

Asymmetrical Shocks in the Monetary Domain

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Abstract: Currency area is, by definition, that geographic area embodying a group of countries which have either fixed exchange rates against a currency peg or a single currency.

Giving up at the nominal exchange rate, as a national instrument for adjusting to macroeconomic shocks, represents a cost for member states of that monetary union. Thus, it brings up in forefront of the debate concerning viable functioning of a monetary union, the asymmetric shocks propagation accross countries. In fact, the underlying factor which defines a viable running of a currency area consists in its capacity of managing, through its disposable adjusting mechanisms, shocks which tend to convey asymmetrically across member states.

In this research paper, I consider relevant the asymmetric effects which might be generated by any macroeconomic shock, owing to the existence of regional heterogeneity, and also to the asymmetric transmissions of common policy decisions, within a currency area. Therefore, the concept of asymmetric shock means the macroeconomic shock which produces asymmetric effects and/or behaviours.

Analysing and perceiving the causes which could generate asymmetries within a monetary union represents a fundamental field to conceive the way they act, and to identify adjusting mechanisms able to manage and, prehaps, to absorb them.

The fundamental element which defines the optimum degree of a currency area embodied of countries having, *ex-ante*, an independent existence, represents its ability to manage, by means of its available levers, the shocks which tend to propagate asymmetrically across the member states.

The concept of asymmetric shock is relevant in the economic and monetary integration field, considering that it circumscribes to the comparative analyse between more subsystems (in our case - countries) belonging to the same system (monetary union or monetary area).

The traditional theory of optimum currency area assumes that asymmetric shocks are more problematic for countries sharing the same currency, rather than symmetric shocks, because at the same time with the monetary integration of these countries, they lost the nominal exchange rate, as a national adjustment instrument to asymmetric shocks.

In the presence of nominal rigidities in wage and price-setting, exchange rate instrument could be useful to adjust the real exchange rate in response to a shock. Nevertheless, the nominal inertia in price-setting should be balanced with the real rigidity in real wage: the combination of these two characteristics could make the adjustment to asymmetric shocks more costly (Driver și Wren-Lewis, 1999). More recently there has been increased assertion that even common shocks may have asymmetric effects, considering the existence of different transmission channels, through which could be

engendered asymmetric effects. Mundell (2002) has suggested that “all shocks are asymmetric in that they affect countries differently”.

In this paper we look upon the importance of asymmetric effects which could be generated by any macroeconomic shock, as a consequence of regional heterogeneities inside the monetary union, and also upon the asymmetric transmissions of a common policy decision at the country level. In fact, the asymmetric transmissions or effects, themselves, are divergent perturbations that could influence the running of a currency area, as a whole. Therefore, the asymmetric shock concept concerns that macroeconomic shock which generate asymmetric effects or asymmetric behaviour.

In accordance with economic literature, in Box 1 is made a broad classification of macroeconomic shocks, and possible adjustment methods to absorb them.

Box 1

A Broad Classification of Macroeconomic Shocks

Demand Shocks versus Supply Shocks

The demand shocks (as a consequence of fiscal or monetary changes) move output and inflation in the same direction, and should not ordinarily imply any policy dilemmas as far as stabilisation is concerned. Supply shocks imply a trade-off between inflation and output stabilisation, and are therefore potentially more problematic, generating adverse effects. With the independent fiscal policies (as a domestic instrument for adjustments), there is the risk to occur political conflicts between the common monetary authority and the national fiscal authorities.

Temporary Shocks versus Permanent Shocks

While temporary shocks, that have transitory effects, can be corrected by countercyclical changes in fiscal and/or monetary policy, permanent shocks, which entail a constantly decline in competitive position, could be met only by a decline in comparative real incomes and prices, by labour force migration or by important and long-term changes in the economic structure.

It is important to make that distinction, between temporary and permanent shocks, the confusion between them could call forth decisions which aggravates rather than improves the situation. Treating shocks with a permanent, structural effect as if they were temporary may only serve to entrench the underlying loss of competitiveness and make necessary reform more difficult. (Patterson and Amati, 1998).

Cyclical stabilisation is the appropriate policy response to *temporary shocks*, but in case of *permanent shocks*, structural adjustment is more likely to be required.

