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Taxing the Cloud

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Transacting business in the "cloud" has quickly gained popularity worldwide as the new method of providing information technology (IT) resources. Instead of purchasing or downloading software, we can now use the Internet to access software and other fundamental computing resources located on remote computer networks operated by third parties. These transactions offer companies lower operating costs, increased scalability, and improved reliability, but also give rise to a host of international tax issues. Despite the rapid growth and prevalent use of cloud computing, U.S. taxation of international cloud computing transactions has yet to receive significant scholarly attention. This Article seeks to fill that void by analyzing the U.S. tax implications of operating in the cloud from both doctrinal and policy perspectives. Such an analysis shows that the technological advances associated with the cloud put pressure on traditional U.S. federal income tax principles, which creates uncertainty, compliance burdens, liability

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risks for businesses, and a potential loss of revenue for the government. Applying the current law to cloud computing transactions also results in tax consequences that run counter to sound tax policy and may result in double taxation or complete non-taxation of cloud income.

In light of these problems, federal attention is warranted to clarify how U.S. federal income tax principles apply to businesses operating in the cloud. Thus, this Article proposes that the U.S. Department of the Treasury (Treasury) issue guidance that clearly addresses the U.S. tax implications of international cloud computing services and suggests that, ultimately, the United States must collaborate with other countries to achieve international consensus on these issues. Together these changes will ensure that the United States appropriately taxes the cloud and does so in a manner that minimizes double taxation and promotes efficiency, equity, and administrative simplicity.

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INTRODUCTION

After decades of expanding their businesses worldwide, companies have now reached the clouds. The "cloud" represents a new method of using IT resources. More specifically, it refers to a group of computers and servers that are linked together that users can access through the Internet from anywhere in the world.[1] Examples of services provided on the cloud are everywhere, such as accessing e-mail through Google's web-based Gmail, streaming movies on demand on Netflix, or using Dropbox to store documents, music, and photographs online.

"Cloud computing," the provision of IT services virtually on the cloud,[2] offers businesses significant benefits, such as cost savings, scalability, accessibility, and reliability. As a result, cloud computing has become a major business, generating over $150 billion in market sales each year.[3] This industry is expected to continue to grow rapidly, with experts predicting market sales will reach $241 billion by 2020.[4] With the substantial revenue generated by this industry, the cloud computing industry has increasingly become the focus of taxing authorities worldwide.

However, cloud computing transactions differ from the traditional provision of IT resources and services in several respects, having significant implications for tax policy and administration. One distinguishing feature of cloud computing is that these transactions occur entirely in the virtual world. There is little, if any, connection between the revenue-generating activity and a particular geographic location. Existing international tax concepts focus on physical presence in allocating taxing authority among different jurisdictions, creating challenges in determining the U.S. tax burdens of companies operating in the virtual cloud and may result in double taxation or non-taxation of cloud income. Moreover, under a typical cloud computing business model, both the risk and control associated with the computer program and underlying infrastructure are shifted to the cloud vendor. This shift in legal rights and risk bearing affects how tax law characterizes a transaction. Characterization is fundamental to the ultimate tax treatment of the transaction. Thus, this change in legal rights significantly impacts a cloud vendor's tax liabilities. In addition, the use of cloud computing changes the timing and nature of expenditures that companies make to acquire IT resources. This affects the timing and nature of a company's tax deductions, which further impacts its bottom-line tax liability.

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[1] *See* PETER MELL & TIMOTHY GRANCE, U.S. DEP'T OF COMMERCE, THE NIST DEFINITION OF CLOUD COMPUTING: RECOMMENDATIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY 2 (2011).

[2] Information is stored and processed on servers at a remote location and accessed by users through the Internet. *See* Alexei Alexis, *Sales and Use Taxes: Cloud Transactions Receive Growing Scrutiny from State Tax Departments*, E-commerce Tax Rep. Online (BNA) (June 13, 2011).

[3] *See id.* (citing to a study released in 2010 by Gartner Inc.). For further discussion of cloud computing, *see infra* Part I.A.

