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### **Kingdom of the Netherlands—Netherlands: Selected Issues**

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KINGDOM OF THE NETHERLANDS—NETHERLANDS

Selected Issues

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May 24, 2000

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## DEALING WITH CYCLICAL TENSIONS

### I. INTRODUCTION AND SUMMARY

1. Several years of strong growth of the Dutch economy have contributed to a sharp decline in unemployment and rising demand pressure. Consequently, in the first quarter of 2000 registered unemployment had fallen to 2.8 percent, a level not seen since the early 1970s and one of the lowest in the euro area. The recent episode of high growth builds on the striking recovery of the Dutch economy following the economic crises of the early 1980s. At that time, sharply rising unemployment and fiscal imbalances triggered a comprehensive policy response, including fiscal consolidation, tax cuts, social security reforms, and consensus-based wage moderation. During the past six years, the positive effects of these policies on employment and confidence have boosted domestic demand, bringing the Dutch economy to a cyclically advanced position in comparison with the core of the euro area.

2. Against the backdrop of this economic situation and the prospect of strong growth continuing for at least the next few years, this paper addresses three issues:

- the extent of current demand pressure;
- the likely adjustment of the Dutch economy to these and prospective cyclical tensions, in the context of monetary union; and,
- the scope for policy action.

3. To gauge the extent of demand pressure in the Dutch economy, Section II reviews the results of a menu of methods based on the familiar NAIRU-potential output framework. All methods indicate that output in 1999 is above potential, while unemployment is below the NAIRU. Overall demand pressure now appears to be at least as intense as during previous cyclical peaks, if not more so. With respect to methodology, a system estimate of the NAIRU and potential output appears to be a promising improvement over the standard single variable approaches, mainly because it ensures consistency between the estimates of the two gaps while still allowing to consider explicitly factors that may shift the relationship between inflation and unemployment over time (e.g., prices of tradables).

4. Adjustment to cyclical tensions is not necessarily a smooth process. Although previous cycles differed from the current one in several respects, a brief review of history (Section III.A) indicates how erratic wage and house price behavior could upset the adjustment process—possibly resulting in a boom-bust cycle. The tendency for Dutch fiscal policy to be procyclical has also been a factor amplifying fluctuations in economic activity. At this point, most forecasters see the Dutch economy adjusting smoothly to current and currently anticipated demand pressures (Section III.B). Nonetheless, the vulnerability of the economy to upside demand risks seems to have heightened at this juncture. Simulations of conceivable upside demand shocks using the models underlying the central forecasts reveal that such

shocks could have a significant impact on the Dutch economy (Section III.C). They could add as much as one percentage point to inflation after a few years, though a weakening of competitiveness and a decline of the external current account balance would eventually mitigate these pressures.

5. As member of the euro area, the Netherlands has no control over its monetary conditions (as was already the case, de facto, under the policy of pegging to the deutsche mark). Thus fiscal policy is the only available instrument to manage aggregate demand. Simulations reported in Section IV indicate that changes in monetary conditions would have a significant impact on the Dutch economy. By contrast, the scope for budgetary policy to counteract current and prospective demand pressure is limited, although certainly not negligible, with a fiscal multiplier of about  $\frac{1}{2}$  after two years.

## II. ESTIMATING THE OUTPUT GAP

6. To assess the cyclical position of the Dutch economy, this section provides a comparison of different estimates of the NAIRU and potential output, variables that cannot be observed directly.<sup>1</sup> Applying a range of methods provides an indication of the margin of uncertainty that is inherent to such estimation. Estimates of the output gap in 1999 range from 0.4 percent to 3.1 percent above potential (Table 1). Methods based on a production function approach yield the lowest gap estimate, while methods based on joint estimation of the NAIRU and potential output and structural models yield higher figures.

7. Before discussing the estimation results in more detail, it must be noted that none of the statistical methods considered are well equipped to incorporate the effects of structural reforms, social changes, and the evolving institutional features of the Dutch economy. The past three decades have witnessed a trend reversal in economic performance. During the 1970s, secular labor market performance deteriorated, and the adverse consequences of this were aggravated by the ill-considered use of fiscal stimulus and repeated devaluations to attempt to alleviate the effects of structural rigidities. Unemployment trap problems turned much of the job losses in the late 1970s into structural inactivity. In 1982, social partners concluded a framework agreement on wages, and subsequently achieved an enduring consensus on wage moderation, which set the stage for a sustained improvement in economic performance. Unions gave greater weight to outsiders' interests in setting wage demands, implying a structural decline in the NAIRU. The reduction of replacement rates in the mid-1980s, the tightening of eligibility for social security benefits, and the growth of part-time work operated in the same direction. Labor unions have adopted a partly rules-based approach to wage bargaining, which appears to have muted and delayed the response of wages to labor market conditions. Furthermore, the government has actively, and with some

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<sup>1</sup> The output gap is defined as actual minus potential output, in percent of the latter. For a more complete overview of the various methods, see Cerra and Saxena (2000).

success, used tax cuts to promote wage moderation, while pursuing policies to improve the economic performance of labor and product markets. The development of potential output (for a given equilibrium unemployment rate) has been affected by the gradual shifts toward services production and the increased participation of relatively well-educated women, often in part-time jobs. Also, wage moderation promoted a more labor-intensive growth pattern—reflected by a slowdown in productivity growth.

8. Cyclical developments can be illustrated by the deviations between actual output and unemployment from potential output and the NAIRU, respectively (Figures 1 and 2, and Table 1).<sup>2</sup> For Figure 1, potential GDP was obtained using a production function approach,<sup>3</sup> while Elmeskov's (1993) approach was applied to determine the NAIRU.<sup>4</sup> Alternative estimates of the development of the output and unemployment gap are provided in Figure 2. These include the smoothing or filtering of the related observed variables (actual output and the actual unemployment rate) using the Hodrick-Prescott filter.<sup>5</sup>