“While some degree of stabilisation may be helpful in the transitory phase after a permanent shock, there is a risk that ‘too much’ stabilisation may hamper structural change. Automatic stabilisers, by preventing output from moving to its new potential level, may be destabilising in the case of a permanent (supply) shock. Traditionally, it has been thought that temporary shocks are more likely to be problematic for currency unions (Cohen and Wyplosz, 1989). For example, a temporary, asymmetric shock may create an incentive for one country to run a current account deficit, which may not be in the interests of another country.” (Patterson and Amati, 1998)

In real-life most of the shocks are likely to have elements of both. Therefore it is necessary to apply both short-term policy adjustments and long-term structural reforms, and interregional financial transfers can be useful to promote structural change. The problem is to ensure that the funding is used in the correct way (Patterson and Amati, 1998).

Common Shocks versus Specific Shocks

Changes in monetary policy, including exchange rate, will have general effects for the whole economy, but they are inadequate instruments to counteract shocks which influence a industry, some member states of the currency area, or just a country region.

Some of the country-specific shocks are engendered by imperfect coordination of the monetary policy, by monetary substitutions, or by the exchange rate fluctuations, when monetary policy is independent (national). Adopting and sharing a common currency with another countries which are less susceptible to apply wrong policy decisions (i.e. decisions which adjust the effect, ignoring the cause) would improve the situation, rulling out this kind of shocks.

In the context of the optimum currency area theory, a “purely” sectoral shock can only be of any real relevance if a particular area is overwhelmingly dependent on the industry in question. In these circumstances it becomes identical to a regional shock, and opens up the question of whether the region should create its own currency; or, alternatively whether it should reduce its degree of specialisation.” (Patterson and Amati, 1998)

Real Shocks versus Financial Shocks

Real shocks could be adjusted by nominal exchange rate, the flexibility of this instrument generating rapid adjustments of the international relative prices, even when the internal prices modify (adjust) slowly.

A functional monetary union (a common currency or a fixed exchange rate) could absorb a purely financial shock (such as a shock of the internal money supply), by minimizing the monetary flow drawbacks beyond the national borders. This is not available for a flexible exchange rate. For example, in a country with flexible exchange rate, a negative financial shock which exerts supplementary pressure on the interest rate, will generate an exchange rate appreciation, with rather negative consequences on the output (production). When the exchange rate is fixed, this shock would be neutralized by an increasing liquidity from an excess in the balance of payments (assuming the capital mobility). Such an asymmetric shock of the financial market will not occur in a monetary union.

Policy-Induced Shocks versus Exogenous Shocks

There is the risk of confusion between exogenous shocks (shocks which are caused by outside events over which the national authorities have no direct control) and the endogenous shocks (induced by internal policies). At the first sight, many macroeconomic shocks appear to be exogenous phenomena with which policy authorities are suddenly faced, but in fact they are consequences of their own political activities. For example, a rise in wages as a result of unions' and employers' expectations will be "accommodated" by monetary or fiscal expansion. Also, the policy-induced shock is that shock caused by the political cycle itself: i.e. artificial stimulation of an economy before an election.

Analysing and perceiving the causes which could generate asymmetries within a monetary union represents a fundamental field to conceive the way they act, and to identify adjusting mechanisms able to manage and, perhaps, to absorb them.

Generally, macroeconomic shocks exhibit asymmetrically in time (temporally asymmetry) and in space (spatial asymmetry) as a result of structural and behavioural diversity of the economies. Temporal asymmetry of shocks is the result of different speed of reaction of economies/sectors, and spatial asymmetry – a consequence of regional differences. In real life, asymmetry exhibits simultaneously in both directions, but to simplify, I would refer to the spatial asymmetry, to the asymmetric effects produced at the regional level, between the member states of a currency area.

Asymmetric shocks might be divided in three main categories, considering as a criterion for this classification, the generating causes for asymmetry within a monetary union. Thus, we have: structural asymmetric shocks, cyclical asymmetric shocks and behavioural asymmetric shocks.

1. Structural asymmetric shocks are the consequences of the structural heterogeneity of the real economy between member states. Analysing the structure of these economies will emphasize their characteristics: the more the heterogeneity degree is higher, the more the incidence of asymmetric effects are bigger.