[4] *See* Richard Rubin & Juliann Francis, *Hey (Hey), You (You), Stop Taxing My Cloud*, BLOOMBERG BUSINESSWEEK (Aug. 25, 2011), http://www.businessweek.com/magazine/hey-hey-you-you-stop-taxing-my-cloud-08252011.html (referring to a study by Forrester Research, which analyzes technology trends).

These unique features of cloud computing have created challenges for businesses trying to comply with their tax obligations and for taxing authorities trying to collect revenues from cloud operations. If a cloud vendor is a U.S. company, it is clear under established tax principles that the United States has authority to tax income the vendor collects from its customers.[5] But can the United States tax this income when the cloud service provider is a foreign company? What if the majority of the foreign cloud service provider's customers are in the United States or the cloud vendor maintains its software and applications on servers located in the United States? Does this provide the United States with a sufficient basis on which to tax a foreign person?

As cloud computing continues to grow in popularity, governments are under pressure to answer these, and other, difficult questions. Current law does not provide sufficient guidance on the tax implications of operating a business in the cloud and, at this time, no new guidance has been issued to address the shortcomings of existing law. Both the Internal Revenue Service (IRS) and the Organization for Economic Cooperation and Development (OECD) have announced that they are studying the issue.[6]

Furthermore, U.S. taxation of international cloud computing transactions has yet to receive significant scholarly attention. Currently, most legal scholarship on international cloud transactions addresses nontax issues, such as privacy and data security.[7] Some tax scholars have discussed the international tax issues created by electronic commerce;[8] others have focused on the state sales and use tax issues created by cloud computing.[9] However, this scholarship does not specifically address the unique issues presented by the U.S. taxation of international cloud transactions.

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[5] *See* I.R.C. § 1 (West 2014); I.R.C. §§ 11, 61, 63 (2012); *infra* Part II.

[6] *See* Alison Bennett, *IRS Working on Many International Projects, Scrutinizing Need for FATCA Coordination*, Daily Tax Rep. Online (BNA) (May 14, 2013); John Herzfeld, *Electronic Commerce: IRS Open to New Rules on Software, Cloud Transactions, Official Says*, Daily Tax Rep. Online (BNA) (Apr. 4, 2012); ORG. FOR ECON. CO-OPERATION & DEV., ACTION PLAN ON BASE EROSION AND PROFIT SHIFTING (2013) [hereinafter OECD BEPS], *available at* http://www.oecd.org/ctp/BEPSActionPlan.pdf (stating that a dedicated task force will be established to address the tax challenges of the digital economy); ORG. FOR ECON. CO-OPERATION & DEV., ADDRESSING BASE EROSION AND PROFIT SHIFTING (2013) [hereinafter ADDRESSING BASE EROSION], *available at* http://www.oecd.org/tax/beps.htm.

[7] *See, e.g.*, Steven C. Bennett, M. James Daley & Natascha Gerlach, *Storm Clouds Gathering for Cross-Border Discovery and Data Privacy: Cloud Computing Meets the U.S.A. Patriot Act*, SEDONA CONF. J., September 2012, at 235 (analyzing the extraterritorial reach of the U.S.A. Patriot Act to global cloud computing providers and its impact on cross-border discovery and data

This Article seeks to fill the void in the literature by analyzing the U.S. tax implications of operating in the global cloud from both doctrinal and policy perspectives. Part I of the Article provides context, describing the popular "software as a service" (SaaS) cloud computing model. This Part also discusses the unique features of cloud computing that differentiate it from the traditional provision of IT resources for tax purposes.[10]

Part II of the Article analyzes the U.S. tax liability that arises when applying current U.S. tax law to international cloud computing transactions.[11]

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privacy); Jared A. Harshbarger, *Cloud Computing Providers and Data Security Law: Building Trust with United States Companies*, 16 J. TECH. L. & POL'Y 229 (2011) (discussing the data security issues in cloud computing, especially when companies employ an outsourced cloud provider); Shahid Khan, *"Apps.Gov": Assessing Privacy in the Cloud Computing Era*, 11 N.C. J.L. & TECH. 259 (2010) (examining whether agency privacy officers will be able to police privacy and interpret the Privacy Act of 1974 in the context of cloud computing); Vineeth Narayanan, *Harnessing the Cloud: International Law Implications of Cloud-Computing*, 12 CHI. J. INT'L L. 783 (2012) (examining the need for a method to apply data protection laws to international cloud computing transactions).

