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Research Report

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Locating production and income within MNEs: **An alternative approach based on formulary apportionment**

by

Dylan G. Rassier *

Economic accountants, who are responsible for measuring gross domestic product (GDP), and tax authorities, which are responsible for collecting tax revenues, face similar challenges with respect to multinational enterprises (MNEs): economic accountants want to know where within an MNE production is taking place and, thus, where to attribute GDP; tax authorities want to know where income from production is earned. Current global guidance on economic accounting and international taxation generally require transactions within MNEs to be recognized at market (or “arm’s length”) values as if the transactions are taking place among unrelated entities. However, the values of transactions within MNEs may not reflect economic reality because related entities may exchange unique products with no active markets, and because MNEs may be structured with one or more entities that exist for purposes other than production. As a result, transactions within MNEs may distort economic accounting statistics and tax revenues.

Given the complexity and subjectivity associated with applying the arm’s length standard, recent and past discussions on international taxation suggest formulary apportionment as an alternative solution for attributing income for tax purposes within MNEs. Under formulary apportionment, income earned by an MNE is attributed to tax jurisdictions based on prescribed apportionment factors, such as sales, employment and tangible property, which arguably reflect an MNE’s presence in each jurisdiction.

In the United States (US), formulary apportionment is commonly required by state tax authorities to determine the taxable income attributable to a state for a business that operates in multiple states. Under the European Commission’s proposed directive for a common consolidated corporate tax base, formulary apportionment is an option for determining tax liabilities by country for MNEs operating within the European Union (EU). Additionally, the Organisation for Economic Co-operation and Development (OECD) is currently working on a project at the request of the G20 finance ministers to address tax base erosion and profit shifting (BEPS). One recommendation under the BEPS action plan is documentation that includes country-by-country reporting. Under country-by-country reporting, MNEs are required to report, by country, earnings, revenues, number of employees, tangible assets, etc. to provide tax

authorities with indicators regarding the location of economic activity. Respondents to the BEPS project have expressed strong concern that country-by-country reporting is suggestive of formulary apportionment, but the OECD asserts that the purpose of country-by-country reporting is for tax authorities to target audit risk rather than to replace the arm's length standard recommended in the OECD transfer-pricing guidelines, which explicitly reject formulary apportionment as a substitute for the arm's length standard.¹

Opponents of formulary apportionment present evidence that suggests formulary apportionment may distort actual income attributable to a given country due to income that is unexplained by apportionment factors and may lead to an inefficient allocation of productive resources due to differences in tax rates across countries.² As a result, formulary apportionment may yield political and administrative complexity that would require an unrealistic level of international cooperation.³

Proponents of formulary apportionment concede the approach is challenged by political and administrative complexity, but point out that the arm's length standard is challenged, too, as demonstrated by the BEPS project. However, proponents argue that formulary apportionment is more relevant in a global economy, in addition to creating a stable revenue source and promoting competitive tax policies.⁴ The bottom line for proponents is that formulary apportionment better reflects economic conditions in integrated markets such as the US or the EU.

Formulary apportionment has also been proposed as an alternative to the current method of separate accounting for attributing income-based value-added measures to foreign affiliates of US MNEs for statistical purposes.⁵ Previous work reveals distortions in the value-added measures, which are supplemental and do not affect core measures of production and income in US economic accounts.⁶

Using formulary apportionment to measure economic accounting statistics on MNEs does not face the concerns described above for international taxation because MNEs presumably do not make operating or investment decisions based on data collected for statistical purposes. However, formulary apportionment may affect statistics on MNEs and the related picture of global production. In fact, the distortions in the supplemental measures are considerably reduced under a method of formulary apportionment. Thus, the international tax discussions on formulary apportionment may lend useful insight for more accurate economic accounting statistics on MNEs and for trade and FDI policy informed by the statistics.

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¹ OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (Paris: OECD, 1995), paras. 3.58-3.74.

² James R. Hines, "Income misattribution under formula apportionment", *European Economic Review*, vol. 54 (2010), pp. 108-120.

³ OECD, *op. cit.*, para. 3.66.

⁴ Joann Martens-Weiner, *Company Tax Reform in the European Union: Guidance from the United States and Canada on Implementing Formulary Apportionment* (New York: Springer, 2006).

⁵ Dylan G. Rassier and Jennifer Koncz-Bruner, “A formulary approach for attributing measured production to foreign affiliates of U.S. parents,” in Susan Houseman and Michael Mandel, eds., *Measuring the Effects of Globalization* (Kalamazoo, MI: Upjohn Institute for Employment Research, forthcoming).

⁶ Robert E. Lipsey, “Measuring the location of production in a world of intangible productive assets, FDI, and intrafirm trade,” *Review of Income and Wealth*, vol. 56 (2010), pp. S99-S110.

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