1 INTRODUCTION

The object of this paper is to establish a business cycle chronology for the Netherlands in the postwar period. The methods used here for dating Dutch cycles are those of the National Bureau of Economic Research. This is done for two reasons. One is that the National Bureau's methods embody many decades of research on cyclical phenomena; they are the result of many critical examinations of the various approaches to the problem of dating cycles. A second reason is that by applying the N.B.E.R methods one can make comparisons with the cycles established for other countries in which these methods have also been used. These other countries include Western Germany, 1950–1967 (Mintz [1969]), and 1950–1973 (Klein [1976]), Great-Britain, 1950–1973 (O'Dea [1975]), Japan (turning-points are published by the Economic Planning Agency), Canada, Australia, Italy and of course the United States (turning-points are published in any US text on business cycles, *e.g.* Dauten & Valentine [1974]).

It should be noted that true international comparisons can only be made if the same kind of variables underly the calculation of the business cycle turning-points. As will become clear later on, turning-points depend on the relative numbers of leading, coincident and lagging cycle indicators. For instance, a preponderance of leading indicators will shift turning-points backward, *etc.*

In establishing the Dutch chronology, industrial production has been used as a target variable. This implies that with respect to the business cycle turning-points industrial production should be a coincident variable. This is in conformity with the chronologies for other countries mentioned, where production aggregates (gross domestic product, gross national product, industrial production) are also coincident variables.

The organization of the remainder of this paper is as follows. In section 2 the
two principal methods for determining cyclical patterns in a context of economic growth are discussed. Section 3 deals with the selection of Dutch indicators used here for determining the business cycle chronology. Using the deviation cycle method specific cycles for the different indicators can be determined. This is done in section 4. The next step is to establish the Dutch reference cycle, using the diffusion index method (section 5). With respect to this reference cycle the individual indicators can be classified as leading, coincident or lagging. This classification is given in section 6. Finally a comparison is made in section 7 between Dutch business cycles and those for other western countries. Section 8 offers some concluding comments.

2 DEVIATION CYCLES AND STEP CYCLES

Gordon [1961, p. 249] defines business cycles as 'recurring alternations of expansion and contraction in aggregate economic activity, the alternating movements in each direction being self-reinforcing and pervading widely all parts of the economy.' A crucial point in this definition is whether or not one regards an absolute decline in the main economic activities as an essential feature of business cycles. Those who do use a classical business cycle concept such as was common in the prewar years. In this concept the expansion and contraction phase of the cycle indicate the movement of aggregate economic activity. Since World War II we have been getting used to fluctuations that were mere accelerations and retardations in economic growth, with only incidental absolute declines in aggregate economic activity.

This change of scope has given rise to a revised business cycle concept. It is now common to speak of growth cycles as opposed to classical business cycles. In this revised concept the expansion and contraction phase refer to the alternating periods of higher and lower growth rates (see Klein [1976, p. 12 ff.], Mintz [1972]).

Two methods are currently being used to separate these two periods (Mintz [1969]). One is to adjust the economic time series for their long-run trends. The detrended series are called deviation cycles. These can then be subjected to the same methods of analysis as the classical business cycles. The second method is to analyse cycles in (monthly, quarterly) growth rates. These step cycles, as they are called, exhibit absolute expansions and contractions and can be dealt with in the same fashion as classical business cycles. Note, however, that the turning-points of step cycles will be usually out of phase with those of growth cycles. In addition employing the step cycle method can be inappropriate as it tends to produce highly irregular cycles, unless the original series is very smooth.

Another caveat applies to both methods. If absolute declines in economic