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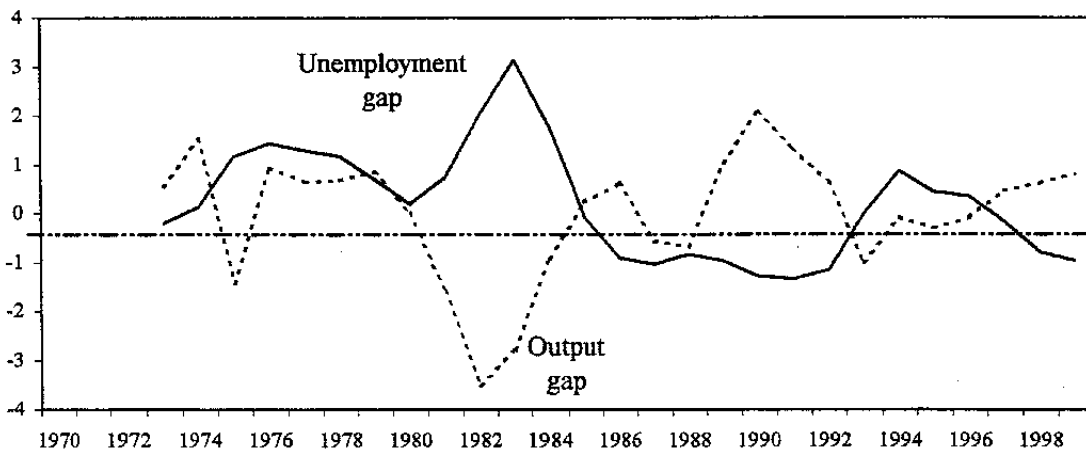
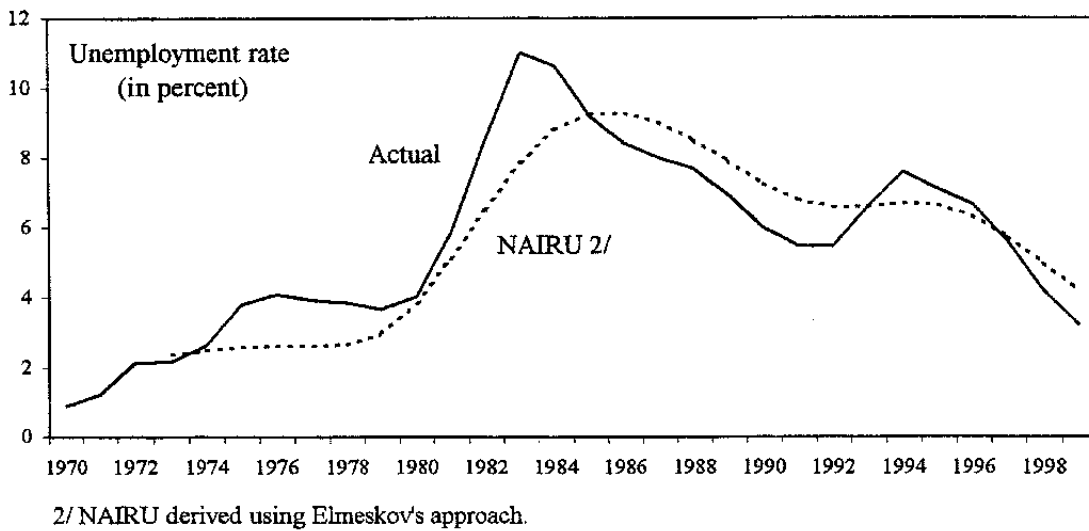
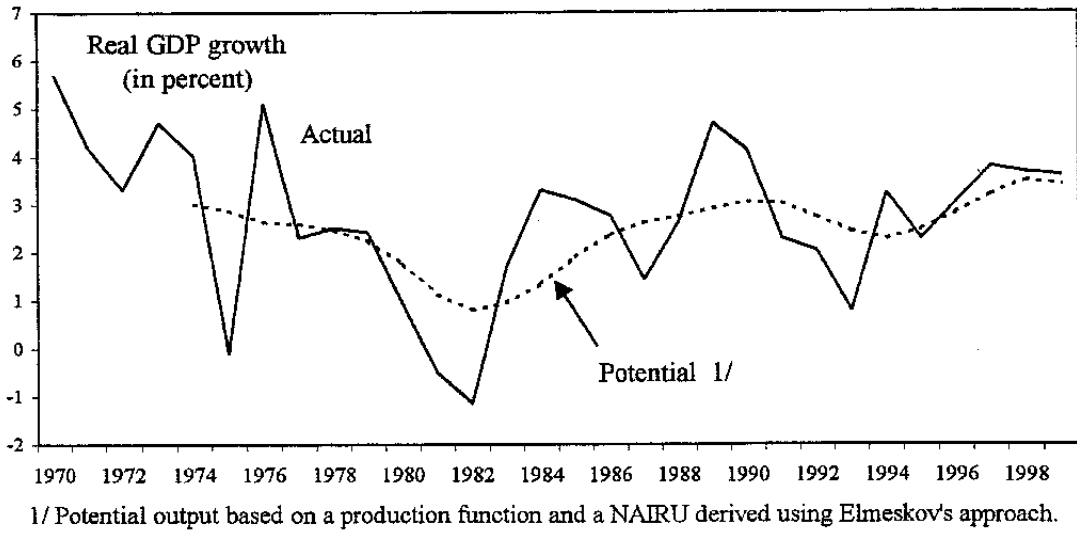
<sup>2</sup> The unemployment gap is defined as the actual unemployment rate (in percent) minus the NAIRU. All methods are estimated for the period 1970–99.

<sup>3</sup> A Cobb-Douglas production function was used. While adding to the understanding of the factors underlying potential output, this method shifts the issue of assessing trends from overall output to the individual arguments of the production function. In particular, the NAIRU, and a view of normal capacity utilization (or total factor productivity) are crucial. Bolt and van Els (2000) compute output gaps in a similar manner, but using a CES production function) for 13 OECD countries.

<sup>4</sup> For this method, wage inflation is assumed to be proportional to the difference between actual unemployment and the NAIRU (or, more accurately, the non-accelerating wage rate of unemployment, NAWRU). Here, wage inflation is defined as contractual wage growth, unless otherwise indicated.

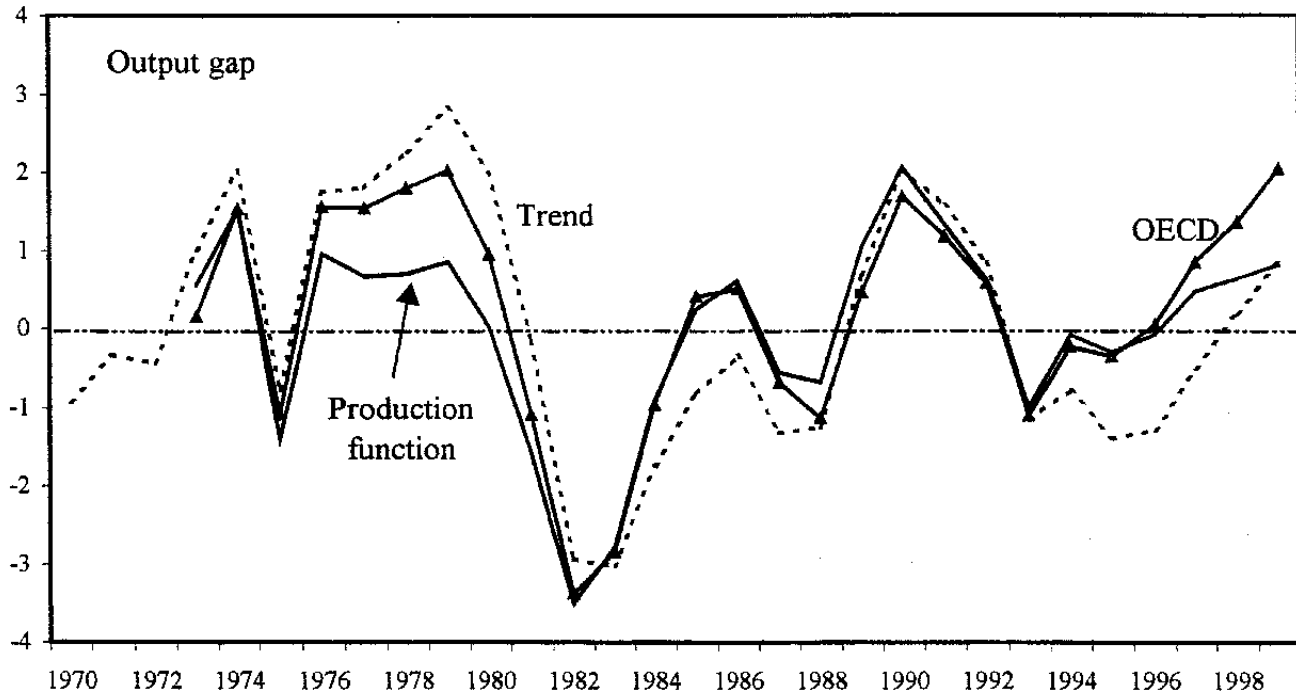
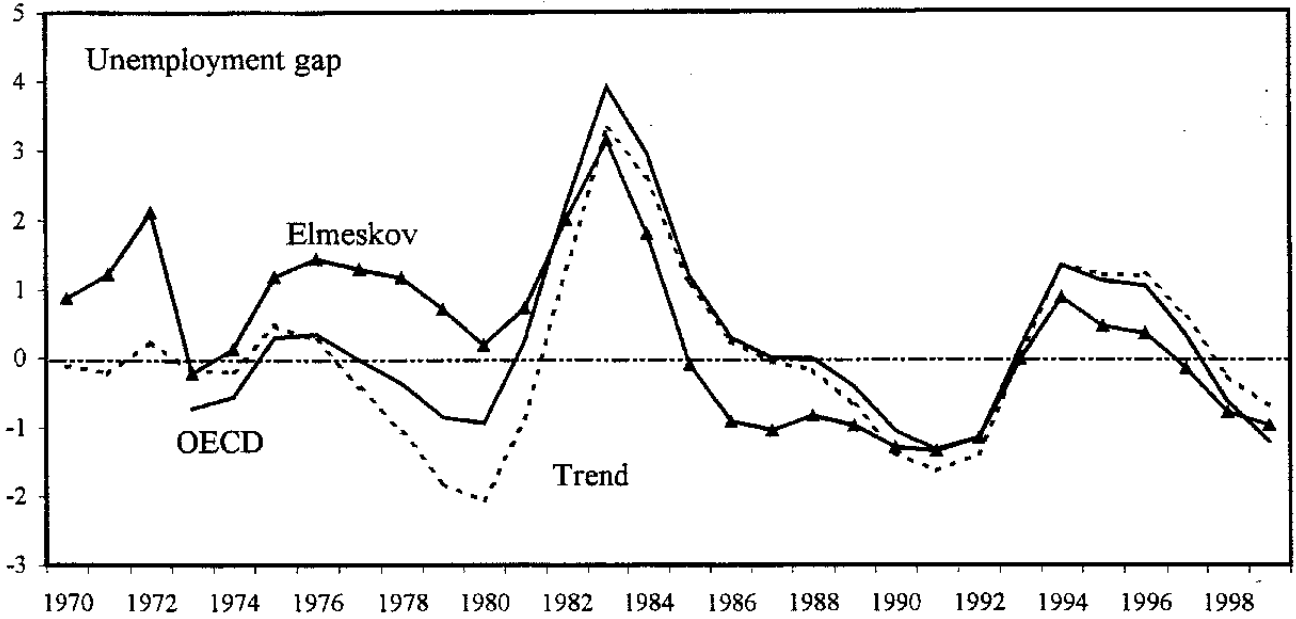
<sup>5</sup> The well-known problems related to the Hodrick-Prescott filter include the end-of-sample bias and the arbitrary choice of the detrending parameter. In this paper, using annual data, this parameter was set at 100, unless otherwise indicated.

