2003 so that cost pressure from the wage front is not expected to intensify for the time being. Furthermore, producer and import prices – which can be considered as a measure for the price development of intermediate services – are not expected to produce any inflationary stimuli. Together with a continually highly competitive market, there will therefore still be little leeway for price increases.

Rents slightly higher

Rents for apartments account for roughly 20% of the basket of goods that make up the consumer price index. Therefore, the future development of such rents is of particular importance for assessing inflationary prospects. Contrary to our expectations, the August survey revealed a drop in annual rent increases from 0.9% to 0.8%. Apartments are likely to remain in tight supply in the short term, which means that landlords can raise the rent for a new tenant or when an apartment is rented for the first time. We therefore expect apartment rents to go up somewhat in the months ahead. The lowering of mortgage rates in August is expected to be passed on to the tenants next spring and will therefore cushion rent increases.

6.3 Inflation forecast for 2002–2004

At its quarterly assessment of the situation on 19 September 2002, the National Bank left the target range for the three-month Libor rate unchanged at 0.25%–1.25%, after having last lowered it by half a percentage point on 26 July 2002.

The National Bank views the prospects for the global economy less optimistically than at the last quarterly assessment of the situation on 11 June 2002. Economic growth both in the US and in Europe is unlikely to pick up speed before the spring of 2003 and regain its potential. For this reason, the economic upswing is taking hold only gradually in Switzerland as well. According to the National Bank's assessment, the Swiss economy will see only moderate growth rates until mid-2003. The negative output gap will thus remain for some time.

As a result of the delayed economic rebound in Switzerland, the National Bank expects inflation to be lower during the next quarters than it had anticipated at the quarterly assessment in June. Low interest rates and the relatively significant growth of monetary aggregates do not jeopardise price stability under the current circumstances.

7 Economic situation from the vantage point of the SNB's bank offices

The bank offices of the National Bank are constantly in touch with a large number of enterprises from various sectors of the economy. Their reports, which contain the subjective evaluations of the enterprises, are an important additional source of information for assessing the economic situation. In the following, the results of the talks held from May to August on the current and future economic situation are summarised.

7.1 Production

Most companies hardly saw any improvement in business from April to August. Business was unsatisfactory not only in the industrial sector, but many companies in the services sector were faced with the same situation. The flat economic development made for considerably stiffer competition in almost all sectors and put pressure on margins. Overall, a cyclical upturn is no longer expected this year.

Industry

Different industrial sectors exhibited a more mixed development during the last months than at the beginning of the year. The same applies to development within the same sector. While individual sectors – depending on their markets – experienced a certain recovery in demand, the situation in other areas and markets hardly changed. Many companies in the pharmaceutical and foodstuffs sectors, which are resistant to cyclical fluctuations, as well as suppliers of niche products, continued to achieve good results. However, most producers of capital goods and upstream goods (paper, metal and plastics industry, sub-suppliers to the construction industry), reported a continued fall in turnover and fewer orders. Suppliers of near-consumer products (textiles, watches, furniture) increasingly suffered from rather weak demand as well.

Services

Business deteriorated in many areas of the services sector. The hotel and restaurant industry and retail trade felt the subdued consumer sentiment. Sluggish sales of goods also had a negative impact on transport companies and logistics service providers. In the area of services provided for the business sector (consulting firms, the printing industry), the companies' cost-cutting measures left their mark, and in the financial sector, asset management felt the effects of the sombre mood in the equities markets.

Tourist industry

The tourist industry had a disappointing summer season and hoteliers were pessimistic about the second half of the year. The fact that there were fewer foreign guests from Germany, the US and Japan was particularly troubling. In addition to weaker demand from abroad, currency-related losses in revenue added to the strain. Many areas also saw the number of their Swiss guests dwindle so that the number of overnight stays was down in almost all regions and categories. Profiting from Expo.02, the Three Lakes Regions was an exception.

Construction

The mood in the construction sector was subdued overall, and the clear differences between regions and sectors, which had been observable for quite some time, remained. In some regions positive signs came from residential construction, and a number of construction companies benefited from large infrastructure projects. It appears that construction activity has stabilised on a lower level overall. The construction sector again reported insufficient demand and considers the price level to be too low.

7.2 Components of demand

Private consumption

After turnover of consumer goods had still registered increases up to the second quarter, the sales volume went down appreciably in the summer months. In particular, consumers showed considerably more restraint and were more price-conscious when purchasing clothing, furniture and electronics articles. Sales of luxury items fell off sharply, not least because foreign guests stayed away. Foodstuffs, pharmaceutical products and everyday goods, an area which had still exhibited satisfactory development, also showed a certain downward trend from June onward.

Equipment investment

Many companies were not able to fully utilise their available capacities. Investment was scaled back rigorously as a result. Only investment projects for replacing old machinery and equipment were carried out.

Exports of goods

There were some bright spots in the export area. Several sectors reported a slightly stronger demand from abroad. These sectors included producers from the pharmaceutical and foodstuffs industry as well as companies from the chemical industry and suppliers for the European automobile industry. While some precision instruments producers reported an increase in their turnover, only a few companies in the machinery industry were able to boost sales. Business of export-oriented companies was largely determined by their markets. While sales to the US, Asia (except Japan) and to Eastern Europe trended upward, sales to the big EU countries – Germany in particular – showed a disappointing development.

7.3 Labour market

During the summer months, many companies were forced to cut costs in order to prevent a further deterioration of their earnings situation. A wave of restructuring led to staff reductions, and short-time work was on the rise. Given the contraction in output, personnel resources were still deemed to be too high in many areas. Companies in the capital goods sector were most affected. The few sectors which still created new jobs reported wage claims to be clearly lower.

7.4 Prices and margins

Eroding margins were of major concern in most companies. On the one hand, competition – and thus the price war – became stiffer as a result of the weak demand. The stronger franc, on the other hand, led to lower revenue in most export-driven companies.

How accurate are GDP forecasts?
An empirical study for Switzerland

by Eveline Ruoss, Economic Analysis, and Marcel Savioz, Research,
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Despite their significance, economic forecasts do not have a very good reputation. The media frequently run reports on forecasts that have proved completely wrong. However, like weather forecasts, economic forecasts should not be condemned altogether simply because some have proved unreliable. It is surely preferable to form an opinion by looking at their accuracy over a relatively long period.

The first study of this type for Switzerland was carried about by Wasserfallen (1992). He showed that the forecasts for real gross domestic product (GDP) produced by nine selected forecasting institutes tended to slightly underestimate the real growth rates achieved between 1974 and 1991. He also showed that although the direction of changes in GDP was predicted correctly, the forecasts tended to overestimate the scale of such changes. The results indicated that there was very little difference in the accuracy of the forecasts made by the nine forecasting institutes. However, in view of the small sample, no significance test was carried out.

It is now ten years since this paper was published. Since then, there has been an increase in both the number of institutes producing regular forecasts and the frequency with which forecasts are issued. It therefore seems to make sense to examine this increased body of data on Swiss economic forecasting. The aim of this paper is to show what can be expected of economic forecasting. However, we do not intend to instigate a contest between the forecasting institutes. For this reason, the results are published without direct reference to the institutes.

In this paper we examine forecasts for annual growth in real GDP in Switzerland. We look at the forecasts made by 14 different organisations and institutes between 1981 and 2000. Unlike Wasserfallen (1992) and many surveys carried out for other countries (e.g. Öller and Barot, 2000), our study is not confined to the forecasts generated in the autumn for the following calendar year. As far as possible, we include all forecasts made by the institutes during the year for the current, following and next-but-one calendar year.

The paper is structured as follows. Section 1 outlines the data. In Section 2 charts and descriptive statistics are used to discuss the size of the forecast errors and whether the forecasts are unbiased and efficient. The third and fourth sections investigate whether the impressions gained from the charts and descriptive statistics are corroborated by econometric tests and whether the forecasts of the institutes are better than forecasts based on simple naive methods. In Section 5 we consider whether forecast errors would be lower if the estimates published by the Swiss Federal Statistical Office (SFSO) were taken as the outcome instead of the GDP growth data published by the State Secretariat for Economic Affairs (seco), which are released earlier. Section 6 contains a summary of our findings and conclusions.[1]

1 cf. Hendry and Ericsson (2001) for an introduction to interpreting and evaluating forecasts.

1 Data

1.1 Forecasts

This paper examines the forecasts for the percentage annual change in real GDP made by 14 different institutes, banks and organisations (referred to throughout as institutes). Alongside the Federal Commission for Economic Policy (KfK) and the Swiss National Bank (SNB), they include a number of commercial banks (CS, SBC, the old and the new UBS, and ZKB), international organisations (IMF, OECD) and various research institutes with organisational or personnel links to universities (BAK, CREA, KOF, MAT, SGZZ). Our sample thus includes all institutes which to our knowledge have published regular economic forecasts for Switzerland in recent years.

Table 1 gives the names and abbreviations of the 14 institutes in our sample. It also shows the start of the data series at each institute. The longest data series (KfK) goes back to 1971. Our evaluation is confined to the period 1981–2000 for two reasons: Firstly, the data set for the period before 1981 is relatively small because only a few institutes generated forecasts and some of these were for GNP rather than GDP. Secondly, the Swiss Confederation started to publish quarterly figures for real GDP in 1981. This greatly improved the information on real GDP during the year and probably influenced the quality of forecasting. Forecasts made since 1981 should therefore exhibit different statistical characteristics from those published before 1981.

The forecasts in our data set can be classified according to the month in which they were published and the period to which they refer. With reference to the forecasting horizon, we make a distinction between forecasts for (i) the current calendar year, (ii) the following calendar year and (iii) the next-but-one calendar year. The date when the forecasts were made is classified on the basis of the months (i) November, December and January, (ii) August, September and October, (iii) May, June and July and (iv) February, March and April. Aggregation over three-month periods mitigates the problem that with some institutes it is not always possible to determine exactly when a particular forecast was made.

Our classification gives 12 different forecasting horizons. h represents the number of months from the middle month in the three-month period in which the forecast was generated to the end of the calendar year to which it refers. The horizons $h = 0$ to $h = 9$ thus refer to forecasts for the current calendar year. $h = 0$ comprises forecasts made in November, December and (in some cases) January for the calendar year that is about to end/has just ended. $h = 12$ to $h = 21$ refer to forecasts for the next calendar year while

Forecasting institutes

Abbreviation	Name	Year when forecasting of real GDP growth commenced
BAK	BAK Basel Economics Ltd.	1983
CREA	Institute of Applied Macroeconomics, School of Higher Business Studies at the University of Lausanne	1977
CS[1]	Credit Suisse	1994
IMF	International Monetary Fund, Washington	1995
KfK	Commission for Economic Policy, Berne	1971[2]
KOF	Centre for the Research of Economic Activity at the Federal Institute of Technology in Zurich	1976
MAT	Aurelio Mattei, University of Lausanne	1977
OECD	Organisation for Economic Cooperation and Development, Paris	1981
UBS[3]	Union Bank of Switzerland, Zurich	1982
SBC[3]	Swiss Bank Corporation, Basel	1981
SGZZ	Center for Futures Research, St. Gallen	1976
SNB	Swiss National Bank	1977
UBS	UBS[4]	1998
ZKB	Zürcher Kantonalbank	1994

1 Vor 1997: Schweizerische Kreditanstalt (SKA).

2 Forecasts prior to 1980: Working Group for Economic Forecasts. From 1981: Economic Forecasting Subcommittee of the KfK.

3 Merged with SBC in December 1997 to form the new UBS.

4 Former Union Bank of Switzerland

$h = 24$ to $h = 33$ refer to forecasts for the next-but-one calendar year. $h = 33$ thus denotes the two-year forecasts produced in February, March and April, for instance forecasts made in March 1998 for the year 2000.

Table 2 shows the number of observations for each forecasting horizon and institute. The sample comprises a total of 766 observations. As the table shows, only a few institutes, i.e. KOF, KfK, the OECD and SBC (UBS "new" from 1998) generated 20 forecasts with the same forecasting horizon in the twenty-year period 1981–2000. This was principally because some of the institutes altered the timing of forecasts published during this time or did not make forecasts for some periods.

