

OPINION PIECE

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A simple measure of economic resilience

How should we measure economic resilience? This question is of considerable importance, given that strengthening economic resilience is now a policy priority of many governments. We can only strengthen economic resilience if we understand the determinants of economic resilience; and we can only understand the determinants of economic resilience if we know how to measure it.

Hereafter I will discuss one simple measure of economic resilience, based on the ongoing research in Le Moigne, Ossa and Ritel (2021). It builds on the idea of capturing resilience as the cumulative deviation from a trend, which is

already present in the literature (e.g. Ringwood, Watson and Lewin, 2018). I illustrate this with reference to international trade flows, but it can really be applied to any variable of interest.

Any proper measurement of resilience has to start with a clear definition of resilience, and I will adopt a relatively narrow one: the ability to cope with and recover from shocks (but not the ability to prepare for them).

My starting point is the idea of measuring resilience as the cumulative deviation from a trend, as illustrated by the green area in Figure B.26. The smaller the green area, the higher is the resilience,

because it implies a smaller cumulative deviation.

The main advantage of this idea is that it intuitively combines information on the depth and duration of the disruption, essentially trying to calculate the cumulative loss in international trade due to the shock.

In Le Moigne, Ossa and Ritel (2021), we highlight three problems with this idea. First, it conflates the magnitude of the shock with the resilience to the shock. Second, it does not take into account that shocks often have permanent components; for example, the COVID-19 pandemic is likely to bring about permanent changes in the way we work.

Figure B.26: The original resilience measure only considers the pre-shock trend

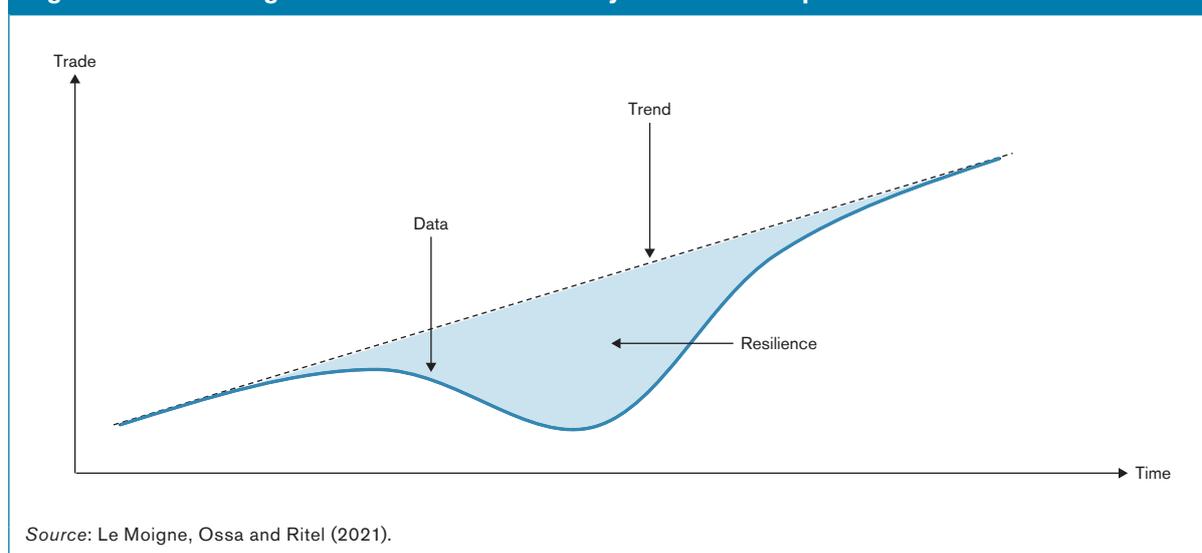
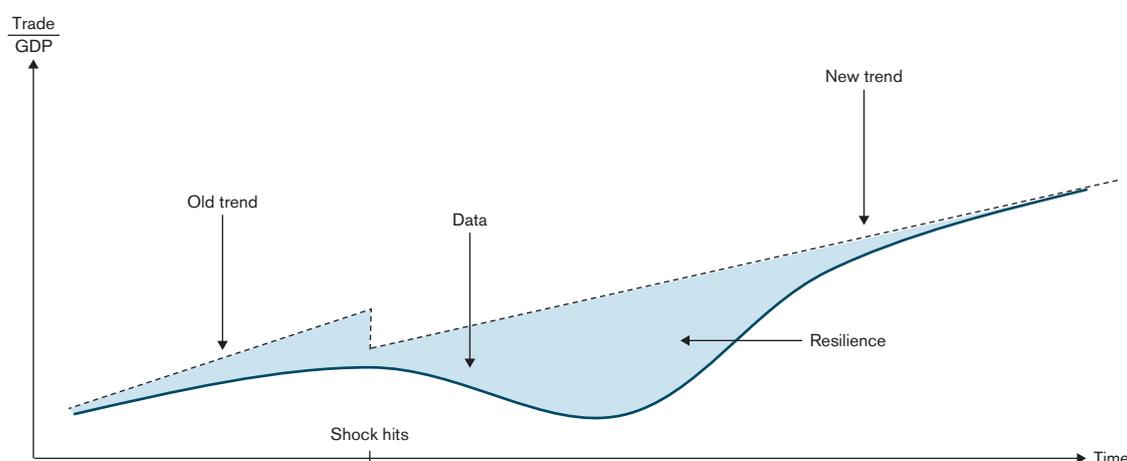


Figure B.27: The resilience measure can be adjusted to account for the post-shock trend

Source: Le Moigne, Ossa and Ritel (2021).

And third, it relies on strong assumptions that trade would have behaved as predicted by the trend had it not been for the shock, and that the deviation from the trend is solely due to the shock.

The first two problems can be addressed straightforwardly, as illustrated in Figure B.27. To isolate resilience, one simple option is to express the series relative to the shock. For example, when investigating the resilience

of international trade to a major recession, it would make sense to look at the trade-to-GDP ratio instead of just at trade. To accommodate persistence, one simple option is to allow for the convergence to a new trend.

The third problem, however, cannot be addressed without a model, which allows us to estimate the shocks driving the disruption and simulate more reliable versions of the “trend” and “data” lines in

Figure B.27. In Le Moigne, Ossa and Ritel (2021), we therefore use a fully specified dynamic general equilibrium model, which allows us to link the behaviour of international trade to a number of underlying shocks, including shocks to the supply of traded goods, the demand for traded goods, and trade costs. The natural alternative is to apply a reduced form statistical model from the toolbox of time-series econometrics.

in relation to global gross domestic product, and the damage to critical infrastructure attributed to disasters.

Another approach involves identifying and monitoring the factors that have been found or expected to contribute to or hinder economic resilience (Briguglio et al., 2009; Cutter et al., 2008). These factors cover a broad spectrum of issues, from socio-economic and financial determinants to infrastructure and institutional capacity, many of which determine the initial conditions before the shock occurs.

Some of the socio-economic and financial factors include high economic diversification, income per capita, labour force size and insurance coverage, and low poverty rates, fiscal deficits, inflation,

external debt, and export and import concentration. High quality infrastructures, such as transportation network, broadband services and housing, are associated with higher economic resilience.

Efficient institutional capacity can also play a key role in economic resilience through good governance, including impartial and independent courts. As discussed in Section C, trade policy plays an important role in the resilience of transport and logistics services and of digitally-enabling and digitally enabled services (WTO, 2020a). A high level of social capital and strong community capacity, including a high quality of life and low share of vulnerable people, can strengthen the economic resilience of households. Similarly, natural resources