Figure 1. Netherlands: Cyclical Developments, 1970-99



Sources: IMF, WEO, and Fund staff calculations.

Figure 2. Netherlands: Measures of the Unemployment and Output Gap, 1970-99  
(In percentage points)



Source: Fund staff calculations.



Table 1. Netherlands: Estimates of the Output and Unemployment Gaps in 1990–91 and 1999

(In percentage points)

Estimation procedure:	Output gap 1/		Unemployment gap 1/	
	1990	1999	1991	1999
Hodrick-Prescott filter				
100	2.0	0.9	-1.6	-0.7
200	1.8	1.3	-1.7	-0.9
Elmeskov				
Using contractual wages			-1.4	-1.0
Using market sector wage cost			-1.4	-0.7
OECD	1.7	2.0	-1.3	-1.2
Production function, With unemployment based on:				
Hodrick-Prescott filter (100)	2.0	0.6		
Elmeskov (contractual wages)	2.0	0.8		
Elmeskov (market wage costs)	1.9	0.6		
OECD NAWRU	1.9	1.0		
Joint estimate	-0.9	2.3	0.9	-1.1
CPB	2.8	3.1		-2.1

Sources: OECD, *Main Economic Indicators*, CPB, *Centraal Economisch Plan 2000*, and Fund staff calculations.

1/ Actual minus potential or NAIRU.

9. Some broad trends are common to all estimates, which also indicate that by 1999, if not earlier, the economy was operating above capacity. A severe recession in the early 1980s led to a protracted period with excess capacity and an unemployment rate much above the NAIRU. From 1983 to 1992, both the NAIRU and actual unemployment declined, and, except in 1987, the economy was growing somewhat faster than potential. Both the output and unemployment gaps indicated intense demand pressure during the high growth episode of the late 1980s, until the recovery was interrupted by the 1991–93 slowdown. Following a brief pause, the NAIRU and unemployment rate have resumed their downward trend over the past three years, with the latter falling at a very rapid pace. Estimates of the output and unemployment gaps in 1999 are indicative of excess demand pressures in 1999 (Table 1). However, the estimates suggest that current demand pressures are less intense than those at

the previous cyclical peak, of 1990–91, reflecting in part the significant decline of the NAIRU during the 1990s.

10. The importance for economic growth of the turnaround in the development of the NAIRU in the mid-1980s can be illustrated by an accounting exercise of potential output based on a production function approach. Together with the increase in labor participation, the decline in the NAIRU more than offset the impact of gradual declines in population growth, the working week, and total productivity growth (Table 2).

11. The methods reviewed above fail to exploit the intrinsic economic relationship between the NAIRU and the potential output, both of which refer to an equilibrium state of the economy where the labor market clears, the economy is operating at potential, and wage and price inflation are not accelerating. Given the mutual dependency of these closely linked variables, their estimation is ideally based on a system of equations that explicitly incorporates the covariation restrictions on cyclical output and cyclical unemployment. Such a system estimate can arrive at the desired joint labor- and goods-market assessment of how far the economy is from sustainable levels of output and labor utilization.

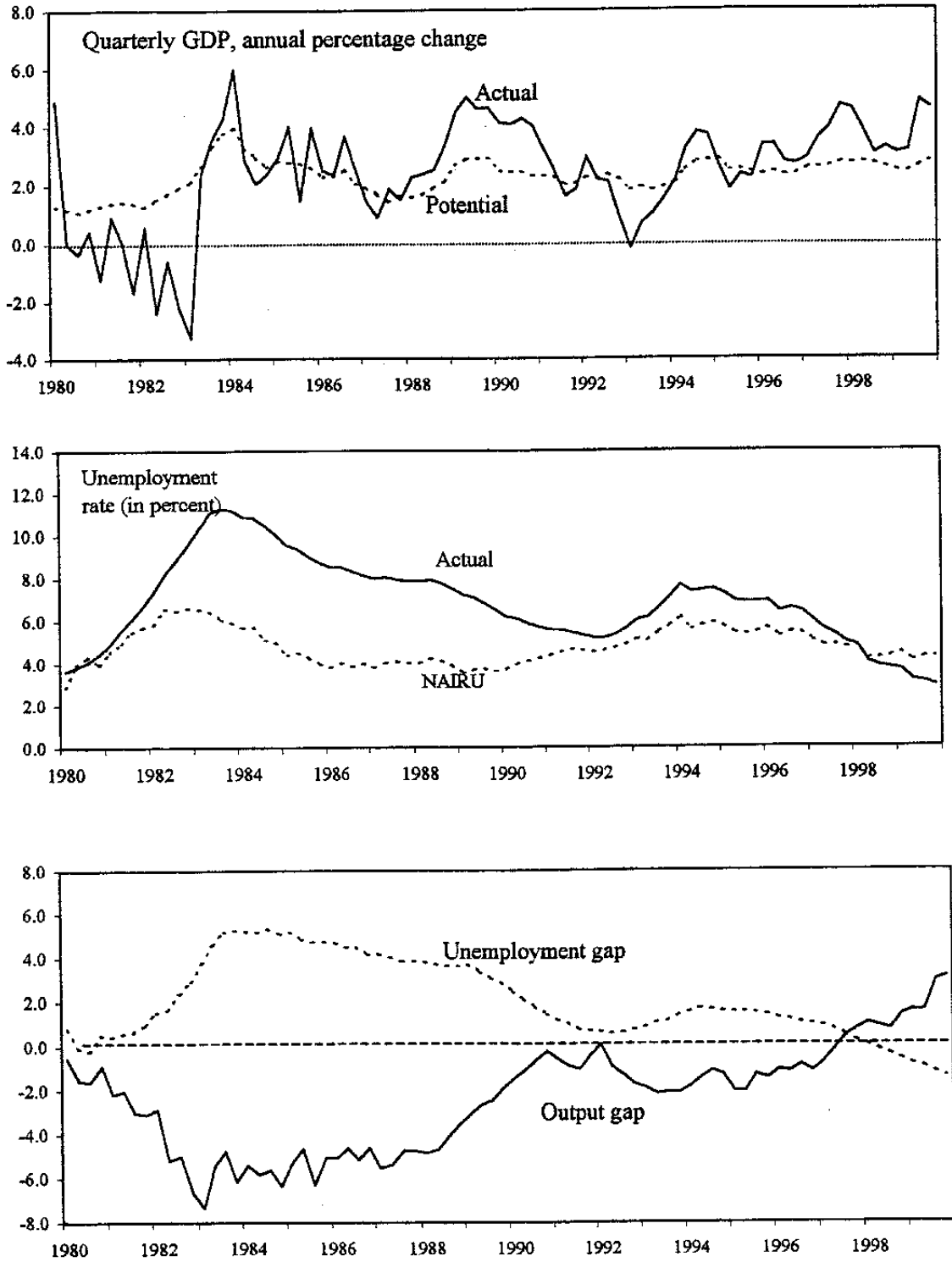
12. A joint estimate of potential output and the NAIRU—based on the unobserved components model of Apel and Jansson (1999)(Box 1)—indicates that in 1999 demand pressures were somewhat more intense than estimated by other methods (Figure 3). The output gap is 2.3 percent in 1999 and the unemployment gap -1.1 percent. By contrast, this method implies that in the early 1990s the output gap remained negative and unemployment never fell below the NAIRU. Much of the increase in inflation that emerged at that time appears to be attributable to exogenous factors, such as increases in relative import and oil prices—which are explicitly considered in the model (Figure 4). In the current cycle, at least through 1999, inflationary pressures seem to have been masked by declines in import and oil prices. The estimated joint model also includes a dummy for the policy change since the mid-1980s. Without such a dummy, estimated gaps in 1999 would be much larger.