Almost all of the 766 forecasts were published. The sources are shown in the appendix. The exceptions are some of the forecasts by the SNB, which are taken from internal documents, specifically the mon-

etary policy reports for the coming year elaborated each autumn between 1974 and 1999. Unlike the corresponding press releases, these documents in most cases contain precise forecasting data. Where a figure is qualified as "nearly" we deduct 0.25 percentage points. Similarly, we add 0.25 percentage points to those figures qualified with "at least". In four cases, only qualitative data were available on future economic trends, so that for those years a forecast figure for the SNB is missing.

Despite the gaps in our data set, our chart analysis and descriptive statistics provide an initial picture of the accuracy of the forecasts. By contrast, the gaps detract from the econometric tests outlined in section 3. Consequently, these are confined to institutes for which we have complete data series, thus enabling us to use standard econometric tests to assess the accuracy of the forecasts.

Overview of forecasts by time horizon and institutes 1981–2000   Table 2

Date of forecast	Time horizon	BAK	CREA	CS	IMF	KfK[1]	KOF	MAT	OECD	UBS[2]	SBC[2]	SGZZ	SNB	UBS	ZKB	Total of observations
Forecast for the current calendar year																
November to January	h=0	6	5			20			20	16	17			3	2	**89**
August to October	h=3	17	13	7	6	20						19		3	7	**92**
May to July	h=6	4	1		1				20		9	1		2	6	**44**
February to April	h=9	13	13	6	6	8	19			10	17			3	6	**101**
Forecast for the following calendar year																
November to January	h=12	5	7			20		20	19	16	16		14	3	6	**126**
August to October	h=15	16	12	6	5	20						16		2	6	**83**
May to July	h=18	3	1						19		5			2	5	**35**
February to April	h=21	13	12	4	5	8	18			10	5			2	4	**81**
Forecast for the next-but-one calendar year																
November to January	h=24	4	8						12	11	5			2	4	**46**
August to October	h=27	15	11			14								1	1	**42**
May to July	h=30	2	1								1					**4**
February to April	h=33	13	10													**23**
Total		**111**	**94**	**23**	**22**	**57**	**91**	**20**	**90**	**63**	**75**	**36**	**14**	**23**	**47**	**766**

1 From 1993 including the spring forecasts by the Swiss Confederation's Expert Group for Economic Forecasting

2 UBS and SBC merged in December 1997 to form the new UBS.

1.2 Outcomes

To assess the quality of the forecasts, they are compared with the actual GDP figures. Since GDP is normally revised several times, it is necessary to decide which figure to take as the outcome. Following the literature, we use the first available estimate for real GDP growth. In our case, this is the annual average calculated by the State Secretariat for Economic Affairs (seco) in March of each year on the basis of its quarterly estimates.[2]

The period 1981–2000 contains two business cycles. It thus includes both recessions and upswings, making it suitable for judging the accuracy of economic forecasts. On the basis of the seco data, annual average growth in real GDP was 1.4%. In six years, real GDP declined. The sharpest decline was 1.3% in 1982. The highest growth rate was 3.4% in 2000. The median is 1.95%, which is well above the average growth rate. This shows that the distribution of the rates of change in GDP in the period 1981–2000 is not symmetrical; downtrends (negative growth rates) have a greater impact than high growth rates. The standard deviation (SD), i.e. the square root of the squared deviations from the mean outcome, is 1.548. We use this figure as a benchmark.

## 2 How accurate are GDP forecasts?

2.1 Chart analysis

Figures 1 and 2 provide an initial insight into the quality of the forecasts. Fig. 1 shows the results for horizons $h = 0$ to $h = 9$, while the results for horizons $h = 12$ to $h = 21$ are shown in Fig. 2. The left-hand column in each chart contains four scatter diagrams while the right-hand column contains four time series plots. The curves show the GDP growth rates forecasts by the various institutes against the actual values (blue line). The deviations between the actual GDP growth rates and the forecasts indicate the development of forecast errors over time.

In the scatter diagrams, the x-axis represents actual GDP growth and the y-axis forecasts of GDP growth. Forecast errors, which are defined as the difference between the actual and forecast growth rate, correspond to the horizontal distance from a point to the 45° line. The closer the plots are to the 45° line, the more accurate the forecasts. The four squares indicated with Roman numerals show whether the direction of the GDP trend was forecast accurately. If the points are in squares I or III, a rise or decline in real GDP was anticipated correctly. By contrast, if the points are in squares II or IV, the institutes predicted the wrong direction, i.e. a rise rather than decline in GDP (square IV) or a fall rather than a rise (square II).

How accurate are the forecasts? Fig. 1 shows that the accuracy of the 89 h0-forecasts included in our evaluation is good. The projections generated in November to January for the current/last calendar year are close to the 45° line. The wrong direction was only forecast in one case, with a rise rather than a decline in GDP being anticipated. The forecasts for $h = 3$, i.e. forecasts made between August and October, are also close to the 45° line. By contrast, the forecasts for $h = 9$ (February to April) are a good deal less reliable. They scatter widely and in about a fifth of cases a rise in real GDP was indicated, when the actual trend was a decline.

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2   From 1981–1986 the quarterly GDP estimates were carried out be the Swiss Federal Statistical Office (SFSO), which is part of the Federal Department of Home Affairs. In 1987 this task was entrusted to the Federal Office for 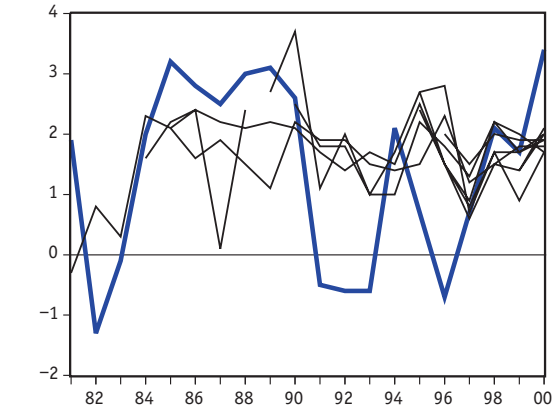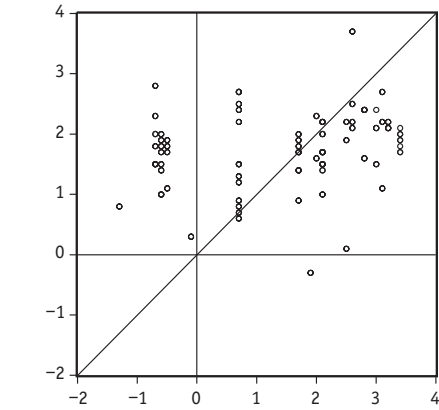Economic Questions within the Federal Department of Economic Affairs. Since 1999 the quarterly estimates for GDP have been calculated by the State Secretariat for Economic Affairs (seco).

November to January (h=0)

August to October (h=3)
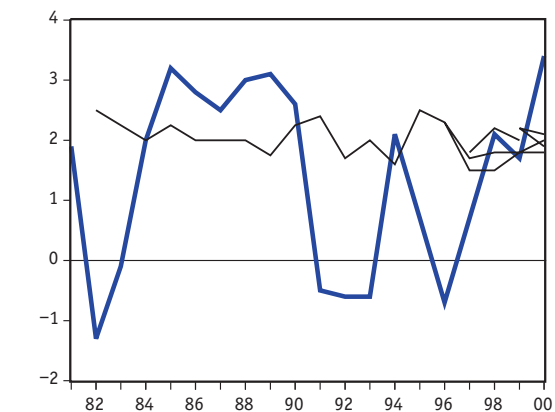

May to July (h=6)

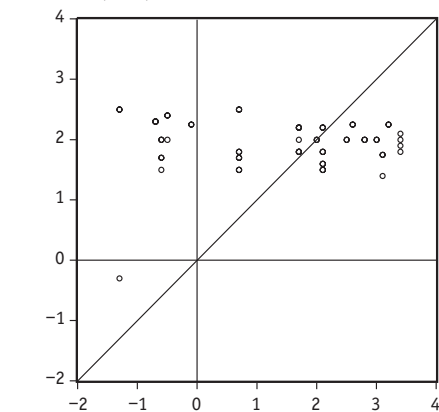February to April (h=9)
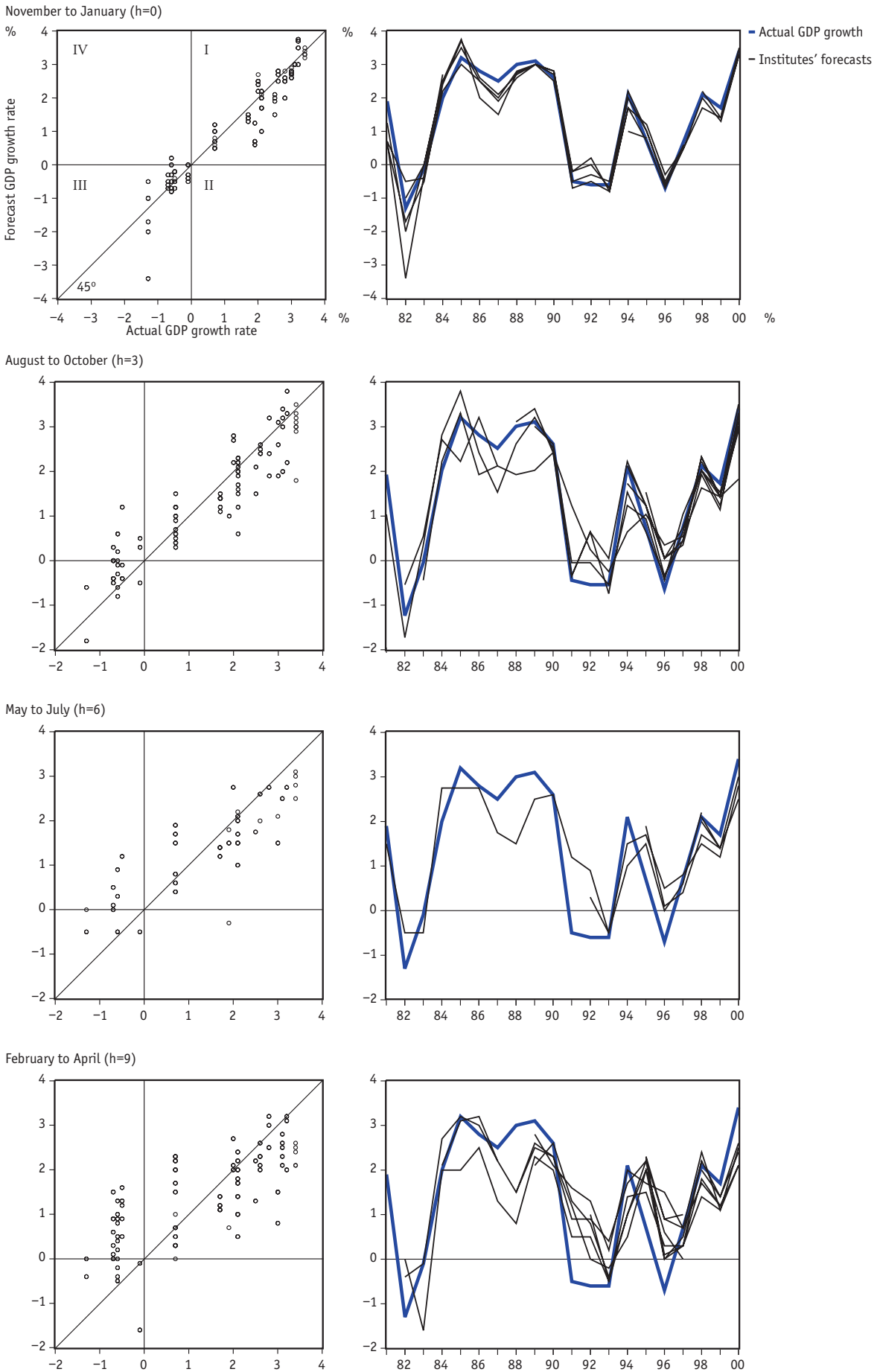
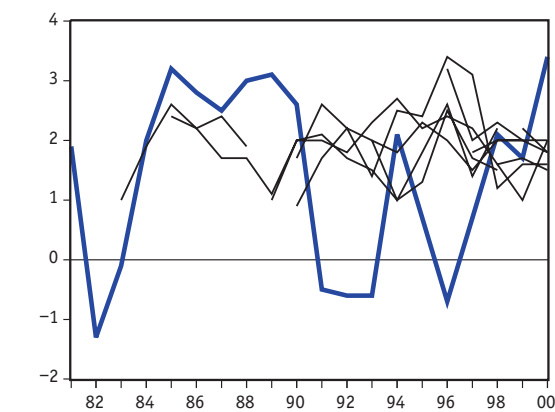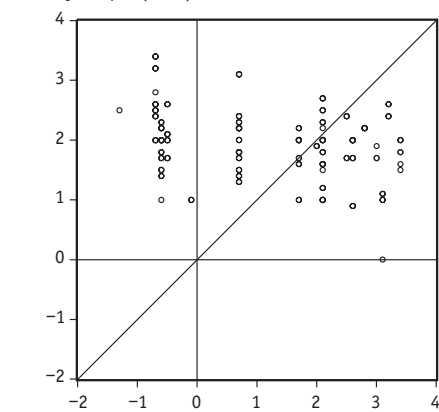November to January (h=12)
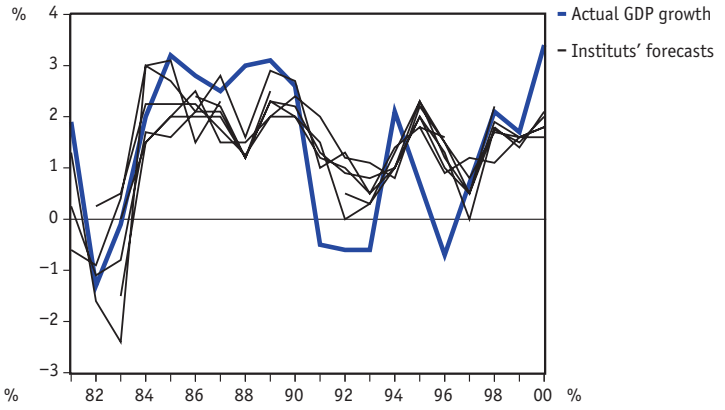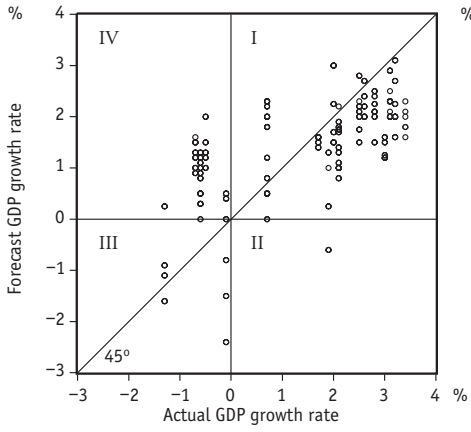
August to October (h=15)