[8] The scholarship addressing the international taxation of electronic commerce primarily predates the widespread use of cloud computing, and therefore does not focus on the novel tax issues that cloud computing raises. *See, e.g.*, Reuven S. Avi-Yonah, *International Taxation of Electronic Commerce*, 52 TAX L. REV. 507 (1997) (suggesting proposals to modify the international tax regime for electronic commerce); Arthur J. Cockfield, *Balancing National Interests in the Taxation of Electronic Commerce Business Profits*, 74 TUL. L. REV. 133 (1999) (discussing the tax challenges presented by electronic commerce transactions and proposing several changes to existing tax treaty policy to address these challenges); Aldo Forgione, *Clicks and Mortar: Taxing Multinational Business Profits in the Digital Age*, 26 SEATTLE U. L. REV. 719 (2003) (arguing that governments should adopt international tax reforms to enable countries to identify and collect revenues from electronic commerce transactions); David R. Tillinghast, *Taxation of Electronic Commerce: Federal Income Tax Issues in the Establishment of a Software Operation in a Tax Haven*, 4 FLA. TAX REV. 339 (1999) (analyzing how the U.S. federal income tax law might treat hypothetical international business operations that involve electronic commerce, and highlighting issues that arise in this context). *But see* Rifat Azam, *Global Taxation of Cross-Border E-Commerce Income*, 31 VA. TAX REV. 639 (2012) (considering some of the challenges posed by electronic commerce generally—including cloud computing issues—in proposing the imposition of a global electronic commerce tax on global electronic commerce income for funding global public goods); James Carr et al., *Cloud Computing: U.S. Tax Compliance Complexity for Foreign Subsidiaries*, THE TAX EXECUTIVE, Jan. 15, 2012, at 31, *available at* http://www.tei.org/news/articles/Documents/TTE_JF12_CarRajurkarChangtor.pdf [hereinafter *Compliance Complexity*] (describing the potential tax return reporting and filing issues faced by taxpayers that engage in international cloud computing transactions).

[9] *See, e.g.*, Raffi Melanson, Comment, *Sales Taxes and the Shadow of Cloud Computing: Searching the Horizon for a Workable, National Solution*, 65 TAX LAW. 871 (2012) (arguing that state tax treatment of cloud transactions is unpredictable and federal legislation is necessary to create a framework for state tax treatment of cloud computing transactions); Matthew Adam Susson, Comment, *Thinking Out Cloud: California State Sales and Use Taxability of Cloud Computing Transactions*, 17 CHAP. L. REV. 295 (2013) (discussing how state governments have taken inconsistent approaches to taxing cloud transactions, and analyzing California state tax implications).

[10] *See infra* Part I.

[11] *See infra* Part II.

This analysis shows how the emergence of cloud computing puts a strain on traditional U.S. tax principles. It highlights the significant uncertainties that companies and taxing authorities face in determining the potential U.S. tax implications of transacting in the cloud. It also provides a framework for understanding why Treasury needs to issue additional guidance in this area.

Specifically, this Part considers whether cloud income constitutes sales, royalty, rental, or services income for tax purposes. The characterization of the income that cloud computing generates affects whether the cloud transaction results in new or additional income taxes, whether any income generated by the transaction is subject to a withholding tax, and whether a treaty can minimize U.S. tax liability. As I will argue, it is uncertain how existing law characterizes cloud computing transactions, in part because it is not clear whether these transactions involve a "transfer" of a computer program given the shift in legal rights that occurs under the typical cloud computing model.

This Part also discusses when the United States has taxing jurisdiction over the income generated by a foreign cloud vendor. This determination generally depends on whether the cloud income is sourced to the United States or attributable to a U.S. trade or business, or permanent establishment. Because cloud computing occurs almost entirely in the virtual world, it can be difficult to locate the jurisdiction in which the cloud computing activity is taking place. As a result, applying traditional domestic and treaty principles to determine when the United States has taxing authority over income generated by cloud computing transactions leaves taxpayers with more questions than answers.

