Measuring cyclical turning point in international trade
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World industrial production and world imports show an upward trend along time. In statistical terms, they are not only integrated of order one but also co-integrated. We will rather focus here on the degree of cyclical link, i.e. the co-movement. Therefore, it is necessary first to extract the trend in order to compare the deviation to trend. Several types of filters are available to extract the trend. We will use the preferred Christiano-Fitzegerald filter.

Comparison between the world cycles of industrial production and imports

Deviation to trend (growth cycle)

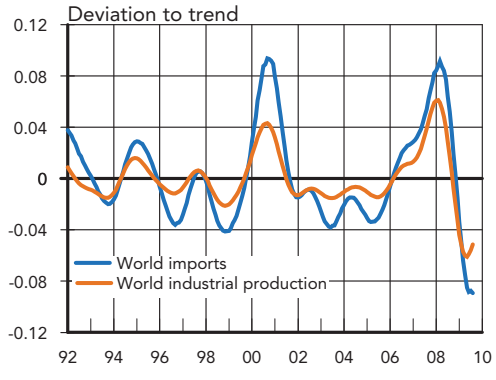
The growth cycle (deviation to trend) of world imports in volume is strongly correlated to the world growth cycle of industrial production. The graph below, covering the period January 1992 – August 2009, shows this strong correlation. World imports in volume terms are computed by Coe-Rexecode while the world production results from the aggregation of the 48 main countries' industrial production index except construction. The Christiano-Fitzgerald is used to remove the cycles between 18 and 96 months. The world imports growth cycle is more volatile: the mean absolute deviation to trend is 1.5% for industrial production, whereas it is 2.8% for world imports (standard deviation of 2% and 4.6% respectively). The stronger volatility of world imports is due to a mean elasticity of 1.8 of imports to industrial production, all countries included and over the twenty last years.

The cyclical turning points coincide more or less. For example, during the 2000-01 cycle, the downward phase of the production cycle started in August 2000, one month before world imports started to fall. Similarly, more recently, the downward trend in the world production cycle started in January 2008, two months before the downward reversal of world imports. As concerns the present cyclical rebound, it appears starting in May for the world industrial cycle and in July for world imports, i.e. two months afterwards. However, the filters end-of-point effects will probably modify this chronology in the future.

Comparison in levels (business cycle)

The direct observation of indexes in level (« business cycle ») is also feasible but in that case we are interested in the drops in level, less numerous obviously. In the present crisis, both cycles peaks are relatively close because of the intensity of the industrial crisis. The world industrial production reached its business cycle peak i April

Growth cycles of world industrial production and world imports



Source: Coe-Rexecode calculations © Coe-Rexecode

Comparative levels of world industrial production and world imports

Source: Coe-Rexecode calculations © Coe-Rexecode

2008, i.e. three months after a perceptible slowdown of the growth cycle. As for world imports, they reach formally a business cycle maximum in January 2008 but the irregular profile of the series makes the exact positioning of that peak difficult. In conformity with the March growth cycle peak estimated above, it seems that April is a month more admissible for dating the beginning of the effective drop of world imports (January and February were artificially high because of a mild winter).

More recently, the trough of the industrial production index (business cycle) has been reached in January 2009, i.e. four months before the growth cycle trough. The business cycle trough in world imports happened in May 2009, i.e. two months before the growth cycle trough.

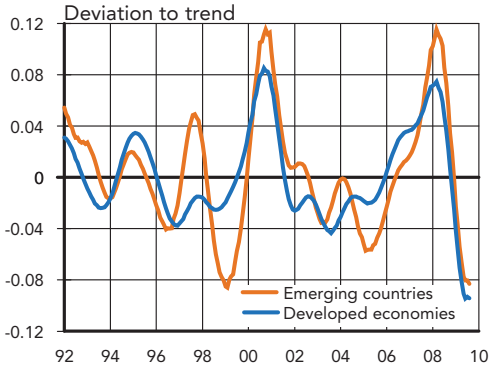
Cyclical contribution of industrialized and emerging countries

What are the contributions of industrialized and emerging countries in these cyclical turning points? We need to examine the degree of co-movement. There is a strong coincidence in the cyclical movements of both zones. However, the propagation between those zones is made with a variable intensity. For example, the Asian crisis created a cyclical wave of weak intensity in the OECD countries. The present crisis affected both zones and we cannot observe a decoupling contrary to the idea which was put forward by some analysts. We rather see a time delay in the downward reversal in level. Growth cycles have reached a peak simultaneously in March 2008 for imports of both zones. It was hard to detect it in real time because the emerging countries imports data were initially a bit overestimated and revised later. The drop in the OECD countries import levels took place as early as January 2008 (there again, a mild winter may have lead to overestimate January and February, so that March is admissible as the start of the downward phase). Conversely, in the emerging countries, imports showed resilience until October 2008 and started collapsing only in November.

In addition, the cyclical impact of the recent crisis on the emerging countries trade was less important than in the OECD countries: the trough of imports only goes back to the level of summer 2006 in the emerging countries, while in the case of OECD countries it goes back to that of the end of 2003. Also the collapse in the emerging countries has only lasted seven months, while in the OECD countries the downward movement has lasted a year and a half.

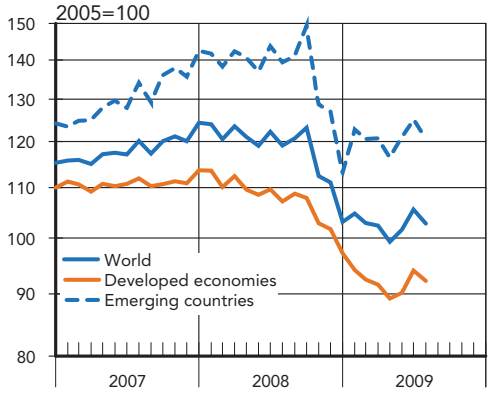
In the present rebound taking place at the beginning of 2009, we observe a trough in the emerging countries as early as January 2009 but January appears as an extreme point, so that the trough could rather be in May 2009. As for the OECD countries, the trough is clearly in May 2009. Therefore, the movements look more or less simultaneous.

Growth cycles of imports for emerging countries and developed economies



Source: Coe-Rexecode calculations © Coe-Rexecode

Import levels in volume terms



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