May to July (h=18)

February to April (h=21)

Two other observations can be made on the basis of the scatter diagrams in Fig. 1. Firstly, there is no indication that the forecasts are systematically distorted to the left or right of the 45° line. In other words, the forecasts are neither too high nor too low on average. They are thus unbiased. Secondly, the charts indicate that as from $h = 9$ the slope of the scatter plot is no longer around the 45° line but tends to be flatter. In other words, GDP forecasts tend to underestimate the trend in upward phases and overestimate it in periods of negative growth. From this we conclude that the higher the absolute forecast change, the higher the forecast error, i.e. the horizontal distance from the 45° line. They thus seem to correlate with the absolute forecast figures. This suggests that some information available to the institutes (including the correlation between the forecast and the forecast error) is not utilised in the forecasting process, resulting in informational inefficiency. Informational inefficiency is suspected for horizons $h = 9$ as well as for $h = 12$ and $h = 15$ in Fig. 2 because the slope of the scatter plot seems to be flatter than 45°.

The $h12$ forecasts in Fig. 2 contain 126 observations and represent the highest number of observations of all 12 time horizons. These are forecasts published between November and January for the coming year. Although they scatter substantially, there is still a positive correlation between the forecast and actual values. This recedes in the subsequent charts. For the $h15$, $h18$ and $h21$ forecasts there is hardly any positive correlation between forecast and actual GDP. The same applies to the predictions for $h24$ to $h33$, which are not shown here. They form a horizontal band in the upper two squares of the scatter diagrams. In other words, they only change slightly. They thus possibly provide information on the expected trend or potential growth, but no longer give any information on the future business cycle.

2.2 Descriptive statistics: ME, MAE, RMSE and Theil's U

Forecast errors can be quantified in various ways. Table 3 shows six common statistics for the time horizons $h = 0$ to $h = 33$. Note that for some horizons only a small number of observations are available (cf. Table 2).

The Mean Error (ME) shows whether the forecasts are too high or too low on average and thus indicates whether they are biased. In the forecasts for the current year ($h = 0,3,6,9$) the mean error is close to zero. It is also close to zero for $h = 12$, where Wasserfallen (1992) identifies a slightly positive forecast error. The mean errors increase substantially with the forecasting horizon. For the longest horizon ($h = 33$), it is 1.3 percentage points, which is only slightly lower than the average actual GDP growth rate. Moreover, from $h = 15$ the mean error is consistently negative, i.e. the actual growth rate is always overestimated. This is mainly because the extremely negative forecast errors are higher than the extremely positive errors from this horizon onwards (see MIN and MAX).

The Mean Absolute Error (MAE), i.e. the mean absolute difference between actual and forecast growth, is a yardstick of the accuracy of the forecasts. It rises significantly with the forecasting horizon.

The picture is similar for the Root Mean Squared Error (RMSE). This commonly used statistical measure gives major errors a higher weighting than minor ones, thus taking account of the fact that the main aim of forecasting is to avoid large errors. The RMSE also rises with the forecasting period. While it is below 1 for forecasts for the current year ($h = 0,3,6,9$), from $h = 18$ it exceeds the standard deviation for actual GDP (1.55).

Another descriptive statistic shown in Table 3 is the inequality coefficient of Theil. In analogy with Winker (2002, p. 257), we define it as RMSE divided by the standard deviation of the actual real GDP. If U is less than 1, this means the forecast error is smaller than the standard deviation, i.e. the average variation of the actual values. In this case the forecasters score better than an alternative forecasting method which uses the 1981–2000 average of the actual GDP growth rates as a forecast. The results show that for forecasts for the current year ($h = 0,3,6,9$) the value for U is well below 1. Similarly, forecasts for the next calendar year generated between August and January ($h = 12,15$) are more accurate than the average for the actual GDP growth rate. That changes from $h = 18$, where U is greater than 1. As the charts show, the long-term forecasts are virtually meaningless as regards future business cycles.[3]

Forecast error 1981–2000
Table 3

	ME	MIN	MAX	MAE	RMSE	Theil's U
Forecasts for the current calendar year						
h=0	0.110	−0.8	2.1	0.340	0.480	0.31
h=3	0.020	−1.7	1.6	0.446	0.575	0.37
h=6	0.039	−1.7	2.2	0.632	0.803	0.52
h=9	−0.112	−2.2	2.2	0.805	0.989	0.64
Forecasts for the following calendar year						
h=12	0.034	−2.5	2.5	0.988	1.175	0.76
h=15	−0.286	−3.5	2.4	1.175	1.462	0.94
h=18	−0.514	−3.8	1.7	1.306	1.635	1.06
h=21	−0.583	−4.1	3.1	1.439	1.790	1.16
Forecasts for the next-but-one calendar year						
h=24	−0.572	−4.0	2.1	1.393	1.730	1.12
h=27	−0.721	−4.1	2.0	1.607	1.919	1.24
h=30	−0.250	−4.3	1.6	1.900	2.393	1.55
h=33	−1.322	−3.7	1.5	1.670	2.069	1.34

Forecast error: Actual value minus predicted value. A plus sign indicates an under-estimate while a minus sign indicates an overestimate.

Mean (ME), minimum (MIN) and maximum (MAX) forecast error

RMSE: Root Mean Squared Error

Theil's U: RMSE divided by the standard deviation (SD) of the actual values

3 This comparison is not entirely fair because it assumes a knowledge of the average GDP growth rate for 1981–2000. Later on we use a comparison based only on information that was actually available to the institutes when they made their forecasts.

3 Optimality conditions of the forecasts

In both the chart analysis and the descriptive statistics, there is a risk that random patterns may be interpreted as systematic patterns. Econometric tests can be used to minimise this risk.

This section looks at three necessary conditions required for optimal forecasting. Firstly, forecasts should be unbiased (Section 3.1). Secondly, there should be no autocorrelation between forecast errors (Section 3.2). Thirdly, forecasts should be efficient, i.e. forecast errors should not correlate with information that was generally available at the time when the forecast was made (Section 3.3).[4]

The tests are only carried out for institutes that made at least 18 forecasts for a given horizon. We calculate the results for each institute individually to avoid statistical problems arising from a possible heterogeneity of the forecasts.[5] Due to lack of data, only forecasts for the current year ($h = 0,3,6,9$) and the following year ($h = 12,15,18,21$) are tested.

Econometric tests generally give reliable results, even for small samples, if the forecast errors are normally distributed. Consequently, the normality of the distribution was tested first. These tests did not give any indication that the hypothesis of normal distribution of forecast errors should be rejected.[6] These findings also provide scope to calculate confidence intervals for various forecasting horizons. The method is outlined on page 62.

3.1 Are the forecasts biased?

We start by looking at whether the forecasts are biased, i.e. whether they are systematically too high or too low. A biased forecast is suboptimal because it can be corrected and thus improved on the basis of the bias recognised from past forecasts.

Unbiasedness is often tested using the Theil-Mincer-Zarnowitz equation. This is a regression of the actual values on a constant and the forecast values. In the following we test whether the intercept is equal to zero and the slope is equal to one. Holden and Peel (1990) pointed out that this null hypothesis is merely sufficient but not necessary for unbiasedness. Following their suggestion, we only run a regression of the forecast error $e_t{}^h$ on the constant (cf. Clements and Hendry (1998), p.57.):

$$(1) \quad e_t{}^h = \alpha + \varepsilon_t$$

If the constant α deviates significantly from zero, the hypothesis that the forecast is unbiased is rejected. It should be noted that the ordinary least squares method gives consistent results, but that the standard error is biased if there is autocorrelation in the residuals. For reasons outlined in the next section, autocorrelation of the first order has to be assumed for the forecasts for the following calendar year. In these cases, the standard errors were corrected using the method of Brown and Maital (1981).

Table 4a summarises the results of 15 regressions. The estimated values for the constant α are shown in column 2 with the standard error in brackets. In only one case is the null hypothesis rejected at the usual significance levels. In the other cases, there was no reason to assume that the constant is not zero. The results therefore show that the forecast errors can be considered unbiased, fulfilling the first condition for optimal forecasting.

---

4   Here we follow Granger and Newbold (1973), who recommend that the optimality of forecasts should be based on an analysis of forecast errors rather than a regression of the actual values on the predicted values. Cf. Clements and Hendry (1998, p. 56).

5   We will be utilising the panel structure of the data in a separate study.

6   The normal distribution of the forecast error was tested using the Jarque-Bera statistics. These tests show a normal distribution for most forecasting horizons. Moreover, the usual tests show that the forecast errors are stationary.