In Part III, the Article critiques the current U.S. approach to taxing the global cloud.[12] It argues that the technological advances associated with the cloud put pressure on established U.S. federal income tax principles, which creates uncertainty, compliance burdens, and liability risks for businesses, as well as a potential revenue loss for governments. It also argues that cloud computing challenges several policy goals on which the current international tax regime is based—namely, avoiding double taxation and encouraging investment.[13] Because nations do not uniformly characterize and source cloud computing transactions, and existing law may enable taxpayers to minimize their ultimate tax liability by moving their servers to tax havens, cross-border cloud computing transactions are potentially taxed in multiple countries or completely escape taxation, thereby undermining these twin goals. Application of traditional tax principles to cloud computing also potentially creates a number of incongruous tax distinctions that may subject similar streams of income to different tax ramifications. This type of inconsistency runs counter to fundamental notions of equity and efficiency and may hinder certain investments.

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[12] *See infra* Part III.

[13] U.N. DEP'T OF INT'L ECON. & SOC. AFFAIRS, U.N. MODEL DOUBLE TAXATION CONVENTION BETWEEN DEVELOPED AND DEVELOPING COUNTRIES, at vii (2011) [hereinafter UN MODEL TREATY], *available at* http://www.un.org/esa/ffd/documents/UN_Model_2011_Update.pdf; *see also* Michael J. Graetz & Michael M. O'Hear, *The "Original Intent" of U.S. International Taxation*, 46 DUKE L.J. 1021, 1025–27 (1997).

This Article concludes that, ultimately, we need an international solution to fully address the policy concerns raised by the taxation of cloud computing. Specifically, we need to reassess and perhaps renegotiate bilateral treaties to provide for uniform characterization, source, and taxable presence rules that treat cloud computing transactions consistently and equitably among different nations. This type of international cooperation would minimize the current double taxation and non-taxation of cloud computing income and would assist taxing authorities in collecting the tax generated by these transactions.

This Article also recommends that the federal government clarify how U.S. federal income tax principles apply to businesses operating in the global cloud. The U.S. government should not attempt to apply traditional characterization, source, and taxable presence rules to cloud computing transactions. Instead, Treasury should modify the software regulations to clarify that cloud computing transactions should be partly characterized as generating royalty income and partly as outside the scope of the regulations. Treasury should also promulgate regulations clarifying that locating a server in the United States does not give rise to U.S. source income and does not create a taxable presence in the United States. Specifically, these rules should clarify that a physical presence is not necessary to source income to the United States or to create a taxable presence. Instead, the analysis should focus on whether the taxpayer has a sufficient economic nexus within a jurisdiction to justify allocating to that jurisdiction the authority to tax the income generated by that taxpayer. Such guidance would promote equity and efficiency and help minimize double taxation that the application of current tax concepts to the cloud business model creates.

I.
DISTINGUISHING CLOUD COMPUTING

Cloud computing has transformed the IT industry and is a key driver of electronic commerce today.[14] Cloud computing offers substantial benefits to businesses and represents a significant potential source of tax revenues for governments worldwide. However, cloud computing differs from the traditional provision of IT services in a manner that strains traditional U.S. tax principles.

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[14] *See, e.g.*, KPMG INT'L, TAX IN THE CLOUD: A BRIEFING FOR TAX DIRECTORS (2012) [hereinafter KPMG TAX BRIEFING], *available at* http://www.kpmg-institutes.com/content/dam/kpmg/taxwatch/pdf/2012/tax-cloud-briefing.pdf; Alexis, *supra* note 2; Charles Goulding, Jacob Goldman & Cassandra Gengler, *The Tax Aspects of Cloud Computing and Data Centers*, CORP. BUS. TAX'N MONTHLY, Dec. 2010, at 9; Michael A. Jacobs & Kelley C. Miller, *The State Tax Implications Within Cloud Computing*, TAX ANALYSTS, Aug. 10, 2010; Christopher Soghoian, *Caught in the Cloud: Privacy, Encryption, and Government Back Doors in the Web 2.0 Era*, 8 J. TELECOMM. & HIGH TECH. L. 359, 364 (2010).

