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Proposed title: R&D capitalisation: where did we go wrong?

This paper is an attempt to establish a bridge between the micro and macro worlds. Where national account research traditionally focuses on the activities of producers within a single domestic economy this paper will instead focus on the activities of selected MNEs across the domestic economies they operate in. Based on a selected number of real-world case studies, i.e. MNEs with large R&D programmes, the business accounts of these MNEs will be translated to national accounts figures for those countries in which these MNEs operate. A specific focus will be put on R&D related transactions (e.g. R&D output, transfers, balance sheet positions). This translation from business accounts to national accounts will give an indication of real world distortions that may occur when national accountants measure the activities of MNEs on a domestic economy basis. The examples will illustrate the possible choices that could be made in respect of assessing economic ownership of R&D assets.

By looking at the issue not from the perspective of a single domestic economy but rather from the entire global activities of selected MNEs this paper will provide unique input into the discussion on how economic ownership of IPPs should be understood in a future version of the SNA.

Background

Globalisation and the activities of multi-national enterprises present an increasing challenge for macroeconomic measures particularly those designed to reflect domestic economies. The very presence of MNE's goes against the basic idea of there being an identifiable and measurable domestic economy consisting of domestic consumers and producers. In a globalised world with limited to no trade barriers MNEs will operate across multiple national economies, often under a single management or control structure. One of the most serious problems that MNE's present for macroeconomic measurement is the issue of assigning to domestic economies and domestic economic measures parts of a global value chain. Within the global value chain of MNEs research and development (R&D) activities are one of the most problematic links to assign to a domestic economy. This is an issue that national accountants are still researching and for which the international guidance is currently incomplete.

Perhaps the most significant change in the 2008 SNA compared to its 1993 version is the recording of R&D as gross fixed capital formation. The logic behind this step is that an R&D asset is expected to provide its owner revenues for a period longer than one year. This characteristic does not make R&D unique in respect of other (tangible) fixed asset types. As such the decision to capitalize R&D made sense in light of the significance of R&D in the modern economy.

This similarity of R&D with tangible fixed assets becomes less clear when applying the SNA principles of economic ownership. The main reasons for this are, first, that R&D (like other intellectual property) lacks a physical presence. Second, the contribution of R&D to value creation and output follows a different path than that of tangible assets. R&D leads to the knowledge creation and subsequently the blueprints of new products. So the R&D capital service is already encapsulated (or consumed) prior to starting physical transformation and generating output of newly

developed products. In contrast, the capital service of a piece of machinery is required as long as production is continued.

This is not the same as implying that R&D assets will not generate a return on investment during the life cycle of the newly developed product. They certainly do depending, for example, on the invention's commercial success and the extent to which competitors are enabled (or allowed) to adapt, or to copy its success.

When several entities are participating in one (global) production chain, the R&D asset's link to this production chain is not easily understood, particularly when these entities are (partly) affiliated, or (partly) the members of one global enterprise group. It is not necessarily straightforward which entities in the global production chain are delivering the R&D capital services nor which entities are capturing its revenues.

The 2008 SNA explains that legal ownership does not necessarily imply economic ownership. The obvious example is that of an asset under financial lease. In this particular arrangement the lessor is identified as the legal owner and the lessee the economic owner. Unfortunately the SNA does not give guidance on how legal ownership of R&D assets, or IPP's more generally, should be understood in the context of economic ownership. Driven by tax avoidance strategies, several multinational enterprises have created legal entities which are seemingly unengaged in output creation but nevertheless act as the enterprise's owner of IPPs. Clearly these entities have obtained the legal ownership but it is less easy to evaluate whether or not these entities are also the economic owners of the R&D assets. The conclusion of the Guide on Measuring Global Production is that in practice that national accountants do not seem to have any choice other than to follow the legal ownership. If so, the SNA should be clear on this point. However, recent experience shows that this choice may have unfortunate and substantive repercussions on national accounts outcomes.