Optimality tests 1 – Unbiasedness of forecasts

1	Bias α 2	P 3	Autocorrelation LM(3), LM(2) 4	p-value 5
h=0 **(3 institutes)**	0.180 (0.082)	0.040**	3.888	0.274
	0.103 (0.118[c])	0.397	8.554	0.036**
	0.045 (0.097)	0.649	1.450	0.694
h=3 **(2 institutes)**	0.080 (0.124)	0.527	6.018	0.111
	0.074[d] (0.209)	0.728	3.250	0.355
h=6 **(1 institute)**	−0.035 (0.191)	0.856	4.591	0.204
h=9 **(2 institutes)**	−0.179[d] (0.194)	0.370	2.163	0.539
	0.242[d] (0.230)	0.306	0.603	0.896
h=12 **(4 institutes)**	0.160 (0.327[a])	0.625	0.450[b]	0.778
	0.025 (0.289[a])	0.931	0.369[b]	0.831
	−0.184[d] (0.388[a])	0.635	0.598[b]	0.741
	0.083[e] (0.337[a])	0.805	0.014[b]	0.993
h=15 **(1 institute)**	−0.265 (0.343[a])	0.439	0.156[b]	0.925
h=18 **(1 institute)**	−0.658[d] (0.522[a])	0.207	0.754[b]	0.686
h=21 **(1 institute)**	−0.400[e] (0.540[a])	0.459	1.664[b]	0.435

α was estimated by the least squares method, whereby the standard error was calculated using the Brown and Maital method (1981). The LM-test for autocorrelation is the Breusch-Godfrey test. The start values for the test equation, i.e. the lagged right-hand variables outside the sample, were set at zero.

a) Standard error estimated using the Brown and Maital method (1981) with a lag of the first order
b) The residuals lagged by one period are omitted from the Breusch-Godfrey test equation.

c) Newey-West HAC standard error with truncation after the second lag
d) The data for 1981 are missing.
e) The data for 1981 and 1982 are missing.

***, **, *: Significance level 1%, 5%, 10%

3.2 Are the forecast errors autocorrelated?

The second condition for an optimal forecast requires that, for the forecasts of the current year, the forecast errors should not be autocorrelated. Autocorrelation would occur if, for example, a negative forecast error (overestimate) was always followed by a positive forecast error (underestimate) and vice versa. Such forecasts are sub-optimal because they can be corrected and thus improved on the basis of the observed pattern of forecast errors and the observed autocorrelation of the forecast errors.

Autocorrelation of forecast errors should be judged differently if the forecasting horizons overlap. Let us take as an example the forecasts generated in May, June and July for the following calendar year ($h = 18$): both the forecast errors of the forecast generated in June 2000 for 2001 and of the forecasts made in June 2001 for 2002 are likely to have been affected by the terrorist attacks in the USA on 11 September 2001. As a result, it is probable that both forecasts overestimate GDP growth. What has been illustrated with the example of 11 September is naturally repeated year for year. In other words, autocorrelation is to be expected for all forecasts for time horizons of a year or more ($h = 12, 15, 18, 21$) because the overlapping forecasting period contains common events (innovations). However, in such cases, the autocorrelation should only be related to the previous year's errors (autocorrelation of the first order), not to the forecast errors made two or more years before.

To test for autocorrelation of forecast errors, we can use the results shown in Table 4a. Since the residuals from equation (1) represent the forecast error adjusted for the mean value, testing for autocorrelation of the residuals is equivalent to testing for autocorrelation of forecast errors. Column 4 shows the results of the Lagrange Multiplier Test (LM) after Breusch-Godfrey. The p-value in column 5 shows the probability of the LM-statistics, assuming that there is no autocorrelation of the residuals ($h = 0, 3, 6, 9$) or that only autocorrelation of the first order is identified ($h = 12, 15, 18, 21$).[7] The results show that − with one exception − the p-values are over 5%. From this we conclude that there is no autocorrelation of the forecast errors that would contradict the optimality of the forecasts.

3.3 Informational efficiency of the forecasts

Efficiency is the third requirement for optimal forecasts. A forecast is efficient if it uses all information available at the time when it is made. Tests for informational efficiency therefore look at whether the forecast errors correlate with information known at the time when the forecast was made (orthogonality tests). They are based on a regression of the forecast error on variables that could be observed when the forecast was made:

$$(2) \quad e_t{}^h = \alpha + \beta x_{t-i} + \varepsilon_t \begin{cases} i = 1 \ h = 0, 3, 6, 9 \\ i = 2 \ h = 12, 15, 18, 21. \end{cases}$$

$e_t{}^h$ represents the forecast error in calendar year t and x_{t-i} an information variable (or a vector of information variables). The information variable has a lag of one period if the forecast error refers to forecasts for the current calendar year ($h = 0, 3, 6, 9$), and a lag of two periods if the error refers to forecasts for the following calendar year ($h = 12, 15, 18, 21$). This guarantees that only information available when the forecast was made is used as right-hand variables. The coefficient (or a vector of coefficients) β is zero if the forecast error does not correlate with the variable x_{t-i}. By contrast, if β is not zero, x_{t-i} correlates with the forecast error and the forecast is not efficient relative to the information set to which the variable x_{t-i} belongs. Again, the error term of the regressions for the following year ($h = 12, 15, 18, 21$) may be autocorrelated.

Was efficient use made of the information used for producing the forecast?

In the simplest efficiency test the information variable x_{t-i} is *the observed value* for the series being predicted. In this case, the variable x_{t-i} is the last actual real GDP growth rate. If there is no autocorrelation with the forecast errors and they do not correlate with the GDP growth rate, the forecasts are said to show *weak informational efficiency*.

We refrain from reporting the detailed results of this orthogonality test. The hypothesis $\beta = 0$ cannot be rejected in any of the regressions and, therefore, the forecast errors are not correlated with the GDP growth rate. Taking into account the results outlined in section 3.2 (no autocorrelation), it can be assumed that the forecasts are *weakly informational efficient*.

7   For ($h = 12, 15, 18, 21$) the Breusch-Godfrey test is modified: the residuals for a one-period lag are omitted from the test regression. The results of the Q test (not shown) correspond to the results of the Breusch-Godfrey test.

Tests for stronger informational efficiency can be carried out by extending the set of information. By taking the forecast itself as the variable x_{t-i}, it is possible to check whether the forecasting institute made efficient use of the information available when the forecast was produced. If $\beta \neq 0$, the forecaster did not make efficient use of the information underlying the forecast. If $\beta > 0$, the change in GDP was systematically underestimated; if β is between -1 and 0 the change in GDP was systematically overestimated.[8]

This test can be illustrated with help of the charts. If $\beta \neq 0$, the plots in the scatter diagrams in Figs. 1 and 2 are not along the 45° line. If $\beta > 0$ (or $-1 < \beta < 0$), the line through the scatter plot is flatter (steeper) than the 45° line. By contrast, if $\beta < -1$, the slope in the scatter plot is negative, indicating that the institutes did not manage to forecast whether GDP would grow or contract in the calendar year to which the forecast refers. In this case, while positive (negative) GDP growth rates were predicted, the actual growth rates were negative (positive).

Optimality tests 2 – Informational efficiency regarding the institutes' own forecast Table 4b

1	Orthogonality test β 2	p-value 3	Autocorrelation LM(3), LM(2) 4	p-value 5
h=0 (3 institutes)	-0.070 (0.051)	0.181	3.095	0.377
	-0.018 (0.073[c])	0.810	8.645	0.034**
	-0.072 (0.072)	0.331	2.694	0.441
h=3 (2 institutes)	-0.036 (0.087[c])	0.681	6.104	0.107
	-0.271[d] (0.201)	0.195	3.293	0.349
h=6 (1 institute)	0.201 (0.178)	0.274	4.793	0.188
h=9 (2 institutes)	0.228[d] (0.177)	0.214	0.963	0.810
	0.075[d] (0.211)	0.725	0.512	0.916
h=12 (4 institutes)	0.029 (0.165[a])	0.860	0.486[b]	0.784
	-0.218 (0.170[a])	0.200	0.635[b]	0.728
	0.375[d] (0.353[a])	0.288	0.553[b]	0.758
	0.575[e] (0.279[a])	0.039**	0.453[b]	0.798
h=15 (1 institute)	-0.090 (0.370[a])	0.807	0.154[b]	0.926
h=18 (1 institute)	-3.217[d] (0.792[a])	0.000***	0.912[b]	0.634
h=21 (1 institute)	-1.430[e] (0.850[a])	0.092*	0.184[b]	0.912

8   This only applies for unbiased forecasts.

β was estimated by the least squares method, whereby the standard error was calculated using the Brown and Maital method (1981). The LM-test for autocorrelation is the Breusch-Godfrey test. The start values for the test equation, i.e. the lagged right-hand variables outside the sample, were set at zero.

a) Standard error estimated using the Brown and Maital method (1981) with a lag of the first order
b) The residuals lagged by one period are omitted from the Breusch-Godfrey test equation.

c) Newey-West HAC standard error with truncation after the second lag
d) The data for 1981 are missing.
e) The data for 1981 and 1982 are missing.
***, **, *: Significance level 1%, 5%, 10%

The results of this orthogonality test are shown in Table 4b. The structure of this table is similar to Table 4a: the standard error for time horizons from $h = 12$ given in brackets is calculated according to Brown and Maital (1981). The third column gives the p-value while the fourth and fifth columns give the results of an autocorrelation test for the residuals, which can be used to test whether the standard errors were calculated correctly.

Up to $h = 18$, β does not normally deviate significantly from zero. It is true that from $h = 6$ there is a trend towards positive β coefficients, indicating a certain "inertia" in the forecasts. However, since the accuracy of the estimates declines (increasing standard error), in all cases except one the hypothesis $\beta = 0$ cannot be rejected.[9] To sum up, the forecasts up to $h = 15$ show *weak informational efficiency* and are also efficient in a stronger sense as they make optimal use of the information used to produce the forecasts. This is not true for $h = 18$ and $h = 21$. In the case of $h = 18$, β is even significantly below −1, so the institutes did not manage to forecast recessions over this forecast horizon.

Are the forecasts strongly informational efficient?

Informational efficiency is strongest when all publicly available information is utilised efficiently. To show that the forecasts are not efficient in this sense, it is sufficient to find information that was generally available to the institutes and that correlates with the forecast error. Such a result would be interesting as it would show how forecasting could be improved. However, a result indicating that no corresponding variables could be found is not very meaningful. Only if all available data had been taken into account – and that is an impossible task – would it be possible to conclude that the forecasts are *strongly informational efficient*.[10]

In this section, we show that information exists which could be used to improve forecasting – namely, forecasts from other institutes. Assuming informational efficiency, the forecast errors of one institute should not correlate with the forecasts of another. If there is a correlation, the institute has not sufficiently analysed the forecasts made by the other institute. There are either shortcomings in "forecasting technology" or the institute has overlooked the fact that the other institute utilises data which it ignores or does not pay sufficient attention to.

To test this, the forecasts made by other institutes are taken as the x_{t-i} variable in Equation 2. To make sure that this information was available when the forecast was made, we only use forecasts made in the previous three-month period. For instance, to test the informational efficiency of forecasts for $h = 0$ a regression of the corresponding forecast errors on the forecasts for $h = 3$ is performed.

Table 4c summarises the results. Columns 2-7 are headed by the six institutes whose forecasts are used as the variable. The results show that the forecasts made by one institute correlate in one case, while those of another correlate three times. The second institute is the OECD, which possibly has better information on the international economic situation than the other institutes. In any case, the results shown in this table indicate that the forecasts are not *strongly informational efficient*.

In the literature, forecasts that are both unbiased and show strong informational efficiency are described as *strongly rational*. As this section shows, there is information which is not utilised, so the forecasts are not *strongly rational*. As set out in Section 3.1, the forecasts for the current and following calendar year are nevertheless unbiased and thus *weakly rational*.[11]

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9 This contradicts Wasserfallen (1992, p. 300). For $h = 12$ Wasserfallen assumed that the actual change in GDP was over-estimated.

10 In the literature, strong informational efficiency is generally referred to simply as informational efficiency.

11 Alternative terminology refers to unbiasedness and weak informational efficiency as weak rationality (see e.g. Kirchgässner, 1993). The forecasts are weakly rational in this sense, too.

Optimality tests 3: Informational efficiency regarding the others' forecasts

Table 4c

Forecasting period	I1	I2	I3	I4	I5	I6	LM(3), LM(2)	p-value
1	2	3	4	5	6	7	8	9
h=0 **(3 institutes)**		-0.089^d (0.089^c)				0.020^d (0.102^c)	7.267	0.064*
		-0.147^d (0.171^c)				0.240^d (0.244^c)	8.943	0.030**
		0.051^d (0.095)				0.086^d (0.140)	3.478	0.324
h=3 **(2 institutes)**				-0.003 (0.120)			6.032	0.110
				$0.370^{d}**$ (0.175)			4.600	0.204
h=6 **(1 institute)**		0.610^d (0.416)			-0.354^d (0.403)		5.768	0.123
h=9 **(2 institutes)**	0.563^d (0.600)		0.228^d (0.309)	$-1.181^{d}*$ (0.663)			4.041	0.257
	0.215^d (0.758)		0.308^d (0.390)	-0.829^d (0.837)			2.161	0.540
h=12 **(4 institutes)**		-0.173 (0.274^a)					0.326^b	0.850
		-0.320 (0.344^a)					0.183^b	0.912
		$0.734^{d}**$ (0.336^a)					0.028^b	0.986
		0.429^e (0.347^a)					0.179^b	0.914
h=15 **(1 institute)**				$-2.094^{d}***$ (0.531^a)			0.837^b	0.658
h=18 **(1 institute)**		-0.515^e (0.920^a)					1.082^b	0.582

β was estimated by the least squares method, whereby the standard error was calculated using the Brown and Maital method (1981). The LM-test for autocorrelation is the Breusch-Godfrey test. The start values for the test equation, i.e. the lagged right-hand variables outside the sample, were set at zero.

a) Standard error estimated using the Brown and Maital method (1981) with a lag of the first order
b) The residuals lagged by one period are omitted from the Breusch-Godfrey test equation.

c) c) Newey-West HAC standard error with truncation after the second lag
d) The data for 1981 are missing.
e) The data for 1981 and 1982 are missing.

***, **, *: Significance level 1%, 5%, 10%

4 Comparison with naive forecasts

In the previous sections, we saw that forecasts up to $h = 18$ satisfy the optimality criteria for forecasts. The question now is whether such forecasts are superior to naive forecasts. We define naive forecasts as simple forecasting methods requiring very little effort.

A first naive method, which we call naive forecast 1, takes the average GDP growth in the past 20 years as a forecast. For 2000 this naive forecast is thus the average GDP growth rate for 1980−1999.[12]

A second naive method called naive forecast 2 uses the last actual GDP growth rate as a forecast. Naive forecast 2 for 2000 thus corresponds to the actual growth rate in 1999.

Table 5a compares the RMSE of the two naive forecasting methods with the RMSE of the forecasts generated by the institutes. This comparison is based on four different time horizons. We assume that the two naive forecasts are published in March, as soon as the average GDP growth rate for the previous year is known. Hence, some of the $h = 9$ and $h = 21$ forecasts generated by the institutes in February to April were made before the GDP growth rate is published and are thus not based on the same information as the naive forecasts. By contrast, for the forecasts made between May and July for $h = 6$ and $h = 18$ the first GDP estimate was already available as these forecasts were made up to three months after the naive forecasts.

The results show that the forecasts made by the institutes for the current calendar year ($h = 6$ and $h = 9$) have far lower forecast errors than the two naive forecasts. Looking at the forecasts for the following calendar year, the quality of the forecasts for $h = 18$ is roughly the same as for naive forecast 1, while the forecasts for $h = 21$ are inferior to naive forecast 1. Moreover, both forecasts made by the institutes for the following year ($h = 18$ and $h = 21$) are better than the naive forecast 2.

Comparison with naive forecasting methods   Table 5a

	RMSE 1981−2000		
Forecasting period	All institutes	Naive Forecast 1: Average growth rate	Naive Forecast 2: Last actual growth rate
h=6	0.803 [0.519]	1.534 [0.991]	1.618 [1.045]
h=9	0.989 [0.639]	1.534 [0.991]	1.618 [1.045]
h=18	1.635 [1.056]	1.564 [1.011]	2.263 [1.527]
h=21	1.790 [1.156]	1.564 [1.011]	2.263 [1.527]

12 For the effective values prior to 1981 we have to use the first data issued by the SFSO.

All institutes
Figures in square brackets:
RMSE/SD (Theil's U)

In a next step the Diebold and Mariano test (1995) is used to check the statistical significance of the results. The hypothesis tested is that the Mean Squared Error (MSE) is the same for the naive forecasts and the forecasts of the institutes. We still assume a squared loss function with positive and negative errors of the same magnitude leading to equally high losses and above-average weighting of large forecast errors. For the institutes' forecasts, we take the forecasting series of a forecaster with a large number of observations in the relevant period.

The results are shown in Table 5b. This table shows the difference between the MSE for the naive forecasts and the forecasts made by the institutes for $h = 0$ to $h = 21$. From this it is evident that the forecasts generated by an institute for $h = 0$ to $h = 12$ is significantly better than the two naive forecasting methods. The null hypothesis, which postulates that there is no difference, is consistently rejected at the 5% significance level and in most cases at the 1% significance level as well. Moreover, the forecasts generated by an institute for $h = 15$ and $h = 18$ are better than naive forecasts 2. In all other cases, the difference is not statistically significant. In other words, the forecasts made by the institutes are statistically not significantly worse than the two naive forecasts.[13]

Loss differentials between naive forecasts and institutes' forecasts 1981–2000   Table 5b

	Institutes' forecasts versus naive forecast 1	Institutes' forecasts versus naive forecast 2
Forecasts for the current calendar year		
h=0	2.192*** (0.299)	2.457*** (0.659)
h=3	2.053*** (0.263)	2.318*** (0.699)
h=6	1.660*** (0.272)	1.925** (0.740)
h=9[a]	1.742*** (0.337)	1.713** (0.631)
Forecasts for the following calendar year		
h=12	1.069** (0.411)	4.207** (1.734)
h=15	0.527 (0.518)	3.665** (1.536)
h=18[a]	−0.701 (0.849)	2.590* (1.273)
h=21[b]	−0.330 (0.767)	1.703 (1.179)

13 In a few cases, autocorrelation was observed so the Newey-West correction was used. Estimation with ARMA residuals gives similar results.

The forecasts made by the institutes are represented by the forecasting series of an institute with a large number of observations in the relevant period.

Standard error calculated using the Newey-West method
***, **, *: Significance level 1%, 5%, 10%
a) 1982–2000, 19 forecasts
b) 1983–2000, 18 forecasts

5 Forecast errors versus revision of GDP

The last question we wish to look at in this study is the impact of revisions of the actual values on forecast errors. Actual GDP figures are revised several times and occasionally completely reworked as a result of major changes in the calculation method of the national accounts. So far in this paper, we have used the first GDP estimate for the previous year published by the seco in March as the actual value.

Following publication of the first estimate by the seco, the SFSO publishes its own figures on real GDP and its components in the third quarter. These figures are based on a larger data set. The seco then adjusts its data in line with this figure. We start by looking at whether the forecast errors made by the institutes in our sample would be lower if we took the SFSO figure rather than the seco figure as our outcome.

Table 6 shows the forecast errors for the institutes for $h = 0$ to $h = 21$ measured by the RMSE. This shows that for the shorter time horizons ($h = 0, 3, 6, 9, 12$) the RMSE is lower relative to the seco data than the SFSO data. For $h = 15, 18, 21$ the opposite is the case, but the RMSE for these horizons are roughly of the same magnitude as the standard deviation of real GDP (1.55) regardless whether they are calculated with the seco or the SFSO data. For these forecasting horizons the forecasts are thus virtually meaningless in both cases.

How should these results be interpreted? Klein (1981) pointed out that revision represents the "limits of forecasting". He argues that if the data are revised by around 10% the mean error cannot be less than 10%[14] because genuine revision errors should by nature be unforecastable.

Institutes' forecasts versus the seco and SFSO actual values 1981–2000   Table 6

	RMSE relative to the actual value of the seco	RMSE relative to the actual value of the SFSO
Forecasts for the current calendar year		
h=0	0.480	0.642
h=3	0.575	0.662
h=6	0.803	0.843
h=9	0.989	1.051
Forecasts for the following year		
h=12	1.175	1.215
h=15	1.462	1.417
h=18	1.635	1.530
h=21	1.790	1.666

All institutes
The second column contains
data from Table 3 for comparison
purposes.

14 See Granger (1996),
p. 463 and 464.

Knowledge of the size of the revision of GDP forecasts can therefore provide an indication of how far removed the forecasts are from the "limits of forecasting". We define the revision errors as the difference between the SFSO data and the annual GDP growth rate published by seco. In 1981–2000 the average revision error was 0.075 percentage points and was thus almost unbiased on average. However, individual revisions were between −0.9 and 1.0 percentage points. The average absolute revision error was 0.385, which was a quarter of the average real GDP growth rate. The RMSE is 0.489, which is about a third of the standard deviation in the real GDP growth rate.

In Table 6 the forecast error for $h=0$ relative to seco is 0.480 and the forecast error for $h=3$ is 0.575. That is close to the limit of forecasting. This result indicates that the forecasts can only be improved if the responsible statistical agencies succeed in reducing the revision error. As we have shown, from $h=18$ the forecasts are no longer informative. However, if revision errors were reduced by − for example − half, our rule of thumb for the confidence interval (see page 62) indicates that this limit could be extended by one quarter to $h=21$.

The final question is whether the seco estimates meet the optimality criteria. To test this we use the same method as for the forecasts made by the institutes.

Table 7 summarises the results. A regression of the revision error on a constant shows that the constant does not differ significantly from zero (column 2). In other words, the GDP data published by the seco are unbiased. Further, a LM-test does not indicate any autocorrelation of the revision errors. The third column shows that the revision errors cannot be predicted on the basis of the seco figure. The initial GDP estimate thus is *weakly informational efficient* compared with the annual SFSO estimate. A stronger test is to run a regression of the revision error on the institutes' forecasts that were available at the time when the first estimate was made. A link between the first GDP estimate and the autumn forecast of one institute can be identified, but only at the 10% significance level. This means that the first seco estimate of GDP growth ignores information that is contained in the forecasts made by this institute. The informational efficiency of the initial GDP figure is thus not strong.

Optimality criteria for the first GDP estimate (seco) 1981–2000   Table 7

	Unbiasedness; autocorrelation	Weak informational efficiency	Informational efficiency[a]
Constant	0.075 (0.111)	0.201 (0.149)	0.311 (0.266)
GDP growth		−0.090 (0.072)	
h=0			0.108 (0.570)
h=0			−0.288 (0.448)
h=0			−0.686 (0.425)
h=3			0.749* (0.395)
h=3			−0.032 (0.210)
LM(3)	5.356	3.233	2.256
p-value	0.147	0.357	0.521

The forecasts made by the institutes are represented by the forecasting series of an institute with a large number of observations in the relevant period.
a) The forecast for 1981 is missing.
***, **, *: significance level 1%, 5%, 10%

6 Summary and conclusions

This paper examines the accuracy of Swiss GDP forecasts on the basis of 766 observations by 14 different institutes.

The results show that the forecasts made during the year for the current year or in the autumn for the following year are both informative and clearly better than naive forecasting methods. However, even the forecasts made at year-end for the current year still have an average forecast error of about 0.5 percentage points, which is roughly equivalent to the revision error.

Our study also shows that the forecast error increases sharply as the time horizon increases. For forecasts made between May and July for the following year ($h = 18$), the forecast error is roughly equivalent to the standard deviation of the actual GDP growth rates. Forecasts for even longer horizons no longer provide any meaningful information about the future business cycle. At best they may provide an indication of the potential growth of the Swiss economy. Our findings do not change significantly if the SFSO data are taken as the outcome instead of the seco data.

