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Paper title:
**Research and Development as an Intangible Asset in the National Accounts:
Where Should the Asset Boundary be Drawn?**

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Research and development activity is funded and performed both in the private sector and by government institutions, but not all of this activity conforms to the definition of an asset in the System of National Accounts. Assets in the national accounts have two key characteristics: 1) they provide their owner with economic benefits by holding or using them over a period of time, and 2) there are enforced ownership rights. The public goods quality that makes it difficult to prevent non-owners from gaining some economic benefits from R&D has led some to question whether R&D fully conforms to this definition of an asset in at least two areas. The first area is where this R&D activity is funded and conducted by governments and academic institutions; the second area is where this R&D activity is made “freely available,” for example, open source collaboration.

The magnitude of gross fixed capital formation in R&D and the resulting impact on macroeconomic aggregates will vary depending on how the definition of an asset is applied to R&D. However, a consistent application of the asset boundary for R&D is a necessary precondition for internationally comparable treatment of R&D as gross fixed capital formation in either R&D satellite accounts or national accounts. In this paper we will compare alternative proposals for the scope of R&D that should be recognized as gross fixed capital formation based on the System of National Accounts as well as on needs of the primary users of the national accounts. We will evaluate the proposition that basic R&D performed by government and academic institutions does not have the qualities of an economic asset by testing whether this activity provides economic benefits to the owners and whether ownership rights are asserted through patenting and other forms of intellectual property protection. We will do this by matching data collected by the National Science Foundation from academic and Federal performers of R&D with measures of intellectual property protection in the form of patenting indicators and economic benefits in the form of income from licensing. These patenting and licensing income measures are available from U.S. Department of Commerce for Federally performed R&D and from the Association of University Technology Managers for academic R&D. If substantial amounts of basic R&D are patented or yield licensing income, this would suggest that the R&D conforms to the definition of an asset and should be included within the asset boundary.

Using BEA’s R&D satellite account estimates, we will empirically test the sensitivity of the resulting measures of economic performance to alternative decisions on where to draw the output boundary. Finally, we will propose an interpretation of the asset boundary that could be implemented with existing data for the U.S. and many other OECD countries.