



4. From steel to GDP – synchrony of cycles



GDP and the Business cycle

GDP as an ultimate measure of society's wellbeing is a relatively new concept. First national accounts were compiled 1942 in USA in order to see the size of the economy in monetary terms, how it has developed and hopefully to be able to trace the effects of government's actions. It was to show the key components of demand and supply as well as utilisation rate of resources. It was not designed to be a business cycle indicator.

Today, GDP is an eagerly waited indicator on short term developments despite the shortcomings: it uses only quarterly data and has a lot of artificial parts of doubtful relevance. United Nations' *System of National Accounts* manual contains more than 700 pages.

European Central Bank chose *industrial production*, not GDP, as the business cycle indicator because 'the cycle indicator derived from industrial production is close to identical to the real GDP cycle.'

In US, *GDP Coincident indicator* has been in use for decades. Composed of industrial production and 3 other components, it gives an early insight on coming official GDP figure (p 7).

The question is, are the forces that cause oscillation in industry also present in the aggregate, GDP? Academic research has not been able to confirm. Maybe one reason is the anomaly in accounts: industry and construction make up only 1/4 of GDP on *production side*. Still consumers, the end-users of everything produced, spend 2/3 of their money on material things. What is the difference? See Chapter 8.



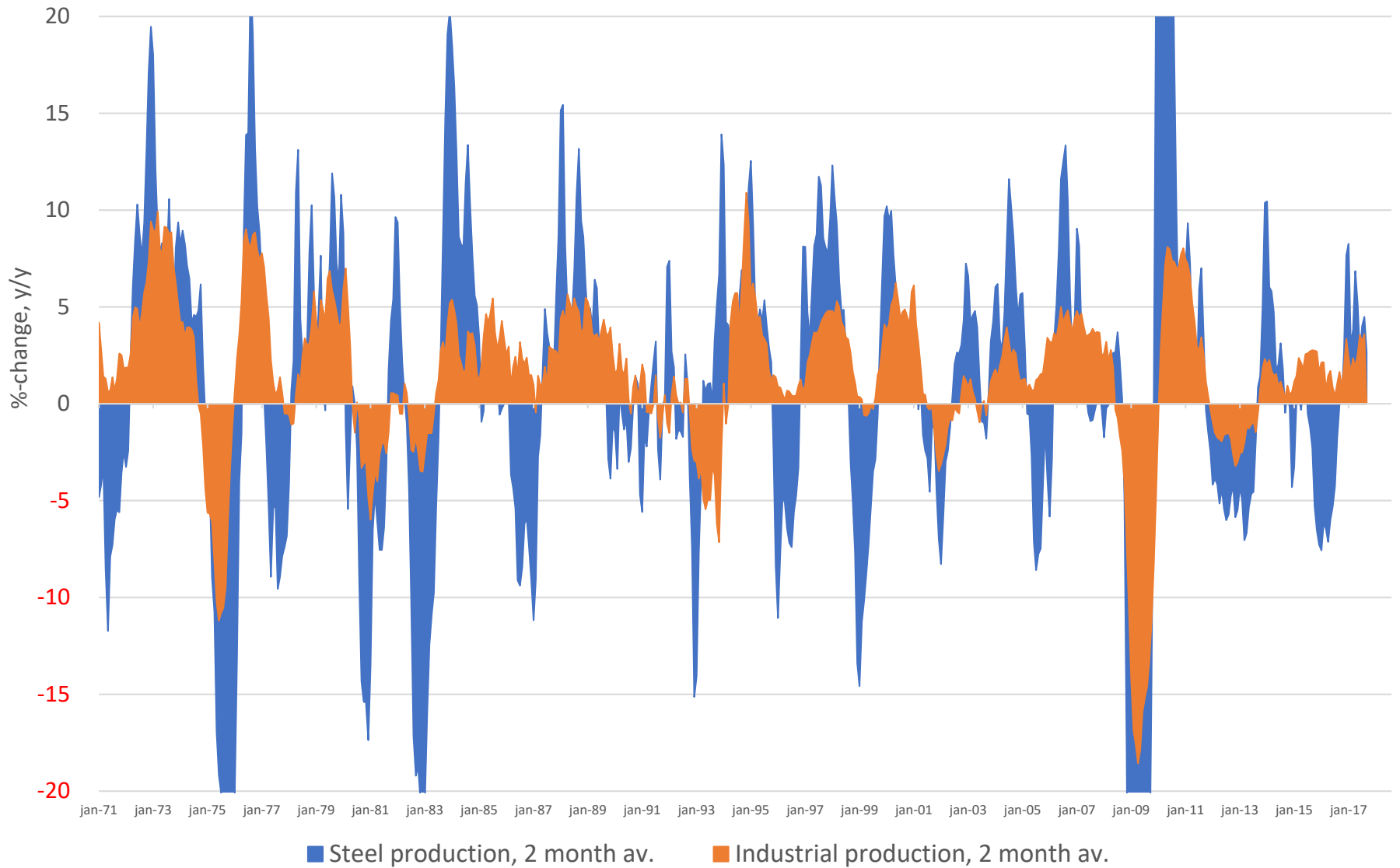
From Steel to GDP

- When monitoring economy's *cyclical* development, published quarterly GDP figure is a slowly moving, backward looking indicator with a lag of 2-4 months. Time is lost in complex compiling of the final figure and information is lost when months are compressed into a quarter.
- On steel and steel users, data is timely, nuanced and reveals a strong cyclical amplitude. Steel's variation in downturns is 5 times of GDP's, industry's 2-3 times of GDP's. There are steel's recessions where economy's growth only slowed – e.g. 1995-96 and 1998-99. This is due to steel's inventory/bullwhip cycle while non-cyclical components - notably public spending and core consumer spending - kept GDP growth positive. Further within steel, products with long supply chain have strongest amplitude and, due to the nature of bullwhip, reveal first the turns of the cycle.
- *Retail sales* is the message from the ultimate end-users, consumers. Although some key items are missing - cars in EU and housing everywhere - retail sales is the most important *timely* indicator of final demand. A phenomenon resembling inventory/bullwhip cycle is also present on this level (last chart).
- In spite of dissimilar looking graphs, correlations are relatively high in the following data. This is a proof of close functional relationship in mathematical sense: while amplitudes differ, *movements* are synchronous.

EU Steel production vs Industrial production/Sep-17

Correlation 0.73, steel leads 1 month

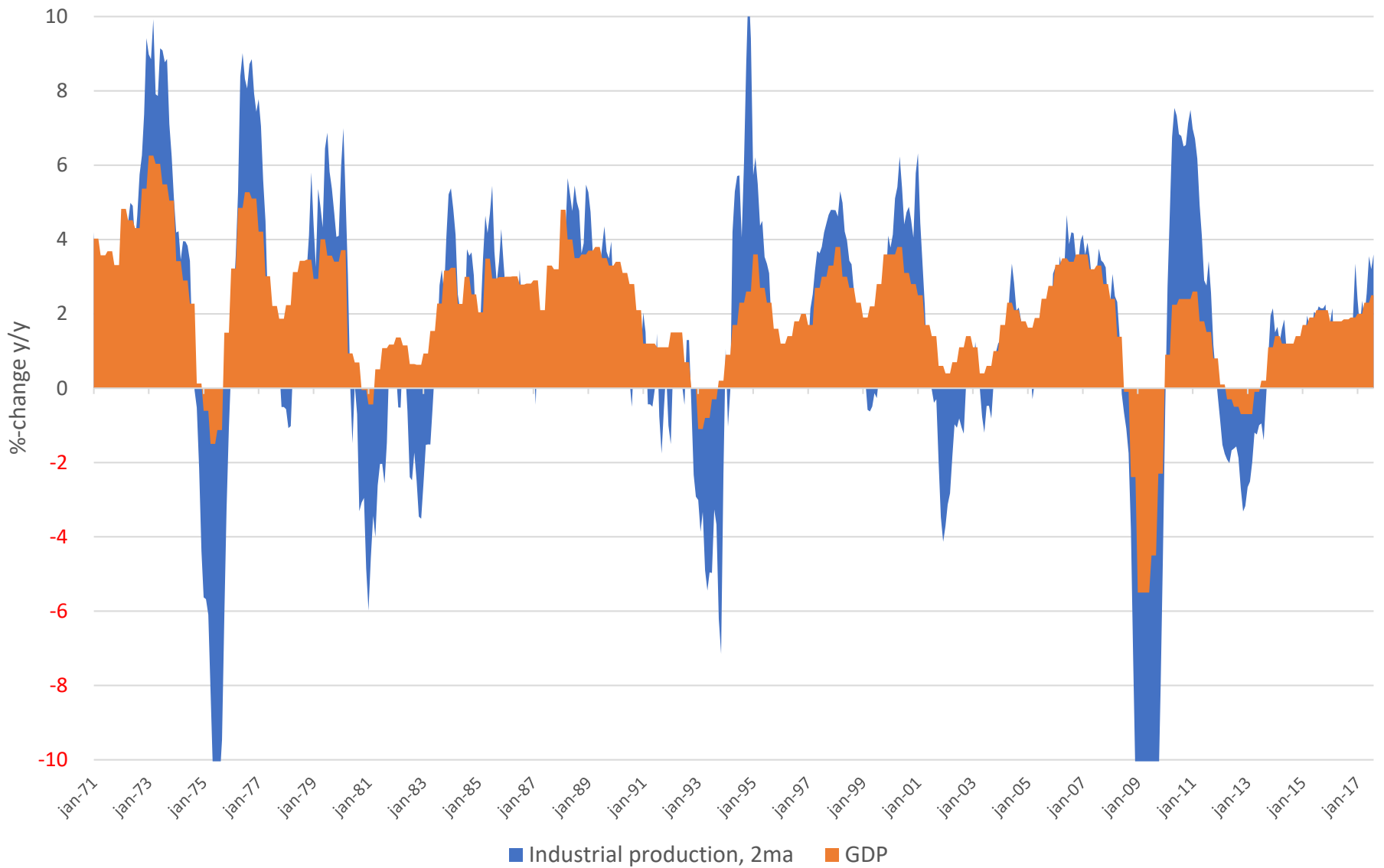
Source: Eurostat, WSA



EU Industrial production vs GDP

Correlation 0.89, coinciding

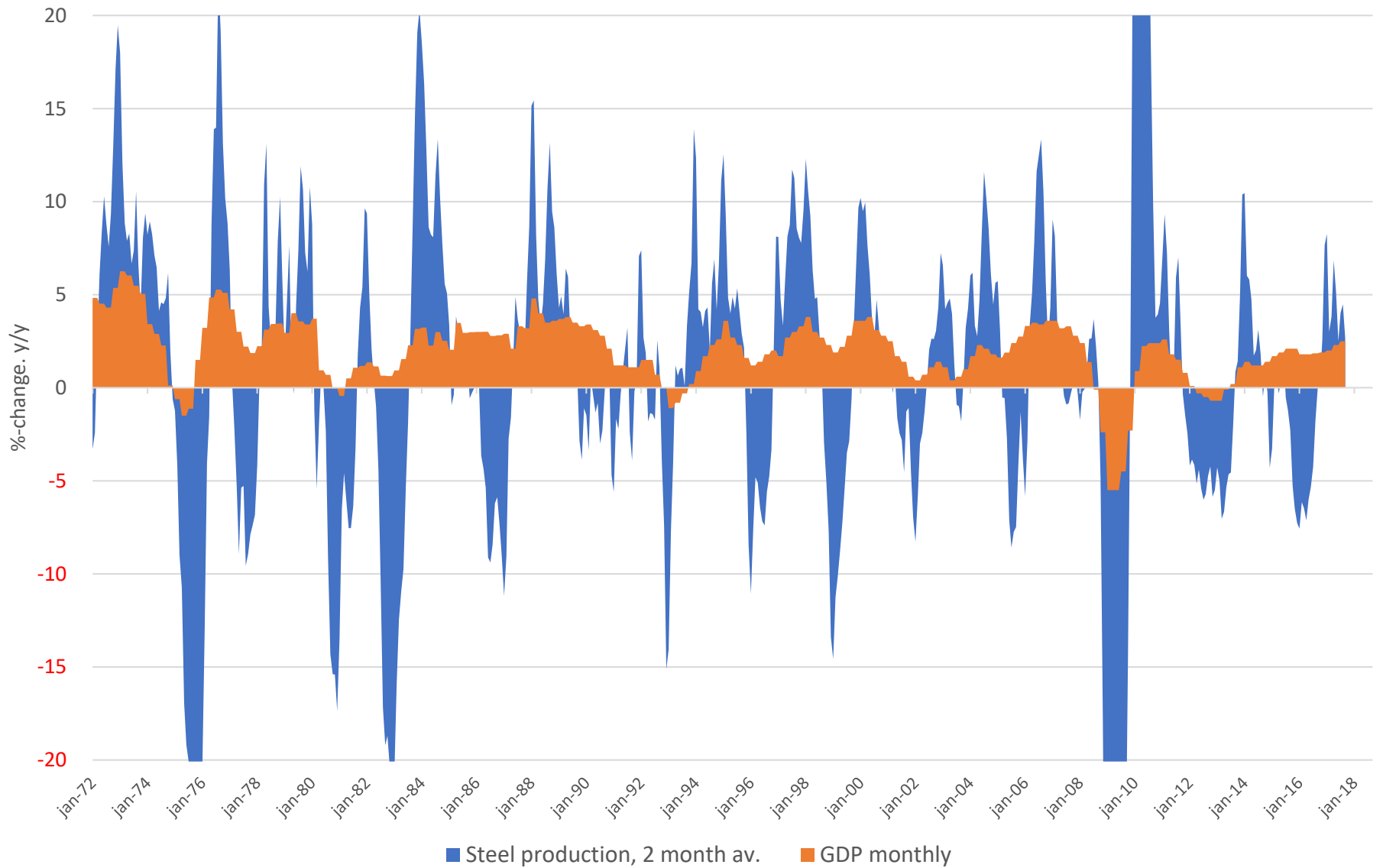
Source: OECD, Eurostat



EU Steel production vs GDP

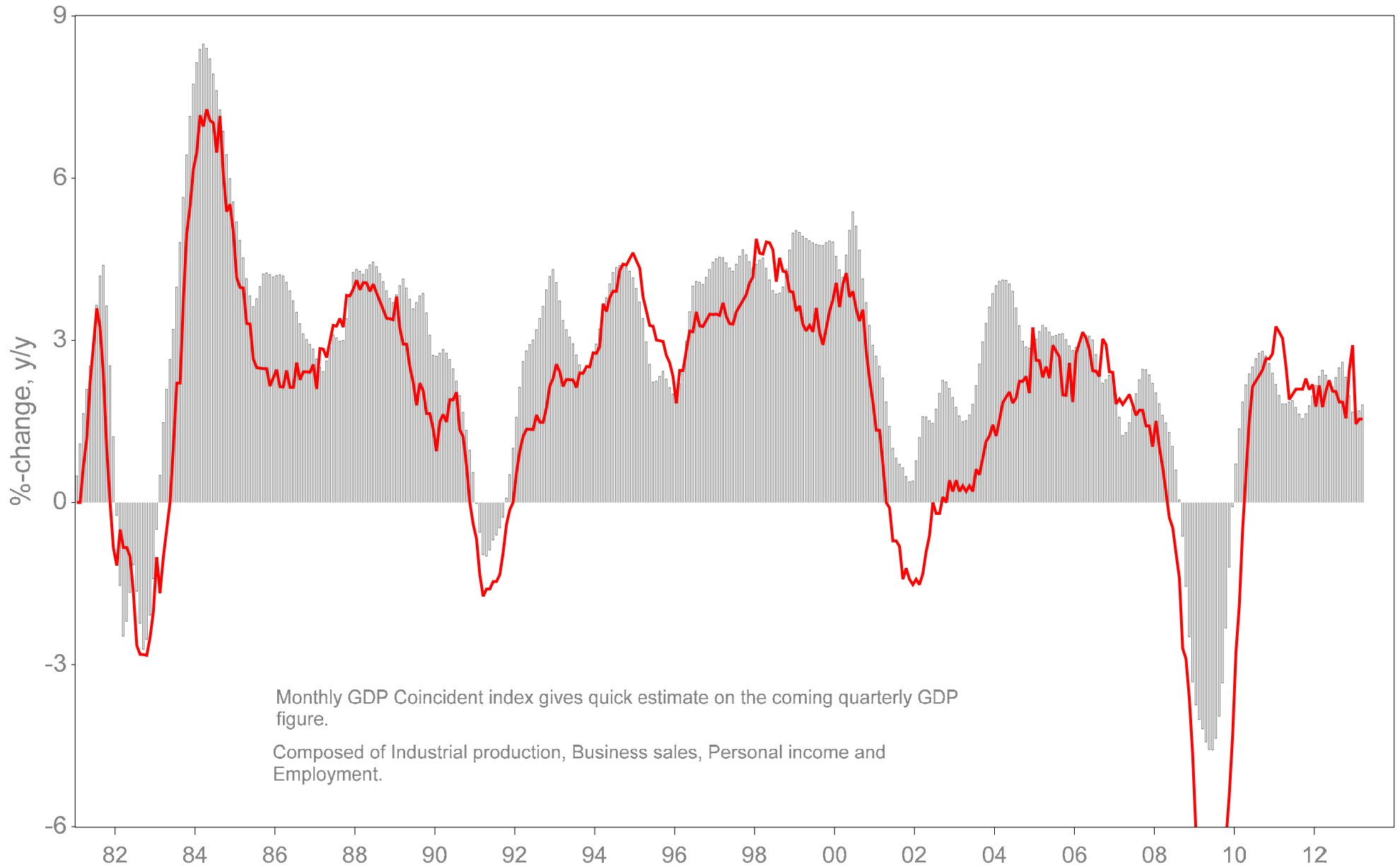
Correlation 0.60, steel leads 1 month

Source: WSA, Eurostat, OECD



US GDP Coincident index vs GDP monthly

Correlation 0.92. Coincide.

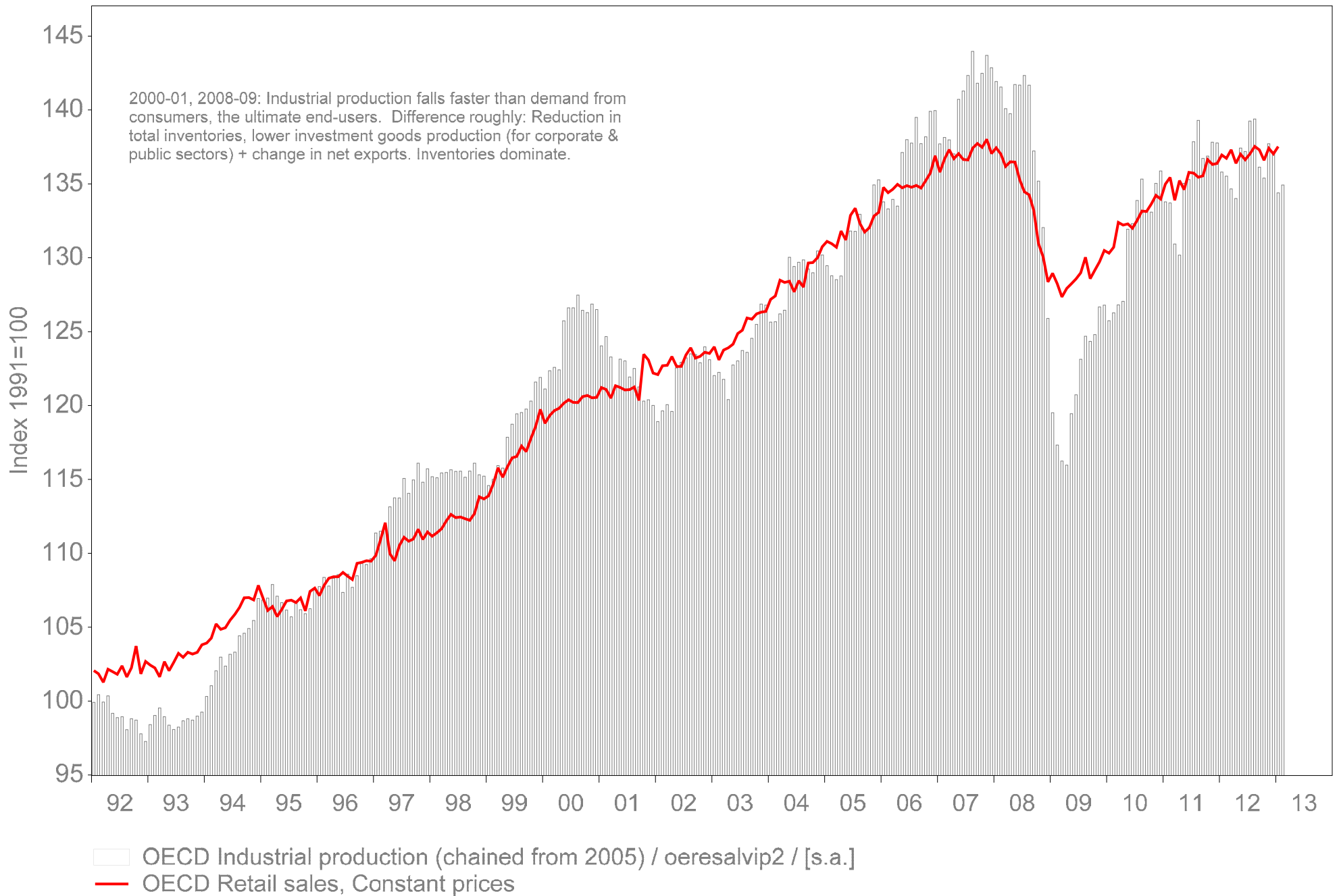


- US Gross Domestic Product (monthly values derived from quarterly) [c.o.p 12 obs]
- US GDP Coincident index / uscoindvgdp / [c.o.p 12 obs]

Source: Reuters EcoWin

OECD Industrial production and Retail sales

Retail sales (= Industry's orders) leads 1 month.



Source: Reuters EcoWin+Own est.