These somewhat disappointing findings do not only apply to Swiss forecasts. Studies of forecasting in other countries come to similar conclusions. In an extensive survey of the accuracy of European growth forecasts generated in the autumn for the following year, Öller and Barot (2000) reported forecast errors of a similar order of magnitude. Like us, in a study of three leading British forecasting institutes Mills and Pepper (1999) came to the conclusion that as from $h = 18$ forecasts are not a useful tool for assessing business cycle.[15]

It is good to know that for the forecasting horizons where they are informative, the Swiss GDP forecasts meet the usual optimality criteria for forecasts. The forecasts are unbiased, so they can be described as *weakly rational*. Similarly, efficient use is made of the information included in the time series being forecast. The forecasts for the current year and the following year thus are *weakly informational efficient*. They are also efficient in terms of the set of information used to generate the forecast. However, Swiss GDP forecasts in our sample do not pass the most stringent test – i.e. the test of strong informational efficiency – because, in some cases, forecast errors correlate with the forecasts of other institutes.

All in all, our results highlight the considerable uncertainty associated with future GDP and the business cycle. This is important for decision-makers because it is a warning that they should not allow themselves to be lulled into false security.

Given that forecasts are informative at short forecasting horizons only, the forecasting institutes for their part should regularly review and rapidly adapt their forecasts in the light of new information. In recent years, there has been a clear trend to produce several forecasts a year, which is desirable from the users' viewpoint. For the forecasters, it would be helpful if statistical data on Swiss economic activity were published quickly and – if possible – monthly.

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15 Mills and Pepper, 1999, p. 247:
"It is found that forecasts are not of much use at horizons greater than 18 months (that is, 6 months before the year being forecast)."

A rule of thumb for confidence intervals

Assuming a normal distribution of the forecast errors, 50% of forecast errors are between +/−0.675 standard deviations and 80% are between +/−1.28 standard deviations. From this, a simple rule of thumb for conveying the uncertainty related to forecasts can be derived.

The starting point is an equation that approximates the root mean squared error (RMSE) as a linear function of the forecasting horizon h. Using the data from Table 3 we obtain the following:

1)   RMSE = 0.45+0.06*h

where h is the number of months from the time when the forecast is made to the end of the year for which the forecast is made. The equation shows that the RMSE based on the average historical results for all the institutes in 1981−2000 increases by about 0.18 percentage points per quarter. In the forecasts for $h = 6$ the standard error is 0.81, while in the forecasts for $h = 12$ it is 1.17. In the forecasts for $h = 18$ it is 1.5 and thus roughly equivalent to the standard deviation of real GDP.[16]

In the next step, the standard error for the various horizons can be used to calculate confidence intervals. For this we follow the proposal made by Granger (1996) and give the 50% confidence interval in addition to the 80% confidence interval. For a forecast of 2% for $h = 6$ there is a 50% probability that the actual value will be between 1.5% and 2.5% and an 80% probability that it will be between 1% and 3%.

50% CI: $2 \pm 0.675 \ast 0.81 \approx 2 \pm 0.55$
80% CI: $2 \pm 1.28 \ast 0.81 \approx 2 \pm 1$

For a forecast of 2% for $h = 12$ there is a 50% probability that the actual value will be between 1.2% and 2.8% and an 80% probability that it will be between 0.5% and 3.5%.

50% CI: $2 \pm 0.675 \ast 1.17 \approx 2 \pm 0.79$
80% CI: $2 \pm 1.28 \ast 1.17 \approx 2 \pm 1.5$

This rule of thumb for the confidence interval of forecast error can be used to produce FAN-charts based on historical experience. These could help to improve interpretation of forecasts on the basis of the forecasting horizon and give an indication of the risks involved in the forecast.

16 For unbiased forecasts, RMSE corresponds to the standard error.

Sources

The *forecasts* made by the institutes in our sample were taken from the following publications:

BAK: CH-Plus, quarterly; CREA: Analyses et Prévisions, autumn and spring; CS: 1987–1996: "bulletin" der SKA, monthly, 1997–2000: "Bulletin" der CS, monthly; IMF: World Economic Outlook, autumn and spring; KfK: Mitteilungen der Kommission für Konjunkturfragen, supplement to December edition of "Die Volkswirtschaft", 1993–2000 (spring forecasts): Confederation's Expert Group for Economic Forecasting, seco; KOF: monthly as well as half-yearly reports, autumn and spring; MAT: Prévisions économétriques, annual; OECD: Economic Outlook, June and December; UBS "old": 1976–1986: "Wirtschafts-Notizen", monthly, 1987–1997: "Internationaler Konjunkturausblick", quarterly; SBC: "Der Monat"; SGZZ: "Lagebeurteilung der Bauwirtschaft", annually; SNB: Vorschläge für die Geldpolitik im Jahre 19xx, annually, unpublished; UBS "new": "Outlook Schweiz", quarterly; ZKB: "Konjunkturbarometer", monthly.

The *actual values* for the percentage annual change in real GDP were taken from the following publications:

Annual average on the basis of the quarterly data: 1981–1989: "Wirtschaftsspiegel", no. 3 (March), Swiss Federal Statistical Office , 1990–2000: Statistical Monthly Bulletin of the Swiss National Bank, no. 3 (March)

Annual estimate of the Swiss Federal Statistical Office: Swiss Statistical Year Books, volumes 1982–2001

Literature

Brown, W. B. and Maital, S. M. 1981. What Do Economists Know? An Empirical Study of Experts' Expectations. *Econometrica* 49: 491–504.

Clements, M. P. and Hendry, D. F. 1998. *Forecasting economic time series*. Cambridge: Cambridge University Press.

Diebold, F. X. and Mariano, R. 1995. Comparing Predictive Accuracy. *Journal of Business and Economic Statistics* 13: 253–265.

Granger, C. W. J. 1996. Can We Improve the Perceived Quality of Economic Forecasts? *Journal of Applied Econometrics* 11: 455–473.

Granger, C. W. J. and Newbold, P. 1973. Some Comments on the Evaluation of Economic Forecasts. *Applied Economics* 5: 35–47.

Hendry, D. F. and Ericsson, N. R., eds. 2001. *Understanding Economic Forecasts*. The MIT Press.

Holden, K. and Peel, D. A. 1990. On Testing for Unbiasedness and Efficiency of Forecasts. *Manchester School* 58: 120–127.

Kirchgässner, G. 1993. Testing Weak Rationality of Forecasts with Different Time Horizons. *Journal of Forecasting* 12: 541–558.

Klein, L. R. 1981. *Econometric Models and Guides for Decision Making*. New York: Free Press.

Mills, T. C. and Pepper, G. T. 1999. Assessing the Forecasters: An Analysis of the Forecasting Records of the Treasury, the London Business School and the National Institution. *International Journal of Forecasting* 15: 247–257.

Newey, W. K. and West, K. D. 1987. A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica* 55: 703–708.

Öller, L.-E. and Barot, B. 2000. The Accuracy of European Growth and Inflation Forecasts. *International Journal of Forecasting* 16: 293–315.

Steckler, H. O. 2002. The Rationality and Efficiency of Individuals' Forecasts. In *A Companion to Economic Forecasting*, M. C. Clements and D. F. Hendry (eds.), 222–240. Oxford: Blackwell.

Wasserfallen, W. 1992. Konjunkturprognosen in der Schweiz. *Finanzmarkt und Portfolio Management* 3: 296–302.

Winker, P. 2002. Vektor Autoregressive Modelle. In *Finanzmarkt-Ökonometrie*, M. Schröder (ed.), 213–262. Stuttgart: Schäffer-Poeschel Verlag.

The International Monetary Fund as International Lender of Last Resort

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1   Introduction

Switzerland has been a member of the International Monetary Fund (IMF) for ten years now. This provides a suitable occasion to review the past decade. It has been a period of far-reaching change for the IMF. First, the IMF has deepened its involvement in the poorest countries of the world. Second, since the mid-1990s, it has been lending on a far greater scale than in the previous two decades. The result has been to widen the IMF's field of competence. It has become, as it were, an international lender of last resort. This, in turn, has led to an increase in moral hazard in particular. In other words, international creditors and borrowing countries have modified their behaviour by taking more risk. The aim of this paper is to show that the purpose of many of the measures adopted by the IMF in the past ten years has been to reduce this moral hazard.

In the 1990s, and especially in the second half of the decade, the level of financial assistance approved by the IMF rose rapidly. As of 30 April 2002, the total amounted to 87 billion Special Drawing Rights (SDRs), the equivalent of approximately CHF 174 billion. In 1994, before the financial crisis in Mexico, the total was just SDR 8 billion. Two years later, as that crisis peaked, the figure had risen to SDR 28 billion. Since 1998, total committed amounts has risen steadily in the face of a series of crises in Asia, Russia, Brazil, Argentina and Turkey.[1]

This expansion in credit was possible because the resources available to the IMF were increased. These consist of the IMF's capital and lines of credit that it can draw upon. In 1999, the IMF's capital was raised from SDR 146 billion to SDR 212 billion. However, this capital is not entirely available. The IMF may draw only on the quotas of countries without balance of payments difficulties. The credit lines available to the IMF were doubled from SDR 17 billion to SDR 34 billion in 1998.[2]

This expansion in credit was also made possible by changes in the principles governing the IMF's lending policy. They were triggered by the Mexican financial crisis of 1995 and the Korean crisis of 1997. After the Mexican crisis, the IMF adopted a policy allowing a quick and massive intervention in case a crisis erupted (Emergency Financing Mechanism). This policy was reinforced during the Korean crisis, at which time a new facility was created, the Supplemental Reserve Facility. This facility does not function like the traditional ones. IMF loans usually serve to catalyze a flow of private funds. They are not intended to fill in a significant part of the external financing gap. Accordingly, loans may be quite modest. The money is paid in tranches, depending on whether certain targets in the economic adjustment programme have been reached. By contrast, loans granted under the new facility are treated differently: the amounts of the loans are large and most of them are released immediately.

The increase in the financial resources of the IMF and the change in the principles governing its lending policy meet a need that has emerged as international capital flows have swelled. Although increased liberalization of capital movements has improved the distribution of financial resources, at the same time it has weakened the international financial system. Capital account crises can be fierce and assume enormous proportions, particularly if accompanied by the withdrawal of short-term funds.

There are many reasons why capital may be withdrawn or loans not rolled over, but the consequences are the same: the debtor country is unable to obtain any more funds from private sources. In these circumstances the debtor may apply to the IMF. The IMF finds itself in the role of a lender of last resort, which is the only institution able or willing to provide liquidity after all other sources of finance have dried up. In the same way in which the lender of last resort at the national level – usually the central bank – offers support to commercial banks facing large withdrawals of deposits, the IMF can provide assistance to a country facing an outflow of capital. Stanley Fischer in particular, the then First Deputy Managing Director of the IMF, supported this view, with some reservations however (Fischer, 1999). Reservations can be explained by the fact that the IMF has limited resources. Unlike a central bank, the IMF cannot create money. The amount of credit it can offer is limited by the resources at its disposal. Consequently, the IMF is a special kind of lender of last resort.

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1   Cf. *IMF, Annual Report*.

2   There are two types of credit line: the General Arrangements to Borrow (GAB) totalling SDR 17 billion and the New Arrangements to Borrow (NAB) totalling SDR 34 billion. The NAB include the GAB. The GAB are financed by the most important industrialised countries (Belgium, Canada, France, Germany, Italy, the Netherlands, Sweden, Switzerland, the United States and the United Kingdom). The NAB are financed by these 11 countries plus several other industrialised and emerging market countries (Australia, Austria, Denmark, Finland, Hong Kong, Korea, Kuwait, Luxembourg, Malaysia, Norway, Saudi Arabia, Singapore, Spain and Thailand). (In the case of Switzerland, as in Germany, Sweden and Hong Kong, the central bank acts as the participating institution.)

The function of lender of last resort entails benefits, but its economic cost in the form of greater moral hazard is high. Moral hazard is the consequence of each and every insurance policy. Such a contract reduces the incentive to take steps to avoid situations that inevitably result in insurance claims. The easier it is to claim insurance benefits, the more risky the behaviour. Similarly, a national lender of last resort also provides a form of insurance: on the one hand, banks adopt riskier lending policies, which increases the probability that the lender of last resort will have to take action, and on the other hand depositors, i.e. banks' creditors, pay less attention to banks' risk quality.

The IMF faces the same problem at the international level. As lender of last resort, the guarantee that it implicitly provides for its members may induce them to neglect the risks attendant on running up excessive debts. On the other hand, it gives the creditors of the indebted countries a certain guarantee that even in the event of financial difficulties they will still get their money back. The consequence is an increase in international financial instability, and greater demand for the services of the international lender of last resort.

There is, however, a fundamental distinction between the insurance provided by the IMF and a standard insurance contract. Under the latter, the insurer transfers money to the insured to cover the loss. Once the transfer is completed, the insured is released from any further obligations. In the case of the IMF, the procedure after the first step is different. As described above, in the event of a loss (payment difficulty) there is first a transfer of money from the insurer (IMF) to the insured (debtor country). But the process does not end there. The transferred resources are not left in the hands of the debtor country: they enable it to service its debts, and thus pass to the creditor without delay. Nor is the debtor country released from all further obligations: it has to repay its debt to the IMF at a later date. In other words, the assistance provided by the IMF in its function as lender of last resort accrues not to the debtor country, but to its creditors.

The repayment of loans is linked to economic adjustments that involve a slowdown in growth which could at times be considerable. This does not affect all social strata equally. The cause of the excessive indebtedness may lie in the fact that the social groups responsible for the indebtedness are not identical with those that have to bear the costs of the economic adjustment associated with repaying the debt. Thus, drawing on the insurance offered by the IMF in the end means transferring money from the population of the debtor country to its creditors. Accordingly, this benefit does not involve the transfer of resources of the insurer (which is financed by the taxpayers of the rich countries) to the debtor country (Jeanne and Zettelmeyer, 2001).

Up to now, the debtor countries, with a few exceptions, have always repaid their debts to the IMF. This will not necessarily always be the case, however. If debtor countries were to stop repayments, the taxpayers of those countries that finance the IMF would have to shoulder the resulting losses. This aspect must also be considered in any assessment of the moral hazard induced by the IMF.

2 Recent IMF measures to deal with moral hazard

Recently, the IMF has launched a number of initiatives closely resembling certain measures that national lenders of last resort and national monetary authorities have taken to directly and indirectly counter moral hazard. The number and diversity of the measures demonstrates that there is no simple solution to the problem of moral hazard.[3] This is true not only at the national, but also at the international level.

The high price of the Supplemental Reserve Facility provides little deterrence

The classic solution for reducing moral hazard is to charge a high rate of interest for a last-resort credit. Thornton and Bagehot outlined this solution at the national level in the 19th century. Raising the price of a last-resort credit has the effect of curbing demand for the services of the lender of last resort, and hence of reducing moral hazard.

The IMF has created a facility that follows this principle, the Supplemental Reserve Facility, which offers loans at a high rate of interest. Although the IMF has made use of this facility, the demand for credit has not decreased. There are three reasons for this. First, the relatively strict conditions of the facility do not apply to all last-resort credits. Second, even in the case of loans on these conditions, the disadvantage in the form of higher credit costs is still far less serious than the negative consequences of no credit supply at all. Third, the deterrent effect on the demand for credit is also moderated by the fact that in the past the IMF has in certain circumstances approved the conversion of loans initially granted at a high rate of interest into loans at normal rates of interest. This has occurred when the debtor has not been able to pay back the first loan within the prescribed time limit. It is thus clear why the creation of this new, high-interest facility has hardly weakened demand for last-resort loans.

Constructive ambiguity is attractive, but unsuitable

To reduce moral hazard, the lender of last resort can leave the private sector in the dark about its intentions, i. e. not indicate whether it really is prepared to intervene in a crisis. Creditors faced with a potential loss will be more careful about extending loans. On the one hand, this strategy is ambiguous, as it is based on uncertainty about the actions of the lender of last resort; but on the other hand it is also constructive, because it reduces the probability that the lender of last resort will have to intervene.

The principles that the IMF applies at present to decide whether it will provide assistance in a crisis are based on constructive ambiguity. In this regard, two principles that the International Monetary and Finance Committee adopted at Prague in September 2000 are relevant:
1. official financing is limited;
2. IMF lending will depend on the chances of a country regaining access to the capital markets: if the prospects are good, an extraordinary loan is justified.

These two principles are the concrete expression of constructive ambiguity. According to the first principle, the IMF reaffirms its intention of making only modest contributions to help overcome possible balance of payments difficulties. The second principle, on the other hand, weakens this statement by allowing exceptions, without however going into greater detail about the circumstances that apply to such exceptional cases. Obviously, the appraisal of whether the prospects of regaining access to capital markets are good or not offers wide scope for interpretation.

3   Freixas *et al.* (1999) discuss in detail the various measures adopted by national lenders of last resort to reduce moral hazard.

The most serious weakness in a policy of constructive ambiguity is its lack of credibility. It is time inconsistent. Whereas ex ante the IMF can leave market participants in the dark about whether it will help a debtor country in difficulties, such an attitude is not optimal ex post. If the international community does not want to accept the risk of a systemic crisis, it will support a debtor country in difficulties. However, it should be mentioned at this point that in two recent cases the IMF declined financial support for an important member: Russia (1998) and Argentina (from the end of 2001). It cannot be said with certainty whether these two cases are sufficient confirmation that the IMF has been successful with its policy of constructive ambiguity or whether – in these two cases – no systemic risk actually existed under the conditions prevailing.

A policy of constructive ambiguity has a second disadvantage. It discriminates against small debtor countries, for they are not regarded as important enough to trigger a systemic crisis.

Contingent Credit Line is hardly credible

In addition, the IMF has created a Contingent Credit Line facility which allows member countries that fulfil certain conditions to obtain loans as needed on terms that are more favourable than those of the Supplemental Reserve Facility. Up to now, no country has applied for this facility. This is not surprising. A country that applies for it must fear that it will be seen as sending out a warning signal to the market, resulting in higher capital costs and possibly less access to capital. In the same vein, the IMF cannot reserve its resources solely for those countries that fulfil certain conditions – as proposed, for instance, in the report of the International Financial Institution Advisory Commission chaired by A. H. Meltzer (2000). This solution, too, is time inconsistent: it would not be optimal to refuse assistance to a country in danger of triggering systemic risk on the pretext that the country failed to fulfil certain conditions.

Prevention and transparency are necessary, but insufficient

Furthermore, the IMF has passed a package of measures intended to indirectly reduce moral hazard. For this purpose, it has considerably expanded its instruments of crisis prevention in recent years. It has developed a novel concept for analysing the financial sector that complements its traditional macroeconomic analyses. In addition, it has adopted more transparent methods of presenting the results of its analyses. As regards the financial sector analysis, the preventive measures have been implemented in three steps. In the first stage, the IMF or another specialised institution draws up a standard or a code against which the practices applied can be measured.[4] Then, the IMF assesses these practices and their observance in member countries at regular intervals. The assessments are carried out in a Financial Sector Assessment Program (FSAP). The IMF practices meta-prevention: it does not supervise itself, but makes recommendations to the supervisory authorities. Finally, the recommendations drawn up on the basis of this assessment are published in a report (Financial Sector Stability Assessment). The publication of the assessment results on the state of an economy and its financial system is intended to strengthen market discipline by inducing financial market actors to withdraw from countries with an excessive risk. The resulting transparency makes it possible to differentiate between good and bad risks.

Since the beginning of 2002, the IMF has also been assessing global financial stability at quarterly intervals (Global Financial Stability Report). These reports expand and replace the annual report on developments in international capital markets and also complement the semi-annual report on the global economy (World Economic Outlook).

Developments in the field of financial sector analysis show that the IMF has changed its traditional methods of work, which were concerned solely with surveillance of monetary and fiscal policies. This approach was suitable so long as countries' biggest balance of payments problem was due to imbalances in the current account, caused by monetary or fiscal disequilibrium. But now that balance of payments problems go beyond just the current account, this approach is inadequate (Chang and Velasco, 2001; Diamond and Rajan, 2001).

4   At present, the most important standards and codes cover the following areas: monetary and financial policy transparency, fiscal transparency, data dissemination, banking supervision, insurance supervision, securities regulation, payments systems, corporate governance, accounting, auditing, insolvency and creditor rights.

Preventive measures must be taken to identify situations that could cause balance of payments problems in good time. If a recommendation by the IMF triggers corrective measures, there is less likelihood that it will have to intervene as lender of last resort. This also indirectly reduces moral hazard. Besides this advantage, though, prevention has one great weakness. Each financial crisis has its peculiar characteristics. If these were always caused by a limited and known number of factors, it would be enough to establish the absence of these factors to completely exclude the emergence of a crisis. But this is not the case, because each crisis differs from every other. Consequently, even the most ingenious system of prevention would not be able to recognise all crises.

The objective of greater transparency is to enable market forces to exercise their disciplining function better and to sanction bad debtors by restricting credit before a situation becomes utterly hopeless. Transparency alone, however, will not achieve this goal. As they know that there is an institution prepared to act as a lender of last resort, private creditors see no reason to cut off credit to bad debtors. Withdrawal simply means lower earnings, because bad debtors pay a higher rate of interest than lower-risk debtors.

3 Involving the private sector

Involving the private sector in crisis management also indirectly reduces moral hazard. The objective is to convince creditors to extend payment deadlines or to waive part of the debt – in other words, to agree to a debt restructuring. Just as large IMF loans create moral hazard, so the involvement of private creditors diminishes this risk, because it reduces the involvement of the IMF. In these cases the private creditors themselves – and not the IMF – provide additional liquidity or, if necessary, waive part of the debt.

Unilateral suspension of debt service repayments also results in private sector involvement, but this amounts to coercion and provides only a costly, temporary breathing space: the sovereign debtor is cut off from the rest of the world, without any effect on its outstanding debts. Such an emergency measure goes beyond the scope of this paper.[5] If this solution is rejected, and assuming that the IMF neither can nor will stand by idly, the remaining choice is between the two alternatives mentioned above: the IMF assists countries in financial difficulties, or it convinces private creditors to step in. Whereas the first scenario creates moral hazard, the second does not.

The main difficulty in involving the private sector is the free-rider problem. As a group, creditors are naturally interested in agreeing to debt restructuring so as to avoid a default. But at the same time, it is also in the interest of each individual creditor that all the other creditors (but not he himself) should approve a debt restructuring: the more creditors renounce part of their claims, the higher the part of the claims available to the free rider. The consequence is that no creditor is prepared to agree to a debt restructuring. To overcome this hurdle it is necessary to convince all creditors that none of them can ride for free, unless the other creditors are prepared to continue without him. It must be made clear to them that absolutely nothing will happen if each acts on his own. Hence, the creditors' action must of necessity be coordinated. Each creditor must be sure that all the others are pulling in the same direction.

5 Suspension of debt service repayments by a private debtor leads to the opening of bankruptcy proceedings, possibly resulting in the liquidation of the debtor's assets and in the creditor receiving only a pro rata share of the existing net assets. However, this procedure is not possible in the case of a sovereign debtor, as no mechanism exists for opening bankruptcy proceedings against a sovereign debtor.

The greater the number of creditors involved, the more difficult coordination is. There are more bondholders than banks that can extend loans. Therefore it is more difficult to gather bondholders around one table or bring them together for a teleconference. Moreover, unlike banks, bondholders are usually unknown to the debtors. Furthermore, the more liquid the debt instruments are, the more complex the coordination. In a liquid market, creditors that do not want to participate in a debt restructuring can easily dispose of their securities.[6] Finally, coordination is also complicated if creditors have an increased awareness of the risks involved and state their loans in the balance sheet at market value rather than at face value. Provision against loans reduces the loss suffered in the event of debt restructuring. This weakens the negotiating position of the other creditors and diminishes the chances of successful coordination.

The involvement of the private sector can be achieved either through ad hoc procedures or through a sovereign debt restructuring mechanism.