Some of the important elements which emphasize possible asymmetric features between countries, as potential sources of asymmetric shocks, are presented below.

Characteristics of labour market (rigidity level¹ și market regulations). A flexible labour market could represent dissipation mechanism of potential asymmetric effects generated by some shocks. Differences concerning rigidity degree and those of national regulations in the labour market between member states, could represent causes of an asymmetric propagation of common shocks in the countries of a monetary union, because shocks would be better managed in countries with a more flexible labour market, than in those countries in which the rigidity on the labour market is higher.

The structure/pattern of production and commercial activity. The theory of optimum currency area asserts that a diversified pattern of production and commercial activity reduces the possible adverse effects generated by some macroeconomic shocks. A demand shock, for a given product affects more or less a given productive field,² but the product diversification fades out the potential adverse effects on the economy, as a whole, other fields of activity compensating this shortcoming. The differences between countries in this regard (i.e. specialisations in different industry and sub-industry of the economy) could generate asymmetries, by variate exhibitions of a given external shock within these economies. In this context, a different foreign trade pattern of a country against the

¹ Labour market rigidities are divided into two categories: those rigidities which prevent the real wages adjustments to the market conditions (wage rigidity). And those rigidities which prevent employment adjustments (employment rigidity).

² I've used the notion of "productive field" because, in this context, I refer not only to the industry/activity in which it is produced, directly, the shock, but to a possible propagation of the shock in connected sub-sectors/industry (as a consequence of the complex relations between these activities). For example, a decreasing in demand for a certain product could affect the external commercial relations (reducing imports for goods which are inputs for that product).

other member states (e.g. member state that has strong commercial relations with countries outside the currency union) could create asymmetric effects: an economic or financial crises occurred in a country outside the currency union, country which is an important commercial partner for one or more of the member states, likely affects these countries, rather than the other member states.

Another element which outlines the importance of the productive and commercial activity structures regards the level of natural resources endowment for the productive process (especially, oil and natural gas resources). If countries has very different levels of such endowment, so that some countries are net exporters, and others are net importers of such resources, there is the risk of propagation some asymmetric effects in the currency union, with an increased price of such resource in the international market (symmetric shock).³

The openness degree of economies. With different degrees of openness between member states of a currency union, there is the risk to exhibit asymmetric effects of a common external shock, affecting more that countries with a higher degrees of openness than those with smaller levels of that indicator. When countries tend to be affected by specific shocks, generated by internal factors, the management of these shocks could imply different discretion measures.

The level of economic development, expressed synthetically by GDP/capita. Member states of a monetary union, which have different levels of economic development, are likely to be more asymmetrically affected by a common shock in sense of a more pressure on the labour force (with the emergence of the migration phenomenon from the poorer countries to the richer ones) and on the fiscal transfers.

2. Conjunctural (cyclical) asymmetric shocks are determined by the existence of cyclical nesynchronisation between member states of a currency area. Member states of a monetary union could need different policy reactions, even when emerged shocks are identical/similar, by the reason of cyclical divergences between those countries, generating asymmetric effects, in the short-term. Nevertheless, a functional currency area should induce, in the long-run, a synchronisation of the economic cycle between member states through the integration process in a set of similar institutions and through applying measures of a common policy (endogeneity process). In this context, two adjusting channels are essential: competitiveness channel (real exchange rate), which tend to work counter-cyclical, moving back cyclical conditions in line with the currency area average,⁴ and the real interest rate channel, which has, usually, a pro-cyclical work exacerbating divergent evolutions between economies.

3. Behavioural asymmetric shocks are engendered by the different degree of nominal and real rigidity/flexibility of wages and prices, by the heterogeneity of consumption pattern, by different reactions, even divergent, of the national macroeconomic policy to the same shock,⁵ and also by the asymmetric transmission – differences between countries concerning the work of monetary transmission channels.

It could be objected that this group of asymmetric shocks (the last one) belongs to the first one, because the divergent behaviours are induced by different structures of the real economy. However, I have included here only that elements which belong to the nominal economy (financial market structure), and, also, some refined elements which belong to the intrinsic features of that nation (political preferences, consumption preferences of population conditioned by the cultural and educational level of people etc.).

Behavioural divergences could be generated by the **heterogeneity of the structure and characteristics of the national financial sector** within the monetary area. With the different institutional features of the financial markets, different degree of market regulations and various range of available financial instruments between member countries of the currency area, the common monetary policy decision could engender asymmetric effects.

Differences concerning **internal characteristics of the monetary transmission process** could be possible generating sources of asymmetric behaviours in case of changes in monetary policy. Monetary policy transmission mechanism includes two components: on the one hand, the direct process of transmission from the central bank instruments (monetary policy interest rate, minimum reserve requirments) to those variables which influence conditions in the financial sector (credit interest rate, deposit interest rate, price equities, exchange rate); on the other hand, the link between financial

³ This is partly the reason why Norway and United Kingdom do not join the euro area, these countries being oil exporters.

⁴ Competitiveness channel sustains adjustment process in a currency area, because an overheating of the economy will induce a relative deterioration of the competitiveness (through a real exchange rate appreciation), and this in turn slows economic activity, until cyclical conditions move back in line with the monetary union average.

⁵ Even truly symmetric shocks can be problematic if they give rise to uncoordinated responses, strategic behaviour or free-riding (Buti and Sapir, 2002).

conditions and real economy, expressed by the save, investment and consumption decisions of economic agents (the aggregate demand). A compelling analyse of elements which interact in the monetary transmission process contributes to the identifying of the influence factors, and, also, to the understanding the particularity of this mechanism in the member states of a currency area.⁶

The different in cyclical position concerning economic growth, could generate asymmetric behaviours between high-growth and low-growth economies (asymmetric situations) through self-reinforcing divergence.

Asymmetric behaviours between member states of a monetary union could be produced **the internal adjusting mechanisms to the macroeconomic shocks**, if these adjusting mechanisms are not yet fully mature, so that, an important macroeconomic shocks are problematic to manage and to absorb them.

The above-described classification, in three groups, outlines the possible causes of asymmetric shocks propagation, within a currency area (the list is not complete), without take into account the relations between them: an asymmetric shock created by heterogeneities of the real economy (from the first group) could generate asymmetric behaviours in the memeber states ofa currenc union. Thus, in the third group, there are elements of the real economy – relevant for the transmission mechanism of the monetary impulse in the economy.

The fundamental objectiv of a monetary union (or currency area) should be the continuous optimization, i.e. a viable running in the long-term, built both upon the knowledge of the degree in which it is exposed to the asymmetric shocks (a *qualificative* degree, reflected by potential elements generative of asymmetric shocks: heterogeneity, diversity), and upon the ability of member countries to adapt/to react to such shocks, by adjusting mechanisms, without compromise the currency area running, as a whole.

The sources of asymmetries engendered in a currency union are structural, institutional and behavioural factors of its economies. We must note that these heterogeneities reflect mostly the soundness of an economy. Political and institutional differences could, also, reflect the diversity of preferences within a monetary union, in accordance with the democratic nature of society. Therefore, it is interesting to study and to find out the limits until such a diversity is benefic for applying an efficient stabilisation policy in a currency area.

This paper has pursued to identify and to classify general factors that could generate asymmetric shocks in a currency area. On this basis, it could be developed concrete structural analysis concerning the incidence of asymmetric shocks in a given monetary area, such as Euro Zone.

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⁶ Thus, the structure of domestic agregate demand and the real capital stock are relevant in the way the economy reacts at the changes in interest rates, as the capital expenditure of firms and expenditures of households, especially for durable goods, exhibit different degree of sensibility. The dominance of large firms could weaken the reaction to the monetary policy impulse, as they are easier access to the extra-banking sources of financing. The dominance of the banking sector within the financial system represent an important element for the distributive effects of a change in monetary policy decisions, this change having a stronger effect on those firms which are more dependent on bank financing. In this context trough the credit channel, the changes in financial conditions would amplify the monetary effects on the economy. Other relevant factors which could modify the economy reaction to the interest rate fluctuations: differences in the type of the loan interest rates (the ratio of fixed and flexible interest rates), the level of competition in the internal banking system, financial regulations at the country level.

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