13. Finally, a comparison can be made between these results and those of a structural model of the labor market estimated by Netherlands Bureau for Economic Policy Analysis (CPB). In that model, equilibrium unemployment is the endogenous result of wage bargaining and firms' employment decisions.<sup>6</sup> Unemployment was below its estimated equilibrium both in the early 1990s and since 1996, with a relatively small decline in the equilibrium rate during this decade. The measure of equilibrium unemployment was combined with a production function for calculating potential output. The CPB's results corroborate the finding that demand pressure was more intense in 1999 than in 1990–91.

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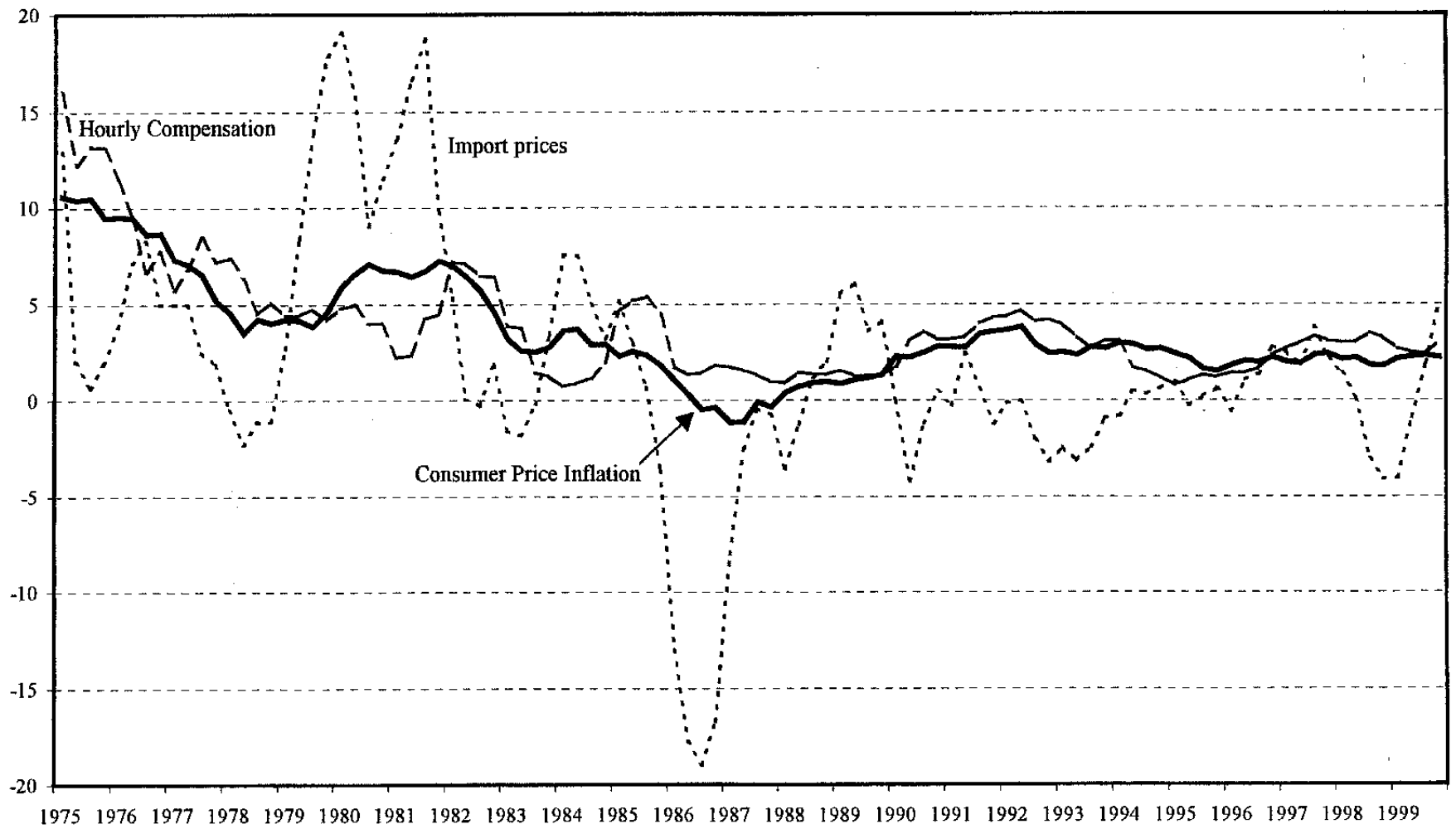
<sup>6</sup> In the model, unions' bargaining power increases with a drop in unemployment, a rise in the replacement rate, and higher taxes (as this renders nontaxed activities more attractive in relative terms). Labor demand—and thus employment—declines as wage costs rise relative to the user cost of capital. See Broer, Draper, and Huizinga (1999).

Figure 3. Netherlands: Cyclical Indicators Derived Through Joint Estimation, 1980-99



Source: Fund staff calculations.

Figure 4. Netherlands: Consumer Price Inflation, Hourly Compensation, and Import Prices 1975-99  
(Annual percentage change, seasonally adjusted)



Source: IMF, IFS.

Table 2. Netherlands: Contributions to Potential GDP Growth 1975-99

(In percentage points)

Period	GDP	Factors contributing to potential GDP growth 1/					
		Population growth	Participation rate	NAIRU	HRS/PERS 2/	CAP 3/	TFP 4/
74-78	2.7	0.9	-0.5	0.0	-0.9	0.9	2.4
79-85	1.4	0.8	-0.3	-0.7	-0.6	0.5	1.7
86-91	2.8	0.5	0.3	0.3	-0.4	0.7	1.4
92-95	2.5	0.3	0.6	0.0	-0.3	0.6	1.2
96-99	3.2	0.3	0.7	0.4	-0.3	0.8	1.2

Source: Fund staff calculations.

1/ Effects on annual potential GDP growth of changes in the available production factors and productivity, calculated using a Cobb-Douglas production function. For population growth and the capital stock, actual annual data were used. The NAIRU was derived using the Elmeskov method. For the other items, the actual series was smoothed using a Hodrick-Prescott (100) filter.

2/ Annual working hours per person.

3/ Capital stock.

4/ Total factor productivity.