Without any guidance to address the shortcomings of existing law, companies will find it difficult to determine, plan for, and comply with their tax obligations under current law.[15] Similarly, taxing authorities face challenges in determining a taxpayer's U.S. tax liability and enforcing tax collection.

A. What Is Cloud Computing?

In general, cloud computing is the provision of IT resources in a virtual environment.[16] This virtual environment, or the "cloud," is comprised of remote, interconnected computer networks, servers, data storage devices, and software applications operated by third parties.[17] Instead of companies having to maintain their own hardware and IT infrastructure, companies use IT resources stored on remote third party servers and operated by third party cloud service providers.[18]

For instance, a designer may choose to pay Adobe a monthly subscription fee to use Adobe's graphics editing software application, Photoshop, online. The designer here is engaging in a cloud computing transaction with Adobe, the cloud vendor. Specifically, this is an example of the SaaS cloud computing model.[19] The designer is obtaining access to software and applications that are stored on servers that Adobe owns and operates remotely. The designer also obtains space on Adobe's servers where the designer stores its images and other data. Under the SaaS model, the designer no longer needs to install, run, and maintain the large Photoshop program on its own internal system or use up its own computer memory and processing power.

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[15] Tax reporting of cloud-related income among companies is likely to differ significantly due to the inherent uncertainties that exist in applying the current law to these transactions and the highly fact-intensive nature of this determination. *See* KPMG LLP, BUILDING A SUCCESSFUL CLOUD PROVIDER SERVICE: ACCOUNTING AND TAX CONSIDERATIONS (2012), *available at* https://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/Documents/building-successful-cloud-provider-service.pdf. A specific determination of how companies currently report their cloud computing income is outside the scope of this Article.

[16] In reality, cloud computing is difficult to precisely define. However, most commentators and service providers generally agree that cloud computing refers to the broad variety of IT services that vendors provide over a network. *See* KPMG TAX BRIEFING, *supra* note 14; MICHAEL MILLER, CLOUD COMPUTING: WEB-BASED APPLICATIONS THAT CHANGE THE WAY YOU WORK AND COLLABORATE ONLINE 7–8 (2008); Alexis, *supra* note 2. The National Institute of Standards and Technology, which prepares a guideline for use by federal agencies, defines cloud computing as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction." MELL & GRANCE, *supra* note 1, at 2.

[17] *See* MELL & GRANCE, *supra* note 1.

[18] Scott D. Smith, *Peering Through the Clouds of State Taxation: Software as a Service Does Not Quite Fit Existing State Tax Regimes*, Daily Tax Rep. Online (BNA) (Nov. 2, 2012).

[19] According to the National Institute of Standards and Technology, three main cloud computing models exist: SaaS, infrastructure as a service, and platform as a service. *See* MELL & GRANCE, *supra* note 1. Because SaaS is currently the most prevalent model, this Article focuses on the tax implications of income derived from this type of cloud computing business model. *See* KPMG INT'L, CLARITY IN THE CLOUD: A GLOBAL STUDY OF THE BUSINESS ADOPTION OF CLOUD 5 (2011) [hereinafter CLARITY IN THE CLOUD], *available at* http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/cloud-clarity.pdf; MILLER, *supra* note 16, at 41. The National Institute of Standards and Technology also describes four types of general deployment models for these cloud computing services. Specifically, cloud computing technology is deployed as (1) a private cloud, (2) a public cloud, (3) a hybrid cloud, or (4) a community cloud. *See* CLARITY IN THE CLOUD, *supra*, at 5. The focus of this Article is on the public cloud.

With cloud computing, consumers and businesses benefit from increased accessibility to data applications, software, and other IT resources, as they can access software and applications, stored data, processing and network capabilities, and other fundamental computing resources from anywhere in the world through the Internet. Moving a business to the cloud also provides a company with lower operating costs. A company obtains substantial cost savings primarily because it does not have to maintain its own IT infrastructure, thereby avoiding large upfront costs to purchase and install computer hardware, costs to obtain software licenses, and high yearly overhead costs for upgrades, maintenance, and system administration. Instead, the company uses the cloud service provider's infrastructure, and the service provider takes care of managing any upgrades, maintenance, and system administration in the cloud.[20] Businesses also benefit from increased scalability because cloud services are often supplied on demand and customized to the user's needs. Additionally, the cloud enables businesses to improve reliability through the use of multiple redundant sites spread across numerous servers. By saving data remotely in the cloud, a company minimizes the risk of data loss even if the company's computer were to fail.[21] These benefits have contributed to the rapid acceptance and prevalent use of cloud computing by businesses worldwide.[22]

B. Unique Features of Cloud Computing

Cloud computing transactions differ from the traditional provision of information resources and services in several respects that have significant implications for tax policy and administration. The most significant feature of cloud computing that differentiates it from traditional software transactions is that cloud computing occurs almost entirely in the virtual world. In the past, businesses would purchase software and applications from a vendor, obtain a disk with the computer program, and use the disk to install the computer program on their individual desktop computers.[23] More recently, with the advent of electronic commerce, businesses began to purchase or license software and applications in digital form from online vendors. Under this business model, sellers would electronically transfer the computer program to the purchaser, who would download the program onto his or her computer. In both cases, the purchaser obtained possession of the computer program for a duration of time and the program resided on the purchaser's physical computer. To host the purchased software, businesses would typically also have to purchase computers, servers, and other hardware, as well as hire system administrators to maintain this infrastructure. As a result, even though the transaction may have begun online, the traditional software sale ultimately involves many physical components.

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[20] *See* Goulding, Goldman & Gengler, *supra* note 14, at 36; Soghoian, *supra* note 14, at 366.

[21] *See* Soghoian, *supra* note 14, at 366.

[22] According to a survey conducted by RightScale in 2014, nearly 90 percent of survey respondents are using the cloud. RIGHTSCALE, STATE OF THE CLOUD REPORT: PUBLIC CLOUD ADOPTION NEARS 90 PERCENT ON THE JOURNEY TO HYBRID CLOUD (2014), *available at* http://assets.rightscale.com/uploads/pdfs/RightScale-2014-State-of-the-Cloud-Report.pdf. Similarly, a 2013 Gartner survey found that 80 percent of the organizations surveyed intend to use cloud services within 12 months. *Gartner Says the Road to Increased Enterprise Cloud Usage will Largely Run Through Tactical Business Solutions Addressing Specific Issues*, GARTNER (Aug. 29, 2013), http://www.gartner.com/newsroom/id/2581315. Examples of some multinational enterprises that operate in the cloud include Hewlett-Packard, Apple, Microsoft, and Cisco. *See* Goulding, Goldman & Gengler, *supra* note 14, at 9, 35–36.

Conversely, cloud computing involves neither the physical nor electronic transfer of possession of a computer program to the purchaser. The program also does not reside on the purchaser's computer. In a cloud computing transaction, a cloud vendor solely provides the purchaser with electronic access to a computer program, applications, and corresponding data. The programs, applications, and data continue to reside on the vendor's infrastructure. Thus, the only physical components that remain are the vendor's servers and other computer infrastructure.

This unique feature is significant for several reasons. First, the cloud computing model has led to differential risk bearing. Under the traditional software distribution model, the purchaser bore all or a significant portion of the risk with respect to the operation of the computer program and the corresponding hardware. But with the cloud, not only does the cloud vendor bear the risk that the computer program function properly, but it also bears the risk with respect to the underlying infrastructure on which the software resides. As a further consequence, consumers have less control than before over the program and applications. Under the SaaS model, control has now shifted to the cloud vendors. Because cloud vendors now bear more of the risk and control with respect to the program, a cloud transaction may be characterized as the provision of services rather than the transfer of an intangible asset under the current law. A transaction's characterization affects a taxpayer's ultimate tax liability, thereby making this change significant from a tax perspective.

Second, because the program no longer resides on the customer's computer, it changes how the customer's legal rights are defined. Specifically, under the old method of distributing software electronically to a customer, the customer obtained possession of the program on his or her machine. