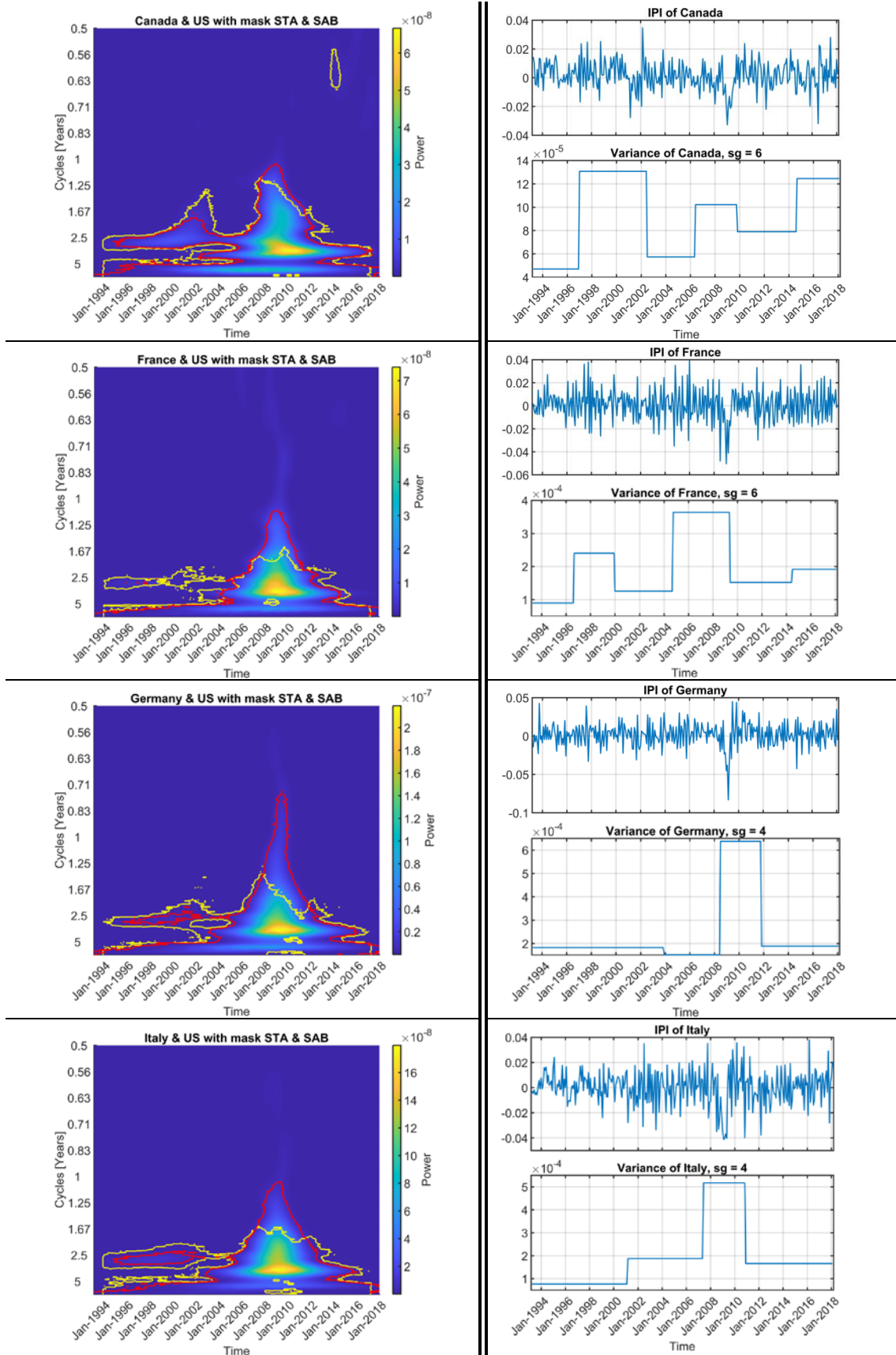


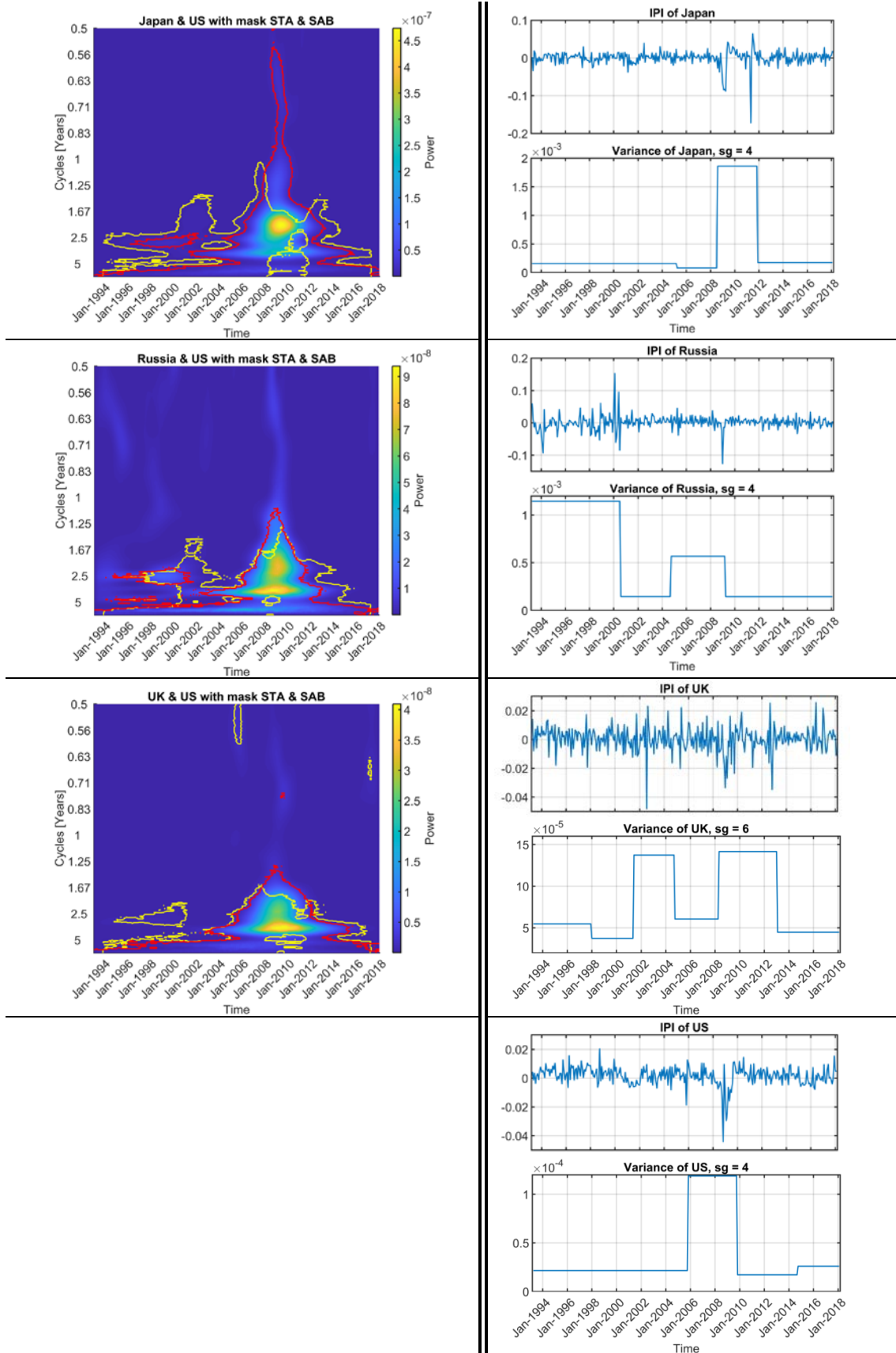






countries we can state that the 2008 crisis was the most important structural break during the analyzed time.





**Fig. 1.** Co-movement between countries, IPI of each country and variance of their segments.

## 4 Conclusion

Using real data we assess the co-movements between the US and G8 countries with regard to the impact of the structural change of the financial crisis in 2008. The financial crisis caused a structural break in many economics, which led to the change in volatility level in the economic indicators. We found at least three levels of volatility during the given time range in all analysed time series. Therefore, in the consequent co-movement analysis via PWCS we propose the SAB testing which takes into account the local volatility of the time series. We set the optimum number of segments for co-moved time series and identify significant co-movement areas.

The results confirm the globalisation of the economies and the impact of the 2008 financial crisis on the world economy. In some countries we reveal additional co-movement areas (France, the UK) or the extension of co-movement areas into a longer time period or into an additional cycle length (Japan, Russia). In other countries (Germany, Japan and Italy) we also find that the co-movement in the 2008 crisis was only in the business cycle frequencies, i.e. between the cycles of the length of 1.5–5 years.

The most energy of the PWCS, i.e. the most important co-movement between US and G8 countries, was identified in the business cycle frequencies. The achieved results can be used for further analyses to look for interconnections between countries co-movement and bilateral trade, in order to reveal additional information about the globalisation and interconnections of economies.

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