Box 1. The Joint Estimation of Potential Output and the NAIRU

Apel and Jansson (1999) propose a procedure for joint estimation of the unobserved potential output and NAIRU variables, based on the Phillips curve for identifying capacity limits. Formally, the model reads (with the equations presented directly in their empirical format):

$$\Delta\pi_t = \sum_{i=1}^J \rho_i \Delta\pi_{t-i} + \sum_{j=0}^J (u_{t-j} - \bar{u}_{t-j}) + \sum_{k=0}^K \omega_k z_{t-k} + \varepsilon_{1t} \quad (1)$$

$$y_t - y_t^p = \sum_{l=0}^L \phi_l (u_{t-l} - \bar{u}_{t-l}) + \varepsilon_{2t} \quad (2)$$

$$\bar{u}_t = \bar{u}_{t-1} + \varepsilon_{3t} \quad (3)$$

$$y_t^p = \alpha + y_{t-1}^p + \varepsilon_{4t} \quad (4)$$

$$u_t - \bar{u}_t = \sum_{m=1}^M \delta_m (u_{t-m} - \bar{u}_{t-m}) + \varepsilon_{5t} \quad (5)$$

where  $\pi_t$  is the log difference of the CPI,  $u_t$  the unemployment rate,  $\bar{u}_t$  the NAIRU,  $z_t$  exogenous (supply-shock) variables,  $y_t$  the log of real output, and  $y_t^p$  the log of potential output. The error terms  $\varepsilon_{1t}$ ,  $\varepsilon_{2t}$ ,  $\varepsilon_{3t}$ ,  $\varepsilon_{4t}$ , and  $\varepsilon_{5t}$  are assumed to be IID distributed.

The model incorporates the Phillips curve (equation (1)) and Okun's Law (equation (2)), and assumes that the NAIRU and potential output are characterized by stochastic trends (equations (3) and (4)). Equation (5) specifies the evolution of cyclical employment to close the model. The vector of structural variables,  $z_t$  includes import prices and the oil price (both deflated by the CPI), the exchange rate, productivity, and a dummy for the period starting in 1985 (to capture the impact of the structural reforms).

### III. ADJUSTMENT TO CYCLICAL TENSIONS

14. Three avenues are explored below to gauge the likely adjustment mechanism of the Dutch economy to current and prospective cyclical tensions. First, two pronounced previous cycles, in 1975–82 and 1987–94, are described briefly, and an evaluation is made of the respective roles in these cycles of monetary and fiscal policies, and key features of labor and asset markets. Second, the adjustment mechanisms embedded in the central projections of a number of forecasters are analyzed. Third, the underlying macroeconomic models are used to investigate in a stylized but consistent manner the sensitivity of the outlook to upside demand risks. As the Netherlands is a small open economy and now part of the euro area, international competitiveness and the balance of payments are seen to play a key role in the adjustment process. In the course of this process, higher wage and price inflation than in trading partners is likely to result. Further upside demand shocks will increase the price response, but its likely magnitude is difficult to assess. Much will depend on whether labor and asset markets adapt smoothly.

#### A. History (1975–99)

15. Three decades of economic fluctuations reveal the key importance for the Dutch economy of the external environment and the potentially amplifying role of domestic developments and policies. In particular, the initial impetus of economic upswings and downturns was almost always of external origin. But the amplitude of the fluctuations has been strongly influenced by cycles in the housing market, the nature of the wage-setting process, and the cyclical properties of fiscal policy. In the context of the current upswing, which began in 1994 and still has to run its course, four observations are worth special emphasis (Figure 5). First, the asset-price increases accompanying the current expansion is to some extent reminiscent of the boom-bust cycle in the housing market of the late 1970s. Second, however, the monetary regime and wage-setting process prevailing today would appear to preclude a repeat of the wage-price spiral of twenty years ago, when devaluations validated accelerating wage increases. Third, still, delayed wage responses at the peak of the cycle could destabilize the adjustment process. Finally, fiscal policy still has a tendency to amplify cyclical disturbances, though less so than before 1994.

#### Cyclical developments<sup>7</sup>

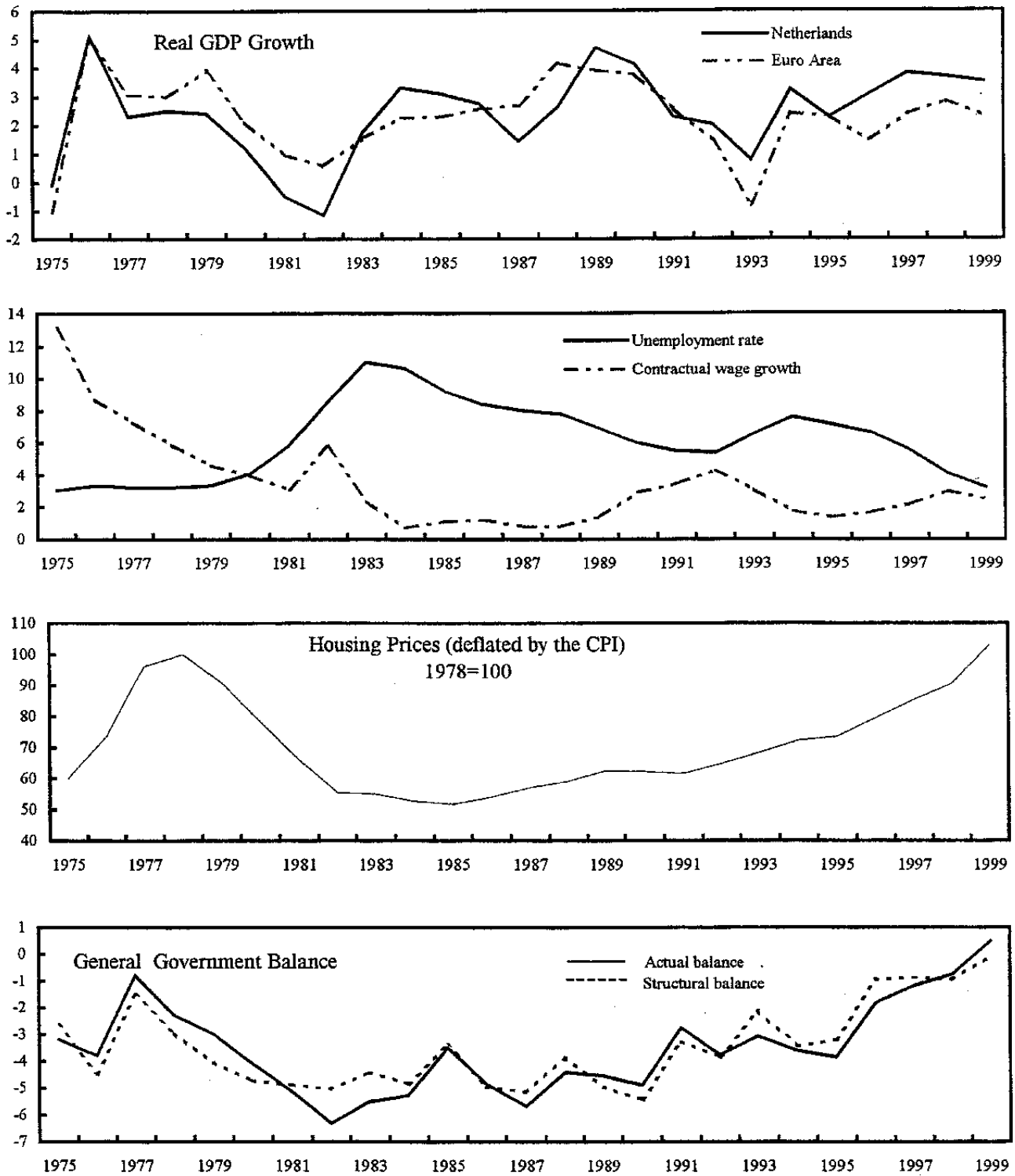
16. Overall, cyclical developments in the Netherlands have been highly correlated with those in neighboring countries. The synchronization of GDP growth among the core euro-area countries is illustrated in Figure 5 and confirmed by many empirical studies.<sup>8</sup> However, this

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<sup>7</sup> See C.M. Watson et al. (1999) for a more extensive discussion.

<sup>8</sup> See, e.g., Bayoumi and Prasad (1995).

Figure 5. Netherlands: Selected Indicators, 1975-99  
(In Percent)



Source: IMF, WEO and Fund staff calculations.



correlation has weakened somewhat since the early 1990s, as developments in Germany diverged from other core members in the aftermath of unification. As noted above, it is important to keep in mind that economic fluctuations during the past three decades have occurred against the background of a reversal in trend economic performance.

17. The slowdown in growth in the late 1970s was associated with an upward wage-price spiral, which prevented real wages from adjusting to the large terms-of-trade deterioration of the non-energy economy. Consequently, relative unit labor costs rose sharply. At the same time, a boom in the housing market during 1975–78 partially masked underlying economic weaknesses. Several factors contributed to what—with hindsight—turned out to be a bubble in house prices. Households purchased real estate as a hedge against high inflation. With very low, and at times negative, real long-term interest rates, and full tax deductibility of nominal interest payments, mortgage borrowing was very attractive. In turn, the rapid increase in mortgages made liquid the large wealth gains from the house price boom, thereby stimulating household consumption.

18. In this setting, the global recession of 1980 hit the Netherlands relatively hard. Early signs of global trouble burst the bubble in the housing market. Real house prices declined steeply, beginning in late 1979, and by 1982 were 45 percent below their 1978 level. In nominal terms they dropped by 30 percent. The collapse of the housing market contributed to a fall in consumption in 1981–82. By 1982, the economy was in a state of crisis, with GDP decreasing for the second year in succession. An improvement in the external environment, and the real wage decline resulting from the 1982 wage agreement set the stage for a recovery.

19. The cycle of the late 1980s and early 1990s was strongly influenced by German unification. At first, the positive demand effect, which came as the previous economic upturn was wearing off, seemed like a timely stroke of good fortune. However, inflationary pressures emerged, especially in Germany, prompting the Bundesbank to raise interest rates sharply. Higher real interest rates and exchange rate appreciation led to a decline in investment growth in 1991. While monetary tightening was surely appropriate for the Dutch economy, which was broadly in sync with its largest trading partner, this episode underscores the importance of the timing of monetary policy adjustments in a (de facto or formal) monetary union. Subsequently, the downturn was deepened by declining consumer confidence, fiscal contraction (see below), and accelerating wages and prices—which had responded with a lag to the previous cyclical peak. Indeed, while the external shock triggered a slowdown before the emerging domestic overheating would have done so through wage increases, these increases now contributed to an overly severe correction.

20. Nevertheless, the Netherlands suffered less than other European economies from the recessions of 1992–93 and 1995, as further trend improvement in economic performance took hold, in large part due to fiscal consolidation and sustained labor market reforms. The economic recovery in the Netherlands gained momentum in 1994, and is continuing into 2000. Only in 1995 was GDP growth below 3 percent, due to a sharp deceleration in export growth.

From 1993 to 1999, consumption was supported by substantial employment growth, as well as by a gradual decrease in the household savings ratio caused by wealth effects. Indeed, house prices more than doubled during the 1990s—compared with a rise in real disposable household income of about 20 percent—as interest rates fell, and banks returned to aggressive marketing of mortgage loans while easing lending conditions. The Dutch authorities estimate that wealth effects have added about  $\frac{3}{4}$  of one percent to annual private consumption growth on average over the past four years.

### **Adjustment mechanisms**

21. Adjustment to changing demand pressures consists of policy adjustments and price and factor movements that reallocate production and demand between traded and nontraded sectors. Countercyclical fiscal and monetary policies are prime examples of the former. Inflation or a nominal appreciation induced by increasing demand can, in principle, perform both functions, by promoting a shift in resources to the production of nontraded goods and services while also shifting demand away from these products to those that can be imported. However, in the short run, the effect of wage or asset price increases on consumption can amplify the initial demand pressure, thus potentially destabilizing the adjustment process.

22. In the 1970s, the authorities attempted—although reluctantly and to a limited extent—to alleviate competitiveness through a series of small devaluations. However, these devaluations were rapidly incorporated into further wage increases, having no lasting impact on competitiveness and merely resulting in higher inflation. Consequently, the exchange rate instrument was abandoned in the early 1980s, and since 1983 there has been a de facto monetary union with Germany. (The Netherlands joined the European Economic and Monetary Union (EMU) in January 1999.) Overall, given the high degree of cyclical synchronization, German monetary policy was also broadly appropriate for the Netherlands—but in 1997 monetary conditions began to become too expansionary given the increasingly advanced cyclical position of the Netherlands.

23. In principle, fiscal policy can be used to manage demand. However, the practice, during 1980–94, of targeting the actual fiscal deficit, rather than a cyclically adjusted measure, did not allow for automatic, let alone additional discretionary, fiscal stabilization. On the contrary, fiscal policy was often procyclical; this was especially the case during 1978–83, when the sharp increase in the structural deficit in 1978–80 was reversed once the recession had set in. Similarly, during the 1987–93 cycle, the budget imparted positive impulses in 1989 and 1990, followed by a severe withdrawal as the structural primary deficit improved by some 4 percentage points between 1990 and 1994.

24. Since 1994, the approach to fiscal policy has been less procyclical. Fiscal policy has been conducted in a rules-based framework in which real expenditure growth is determined at the start of a government period. Revenue, however, was allowed to vary with economic activity, yielding some automatic stabilization. Still, the phasing of tax cuts interfered with the operation of stabilizers. For example, tax cuts increased the structural deficit in 1998 while

growth was already high and output arguably above potential. The present arrangement (for 1999–2002) limits automatic stabilization through rules for allocating revenue windfalls. Part of the anticipated revenue overruns or shortfalls relative to a preestablished baseline path is translated into higher or lower tax cuts in a next budget, weakening the automatic stabilizers.

25. To the extent that demand pressure is not offset through fiscal stabilization, labor markets can provide an alternative adjustment channel. In response to demand conditions, wages and unit labor costs, and thus external competitiveness, will respond to slack and tightness in the labor market. The effectiveness of this channel depends on how smooth labor markets function over the cycle, both domestically as well as in partner countries. By contrast, poorly functioning labor markets, such as prevailed in the Netherlands in the late 1970s, tend to complicate rather than facilitate adjustment.

26. While the orchestrated wage moderation since 1982 was key in redressing structural problems in the labor market, it also appears to have muted the initial responsiveness of wages to cyclical disturbances. The authorities promoted wage moderation by offering cuts in taxes and social security contributions, allowing workers' disposable income to grow even in the absence of significant wage increases. In addition, unions adopted as one of their goals in wage bargaining, the stabilization of the labor-income share at a level that leaves sufficient room for profits and investment. This consensus-based wage control has been effective in improving the Dutch competitive position. Indeed, it even appears to have contributed to some overshooting on external competitiveness, in part because labor markets in key partner countries did not respond adequately to cyclical developments, especially in the early 1990s. However, by lengthening response lags, the consensus-based approach may well have fostered unwelcome episodes of delayed catch-up in wages, such as in response to the cyclical peak of 1990–91.<sup>9</sup> In the present setting, again, labor market tensions have so far been reflected in wage developments only to a limited extent, raising the prospect of an ill-timed delayed catch-up in wages in the future.

27. Like labor, houses and other physical assets are largely nontradable, with prices adjusting to demand and supply in the domestic economy. As the returns on fixed assets are linked to national economic growth and production costs, diverging price changes of these assets (i.e., real estate and stock prices) across countries reflect these factors, eliminating differences in the rates of return. In principle, these price increases could be part of the adjustment process, by pulling resources into construction, and by promoting the establishment and expansion of enterprises. However, in practice, these responses may be subject to considerable time lags, and asset price gains may induce in the first instance additional wealth effects that could exacerbate demand pressures.

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<sup>9</sup> In response to demands for higher wages the government threatened to prohibit any raise in contractual wages in 1994, but a voluntary wage agreement by social partners rendered this measure superfluous.

## B. Central Forecast

28. According to the spring 2000 projections of the CPB, Oxford Economic Forecasting (OEF), and the Fund staff (WEO) the short-run outlook is driven by buoyant domestic as well as foreign demand in 2000 and 2001 (Table 3).<sup>10</sup> High demand growth would be accommodated by strong import growth as well as by a further expansion of domestic production. The increase in total factor productivity is expected to be well above trend, while the capital stock has been increasing more rapidly than usual as the result of buoyant investment during the past five years. In the short term, unemployment is expected to decline even further. Finally, a continued increase in labor participation is likely, in part through expanded working hours. Indeed, the trend decline since the early 1970s in the number of hours worked per worker came to a halt in the mid-1990s, and there is ample scope for a reversal.

29. However, stretching capacity limits would only temporarily provide extra room and in view of the increasing output gap, a slowdown seems inevitable over the medium term. CPB projections do not go beyond 2001. In the WEO and OEF forecasts, below-trend growth starts in 2002 and 2003, respectively. Adjustment would arise from a stabilization of household savings, as well as a gradual increase in unit labor costs. The former would be associated with the stabilization of house prices, bringing the sizable wealth effects of recent years to an end, while the latter would dampen export growth.

Table 3. Netherlands: Baseline Projections of CPB, OEF, and WEO, 2000-02  
(Growth rates, in percent)

	1999	CPB		OEF			WEO		
		2000	2001	2000	2001	2002	2000	2001	2002
GDP	3.6	4	3½	3.6	3.2	2.9	3.8	3.4	2.5
Domestic demand	3.8	3¾	3¾	3.7	2.8	2.7	3.6	3.7	3.0
Exports 1/	4.7	8¾	7¾	7.0	6.0	6.1	7.4	7.1	5.9
Imports 1/	5.1	8¾	8¾	7.1	5.7	6.2	7.6	7.9	6.9
Current account 2/	5.2	5½	5½	4.5	4.5	4.4	5.9	6.2	5.5
CPI	2.0	2¼	3¼	2.1	2.2	2.2	2.3	3.5	2.2
Unit labor cost	1.7	¾	½	1.5	1.2	1.5	1.2	1.5	1.6

Sources: CPB, *Centraal Economisch Plan 2000*, Oxford Economic Forecasting, and IMF, *World Economic Outlook*.

1/ Goods and nonfactor services.

2/ WEO figures are based on central bank external account data. According to the CPB, the 1999 current account surplus amounted to 4.5 percent of GDP.

<sup>10</sup> The latest published central bank projections date from December 1999. In line with other forecasts at the time, it includes growth of 3.0 percent in 2000 and 3.2 percent in 2001.

### C. Demand Shocks

30. The central forecast is subject to three obvious upside demand risks: higher-than-projected foreign demand, a housing price bubble, and stronger-than-expected wage growth. Downside risks are equally possible, e.g., through an immediate deflation of house prices or weaker trading partner activity, but since their occurrence is likely to reduce demand pressures and therefore to cause few difficulties for the economy, they are not further analyzed here. The consequences of upside risks are explored using the Oxford Economic Forecasting (OEF) model and simulations prepared by CPB and central bank staff.<sup>11</sup>

31. As with all simulations, results need to be interpreted with caution, keeping in mind the empirical foundations of the models. Earlier episodes of high demand occurred in a different institutional environment and the current tightness of labor markets is unprecedented. Extrapolating past relationships may not yield an adequate assessment in the current environment. In particular, the effect of unemployment on wages is hard to predict. The consensus-based wage negotiation process favors continued wage moderation, but this process, initiated in the early 1980s, has not been tested with very low unemployment levels. There is, for example, a risk of increasing wage drift undermining the relevance of sectoral wage agreements and eventually triggering an abrupt catch-up in negotiated wages. The effect of recent interest rate increases by the ECB on house prices and, subsequently on wealth effects in consumption, is also particularly uncertain.

32. **Higher foreign demand** would boost GDP growth in the short-run by  $\frac{1}{2}$  to 1 percentage points after two years, depending on the model, and will add  $\frac{1}{2}$  of one percentage point to  $1\frac{1}{4}$  percentage points to consumer price inflation (Table 4). There appears to be a clear tendency for simulated inflation and unit labor costs to accelerate. The current account surplus rises (though loss of competitiveness mitigates the magnitude of the increase), and, over the medium-term this is the key channel through which the economy returns to equilibrium. However, until it does so, inflation remains higher than in the baseline.

33. Modeling an asset price bubble was possible only in the OEF model, and its results must be treated with caution since the asset price cycle was imposed directly through the design of the price shock and is not an endogenous reaction of the model itself. After a 24 percent house price expansion during 1998 and 1999, a further rise in asset prices (including shares) by 30 percent is assumed during 2000 and 2001, followed by a similar

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<sup>11</sup> In each of the three models, short-run responses are driven by demand impulses, with wages and prices responding to the gap between demand and supply. In the OEF model, output cycles around a given trend with a rapid feedback, within 3–5 years. By contrast, in the central bank model, the medium-term path is not anchored by well-determined capacity constraints; while demand shocks eventually die out, they can have a significant lasting effect on the level of output. This feature makes the model less suitable for longer-run simulations. See van Els and Vlaar (1996).

Table 4. Netherlands: Sensitivity Analysis for Changes in Demand  
(Deviations from growth rates in the baseline, in percent, not cumulative)

	Central bank			CPB		OEF			
	2000	2001	2002	2000	2001	2000	2001	2002	2003
<b>Higher foreign demand 1/</b>									
Impact on:									
GDP	0.7	0.9	0.2	0.3	0.5	0.3	0.5	-0.2	-0.3
Investment 2/	1.1	2.3	1.4	0.3	0.7	0.3	0.4	-0.2	-0.1
Exports 3/	1.6	1.6	0.0	1.0	1.5	1.0	1.4	-0.2	-0.3
Imports 3/	1.3	1.9	0.6			0.7	1.0	-0.2	0.0
Current account 4/	0.2	0.2	-0.1	0.1	0.3	0.2	0.5	0.7	0.7
CPI	0.1	0.7	1.2	0.2	0.5	0.0	0.2	0.6	0.6
Unit labor cost	-0.4	0.8	2.5	-0.2	0.2	-0.1	0.1	0.8	0.8
<b>A 30 percent increase in private wealth during 2000-01, followed by a return to the baseline</b>									
Impact on:									
GDP						0.4	-1.1	-0.2	-1.7
Private consumption						0.5	1.4	0.2	-1.1
Investment						1.1	2.8	-0.4	-3.1
Current account 4/						-0.2	-0.6	-0.4	-0.1
CPI						0.0	0.3	1.0	1.2
Unit labor costs						-0.2	0.0	1.7	1.7
<b>A 1 percentage point higher contractual wage increase in 2001</b>									
Impact on:				2005				2004	
				5/				5/	
GDP				0.1	-0.1	-0.1	-0.1	-0.3	
Private consumption				0.3	0.4	0.1	0.1	0.2	
Exports 3/				-0.1	-1.0	-0.3	-0.2	-0.5	
Imports 3/				0.0	-0.5	-0.1	0.1	-0.1	
Current account 4/						0.0	-0.1	-0.1	
CPI				0.2	0.4	0.8	0.3	1.0	
Unit labor costs						1.0	0.1	1.1	

Sources: CPB, *Centraal Economisch Plan 2000*, Data provided by the authorities, and Fund staff calculations.  
 1/ For the central bank simulation: an additional increase in exports by 1 percent of GDP in both 2000 and 2001. For the CPB: 1 percentage point stronger US production growth in both 2000 and 2001. For the OEF: an ex ante additional increase in exports by 1.0 percentage point in 2000 and 1.5 percentage points in 2001.  
 2/ In central bank simulations: gross fixed capital formation. In CPB simulations: private investment of firms.  
 3/ Goods and nonfactor services.  
 4/ In percent of GDP; difference with the baseline level. In central bank simulations: trade balance for goods and nonfactor services.  
 5/ Cumulative change.

decline in the next two years. The simulation shows that these shocks would trigger a sizable response in both consumption (through the induced wealth effect) and investment (through an accelerator effect based on the initial demand impulse). As in the previous demand shock, inflation continues to rise above the baseline until the path of GDP returns to the baseline.

34. In the long term, a lasting 1 percent increase in wages would reduce GDP by 0.1-0.3 percentage points, and raise the price level by 0.4-1 percentage points, depending on the model. Higher domestic demand would be eventually more than offset by loss of competitiveness and exports through rising unit labor costs relative to trading partners. The initial response depends on the speed of pass-through of wages into prices. At lower speeds (as in the CPB model), domestic demand is boosted more, thus creating higher demand pressures. In the long-run, the extent of pass-through determines whether domestic demand remains higher, and thus mitigates some of the adverse effect of declining exports on GDP (as in the CPB model).

#### IV. EFFECT OF CHANGES IN POLICY SETTINGS

35. The prospect that demand pressures might intensify raises the issue of how to contain the associated risks. Tightening monetary conditions or contractionary fiscal policy could help offset these pressure. Simulations show that the Dutch economy is relatively sensitive to changes in the exchange rate and interest rates, but that the effectiveness of fiscal policy is limited.

36. With respect to **monetary developments**, conditions in the Netherlands are at present largely determined by the euro exchange rate and euro interest rates, which are, of course, not determined nationally. Between end-1998 and end-March 2000, the euro depreciated by 17 percent in real terms, while short-term interest rates have risen by 125 basis points between October 1999 and April 2000.

37. A nominal depreciation of the euro would have a significant and swift positive effect on growth and inflation, according to the models (Table 5).<sup>12</sup> However, as was the case for a change in foreign demand, the effect depends on the size of trade elasticities and the accelerator effect on investment.<sup>13</sup> The initial effect would also include higher import prices (with a short-run pass through effect of about 40 percent), reflected in a higher consumer prices. Initially, unit labor costs fall, but this is mostly because productivity is being stretched. Eventually, however, inflation contributes to rising relative unit labor costs, which worsens competitiveness and reduces exports.

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<sup>12</sup> Simulations with the models used here do not permit a derivation of the implicit weights of a monetary conditions index for the Netherlands. Specification of shocks to the exchange rate and interest rates in real terms is not feasible, and the exchange rate shock had to be modeled as a euro-area wide shock.

<sup>13</sup> A remarkable feature of the OEF simulation is the drawn-out negative effect of a euro depreciation on the Dutch current account—compared to a regular, short-lived J-curve in the central bank's exercise. For the euro area as a whole, however, the OEF model also generates a regular J-curve.

Table 5. Netherlands: Sensitivity Analysis for Changes in Monetary Variables  
(Deviations from growth rates in the baseline, in percent, not cumulative)

	Central bank			CPB		OEF			
	2000	2001	2002	2000	2001	2000	2001	2002	2003
<b>10 percent depreciation of the euro-dollar rate 1/</b>									
Impact on:									
GDP	0.7	0.1	0.1			0.2	0.1	0.1	-0.3
Investment 2/	0.9	0.5	0.0			0.2	-0.4	0.3	-0.3
Exports 3/	1.7	-0.1	-0.3			0.3	0.1	0.4	-0.6
Imports 3/	1.3	-0.1	-0.3			0.0	-0.4	0.4	-0.5
Current account 4/	-0.1	0.1	0.2			-0.4	-0.3	-0.6	-0.2
CPI	0.5	0.9	1.0			0.1	0.6	0.9	1.2
Unit labor cost	-0.3	1.4	1.7			-0.1	0.4	0.7	1.2
<b>1 percentage point higher euro-area interest rates 5/</b>									
Impact on:									
GDP						-0.4	-0.8	-0.1	0.1
Investment 2/						-0.7	-0.4	-1.0	-0.2
Current account 4/						0.2	0.1	0.1	0.1
CPI						-0.0	-0.4	-1.0	-1.5
Unit labor costs						0.2	-0.2	1.1	-1.5
<b>1 percentage point higher world interest rates 5/</b>									
Impact on:									
GDP	-0.5	-1.0	-0.7	-0.5	-1.2	-0.4	-1.4	-0.6	-0.1
Investment 2/	-1.4	-3.5	-2.1	-0.7	-2.4	-0.7	-2.1	-0.8	-0.4
Current account 4/	0.2	0.6	1.0	-0.1	-0.3	0.1	0.1	-0.3	-0.5
CPI	0.0	-0.2	-0.8	-0.2	-0.6	0.0	-0.4	-1.4	-2.3
Unit labor costs	0.4	0.1	-1.2	0.4	0.5	0.2	0.1	-1.5	-2.4

Sources: CPB, *Centraal Economisch Plan 2000*, Data provided by the authorities, and Fund staff calculations.

1/ Including the (upward) repercussion on euro-area interest rates.

2/ In central bank simulations: gross fixed capital formation. In CPB simulations: private investment of firms.

3/ Goods and nonfactor services.

4/ In percent of GDP; difference with the baseline level. In central bank simulations: trade balance for goods and nonfactor services.

5/ Both short- and long-term interest rates.



38. All simulations indicate that a permanent increase in interest rates would be effective in slowing the Dutch economy. In the second year following a 1 percentage point increase in worldwide short- and long-term nominal interest rates, GDP would be more than 1½ percent below the baseline. The main channels would be the negative effects on investments and, more importantly, exports. If interest rates were raised in the euro area only, the implied decline in partner country demand and, hence, in exports and GDP would be smaller but still sizable. The models do not include a strong interest rate effect on private consumption, as they do not capture the importance of higher interest rates in stemming the house price increase and the associated wealth effects.

39. Simulations of fiscal policy measures indicate that the effectiveness of a tax increase in stemming demand pressure is limited by an offsetting private sector response and leakage through imports (Table 6). With an import share in GDP of almost 60 percent, the latter effect is especially strong, and after two years only half of the tax increase shows up in reduced GDP growth. Models differ, though, regarding the degree of offset on the side of consumers, and the associated reduction in savings, which compensates for part of the decrease in disposable income.

40. An ex ante contraction of government expenditure has a stronger immediate effect on the economy than a revenue measure of equal initial budgetary cost. A one percentage point of GDP ex-ante cut in expenditure reduces GDP growth in the first year by 0.6-1 percentage points, depending on the model. After two years, though, the response is virtually the same in both models, about 0.6 of 1 percentage point. (The longer-run impact of an expenditure cut is expected to be even more limited, as the economy moves back to its trend output path.) The initial downturn reduces inflation, wage growth, and unit labor costs, which boosts exports with a lag.

41. From this examination of the consequences of fiscal measures, it is clear that budgetary restraint could have a more than negligible effect on aggregate demand. However, with a short-run fiscal multiplier of about ½ and a positive output gap that is expected to rise to more than 3 percent of GDP, a very large ex ante adjustment would be required to fully eliminate demand pressures. Such adjustment would not be compatible with the kind of fiscal policy framework currently in place in the Netherlands, could disrupt an efficient allocation of resources, and—given lags in policy preparation and implementation—could unduly amplify an eventual downturn triggered by other forces.

Table 6. Sensitivity Analysis for Fiscal Policy Measures  
(Deviations from the baseline, in percent, not cumulative)

	Central bank			CPB		OEF			
	2000	2001	2002	2000	2001	2000	2001	2002	2003
<b>A 1 percent of GDP (ex ante) increase in tax revenue</b>									
Impact on:									
GDP				-0.4	-0.2	-0.3	-0.2	0.0	0.1
Private consumption				-1.1	-0.4	-0.5	-0.4	-0.2	-0.1
Investment 1/				-0.6	-1.4	-0.3	-0.2	0.0	0.0
Fiscal balance 2/						0.8	0.6	0.5	0.6
Current account 3/				0.3	0.5	0.1	0.2	0.2	0.2
CPI						0.0	-0.1	-0.2	-0.3
Unit labor costs						0.1	-0.1	-0.3	-0.4
<b>A 1 percent of GDP (ex ante) decrease in expenditure</b>									
Impact on:									
GDP	-0.6	0.0	0.0			-1.0	0.3	0.4	0.2
Investment 1/	-2.3	-0.5	0.1			-1.0	0.6	0.3	0.1
Fiscal balance 2/						0.4	0.3	0.6	0.8
Current account 3/	0.6	0.7	0.7			0.4	0.2	0.3	0.4
CPI	-0.1	-0.2	-0.4			-0.1	-0.6	-0.7	-0.6
Unit labor costs	0.4	-0.2	-0.9			0.4	-1.1	-0.8	-0.7

Sources: CPB, *Centraal Economisch Plan 2000*, Data provided by the authorities, and Fund staff calculations.

1/ In central bank simulations: gross fixed capital formation. In CPB simulations: private investment of firms.

2/ In percent of GDP; difference with the baseline level.

3/ In percent of GDP; difference with the baseline level. In central bank simulations: trade balance for goods and nonfactor services.

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