Ad hoc procedures

The ad hoc coordination procedures currently applied or proposed depend mainly on the type of debt instrument involved. In the case of medium- and long-term bank loans, the leading creditor banks known as the London Club exercise the coordination function. They negotiate a debt restructuring agreement with the debtor, and then circulate it among the other creditor banks. The experience of the 1980s shows that it is not always easy to convince the other creditor banks to underwrite this agreement. Restructuring of short-term bank loans is much more seldom. In the case of Korea, the banks reached a consensus in 1998 under which each undertook not to reduce its credit line if all the other banks agreed to do the same. To ensure that the banks really did observe this agreement, the Federal Reserve (the US central bank) assumed responsibility for coordination. It organised teleconferences between the central banks of the countries whose banks had granted Korea loans. Each central bank then informed the banks in its country of the other banks' credit lines. In 2001, the IMF tried to set up a similar mechanism for Turkey, but in vain. The exchange of information did not prevent banks from reducing their commitments. With hindsight, it is less surprising that the coordination attempt for Turkey failed than that the coordination for Korea succeeded.

In the 19th and the first half of the 20th century, bondholders' committees assumed responsibility for rescheduling claims arising from bonds. Their solutions were similar to those for restructuring debts owed to banks. The committee of creditors appointed representatives who were entrusted with negotiating the debt restructuring. Given the large number of creditors, the process was very laborious and could take years. The debt restructuring negotiations in the inter-war period bear witness to this (Eichengreen and Portes, 1989).

Throughout the second half of the 20th century and until a few years ago, no bond debts at all were restructured. Bondholders' committees disbanded one after the other. Recently, the IMF has come out in favour of reintroducing these committees. As an alternative to forming committees, bond agreements could contain clauses that overcome the problem of coordinating numerous anonymous creditors. One type of clause would be needed to facilitate the appointment of representatives to negotiate the conditions of restructuring. A second type of clause would be needed to prevent a minority of creditors from blocking a restructuring agreement. Accordingly, these clauses would have to make it possible for the majority of creditors to accept a restructuring agreement negotiated by their representatives. The introduction of collective action clauses in the bond agreements of sovereign debtors was first proposed in 1996 by the Group of Ten after the Mexican financial crisis (Group of Ten, 1996).[7]

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6 Securities of debtors in financial difficulties are sometimes bought by a particular category of investors. This group has specialised in buying securities whose market value is far below the nominal value (*vulture funds*). Their objective is to receive the full sum owed. These buyers add considerably to the complexity of restructuring.

7 Bonds with clauses that fulfil a similar function existed earlier (British style bonds). However, the practical significance of these clauses is unclear. Pakistan, which in 1999 rescheduled bonds issued under English law, did not make use of these bond clauses. Should this be seen as reluctance on the part of Pakistan, or are the clauses inadequate? This question cannot be answered unequivocally.

The main difficulty with both approaches – committees and clauses – is that they are not applied automatically. Neither debtors nor creditors can be compelled to use them. Creditors need to make a deliberate decision to form committees or to incorporate such clauses in bond contracts. Committees are formed or clauses introduced only if the creditors are interested in doing so – i.e. if they do not reduce the availability of credit from the IMF. As this is precisely what the IMF is trying to achieve, there is no incentive for the creditors to act. In other words, the private sector, expecting that the IMF will not run the risk of a systemic crisis, is not prepared to adopt measures that would facilitate its involvement in solving crises. The private sector expects that in the absence of such measures there is a greater likelihood that the IMF will intervene. Even if creditors agree one day to only issue bonds that incorporate such clauses, bond debt existing at that time, which did not contain such clauses, would still have to be taken into account. Even if this problem were completely solved, other debt instruments that did not contain such clauses might still cause difficulties. It thus remains uncertain whether the private sector will participate in solving crises through ad hoc approaches in general and more specifically through collective action clauses.

Sovereign debt restructuring mechanism

An alternative to these ad hoc approaches is to create a sovereign debt restructuring mechanism (SDRM) capable of coordinating the intervention of private creditors in crises. Krueger (2001 and 2002) has outlined the goals for such a mechanism:

1. to allow for a temporary stay on creditor litigation after a suspension of payments but before a restructuring agreement is reached;
2. to enable a qualified majority of creditors to bind a dissenting minority to the terms of a restructuring agreement;
3. to facilitate the provision of new money from private creditors during the period of the stay;
4. to protect creditor interests by giving them assurances that the debtor country will pursue economic policies enabling it to resume repayments of foreign debts and that it will negotiate the restructuring of these debts in good faith.

Such a mechanism at the international level corresponds to the procedures applied at the national level to bankrupt companies in the private sector or entities in the public sector (municipalities). The objectives of such proceedings are preventing over-hasty sales of assets and, as a counterweight, establishing an environment in which the debtor's activities can be monitored. With one exception, the aforementioned goals are identical with the economic objectives that should ideally be applied in private bankruptcy proceedings, as described by Hart (1995). An efficient procedure has to maximise the value of the assets, primarily by preventing a precipitate sale of assets by rash creditors, and at the same time create conditions that facilitate a possible restructuring of the illiquid or insolvent company. This goal is formulated in the first and second points of the list above. An efficient procedure must ensure that the ranking of the debtors is maintained. This concern is addressed in the third point. Finally, the procedure must make it possible to mete out appropriate penalties to those responsible for the bankruptcy. This final condition is not fulfilled.

The creation of such a mechanism faces serious obstacles. There are two main difficulties. First, the conditions for dealing with the bankruptcy of a sovereign debtor have to enjoy global recognition. In other words, the procedure must be accepted by all jurisdictions. If this is not the case, bonds will simply be issued in countries that do not recognise these conditions. The same applies to bank debts which will be reported in the financial statements of companies domiciled in these countries. Second, this framework must ensure that the debtor does indeed pursue economic policies that put it in a position to resume repayment of foreign debt. In addition, the debtor must negotiate debt restructuring in good faith. In the case of violations it must be possible to apply sanctions. Because the debtor is a sovereign state, and the government bears responsibility for financial difficulties, it is not easy to find a solution that takes this criterion into account.

The implementation of this mechanism faces two further difficulties. It will be necessary to determine the institution – IMF, debtors or creditors – that can take the first step toward restructuring within this formal framework. In practice, such a procedure would only be opened if the IMF restricted access to its resources. Therefore, the determining factors for tapping IMF resources must receive particular attention. Second, an authority should be appointed to mediate in possible conflicts among the creditors or between debtors and creditors.

The question of creating a mechanism to deal with the bankruptcy of a sovereign debtor was raised after the Mexican crisis. At the time, the idea was rejected for various reasons (Group of Ten, 1996). It was thought that negotiations would be very difficult and time-consuming, because the goals and the philosophy of bankruptcy procedures vary considerably from country to country. The authorities responsible for economic policy cannot be supervised or replaced like the managers of a private company in domestic bankruptcy proceedings. It was thought that litigious creditors would not be a serious problem for the sovereign debtor and it would therefore not be necessary to protect the latter. Finally, it was also assumed that several of the objectives of such a mechanism could be achieved with more informal methods. Although the first two theses have proved to be correct, the last two have turned out to be wrong. Litigious creditors that went to court were able, for instance, to prevent Peru from normalising its relations with more cooperative creditors. The Asian financial crisis and in particular the way in which the IMF has dealt with the most recent crises in Argentina (up until autumn 2001) and Turkey have demonstrated the limits of current informal methods.

The difficulties described here must not be taken as an excuse to drop the idea of creating a sovereign debt restructuring mechanism. Talking openly about these difficulties rather constitutes a call to overcome them. Despite these difficulties, such a mechanism offers a sensible solution to the problem of creditor coordination. Coordination is necessary to ensure the participation of the private sector in crisis management, a participation that in turn is necessary to reduce the moral hazard caused by large IMF loans.[8]

8   Simply restricting IMF loans without a sovereign debt restructuring mechanism results either in activation of ad hoc procedures or in a unilateral suspension of debt servicing. Given the limited efficiency of these two methods, the IMF makes more resources available than necessary. The reduction of IMF loans goes hand in hand with a sovereign debt restructuring mechanism.

4   Concluding remarks

At the end of the 1990s, the IMF redefined its role. It increasingly acquired the characteristics of an international lender of last resort. The existence of last-resort lending has helped to weaken perceptions of the risk associated with international financing. To counter this increase in moral hazard, the IMF adopted a number of initiatives. It created a credit facility that allows it to extend large loans at a higher rate of interest. It has explicitly restricted access to official financing, while simultaneously reserving for itself the right to depart from this policy in exceptional circumstances. Furthermore, it has expanded its role in crisis prevention by widening its field of activity in the financial sector and giving greater transparency to the results of its analyses. However, it is evident that these measures or statements of intent do not go far enough in diminishing moral hazard. Rather, the way to achieve this goal appears to include private sector involvement, despite the difficulties involved in realising it.

At present, the international community and the IMF in particular are examining the questions of collective action clauses for sovereign bonds and a sovereign debt restructuring mechanism. Work is proceeding in both directions, and mainly for two reasons. First, there are too many difficulties that affect both strategies for either of them to be abandoned at this stage. Second, discussions on various levels about which strategy to choose revealed sharp differences of opinion among creditor countries, between the private sector and the public sector in the creditor countries, and between debtor countries and creditor countries. In view of these differences of opinion, the private sector is focusing on collective action clauses for sovereign bonds, while the IMF – without thereby neglecting the study of modalities of its involvement in the introduction of such clauses – is intensively studying a sovereign debt restructuring mechanism.

Bibliography

Chang, R. and Velasco, A. 2001. A Model of Financial Crises in Emerging Markets. *Quarterly Journal of Economics* 116: 489–517.

Diamond, D.W. and Rajan, R.G. 2001. Banks, short-term debt and financial crises: theory, policy implications and applications. *Carnegie-Rochester Conference Series on Public Policy* 54: 37–71.

Eichengreen, B. and Portes, R. 1989. After the Deluge: Default, Negotiation, and Readjustment during the Interwar Years. In B. Eichengreen and P.H. Lindert (eds.), *The International Debt Crisis in Historical Perspective*, Cambridge: MIT Press.

Fischer, S. 1999. On the Need for an International Lender of Last Resort, revised versions of a paper delivered to a joint luncheon of the American Economic Association and the American Finance Association, New York. http://www.imf.org/external/np/speeches/1999/010399.htm.

Freixas, X., Giannini C., Hogarth G. and Soussa F. 1999. Lender of last resort: a review of the literature. Bank of England *Financial Stability Review* 7: 151–167.

Group of Ten. 1996. *The Resolution of Sovereign Liquidity Crises*. A Report to the Ministers and Governors prepared under the auspices of the Deputies. Basel: Bank for International Settlements and Washington D.C.: International Monetary Fund.

Hart, O. 1995. *Firms, Contracts and Financial Structure*. Oxford: Clarendon Press.

International Financial Institution Advisory Commission. 2000. *Report*. Commission under the chairmanship of Meltzer, A.H.

International Monetary Fund. *Annual Report*, various years.

Jeanne, O. and Zettelmeyer, J. 2001. International bailouts, moral hazard and conditionality. *Economic Policy, A European Forum* 33: 409–432.

Krueger, A. 2001. *International Financial Architecture for 2002: A New Approach to Sovereign Debt Restructuring*. Paper delivered on the occasion of the National Economists' Club Annual Members' Dinner of the American Enterprise Institute, Washington D.C. http://www.imf.org/external/np/speeches/2001/112601.htm

Krueger, A. 2002. *A New Approach to Sovereign Debt Restructuring*. Washington D.C.: International Monetary Fund.

Chronicle of monetary events

Lowering of the target range for the three-month Libor rate

On 26 July 2002, the Swiss National Bank lowered the target range for the three-month Libor rate by half a percentage point to 0.25%–1.25%. By easing the monetary reins, the National Bank reacted to the delayed economic recovery and the further real appreciation of the Swiss franc.

Target range for the three-month Libor rate left unchanged

At its quarterly assessment of the situation on 19 September 2002, the National Bank decided to leave the target range for the three-month Libor rate at 0.25%–1.25%.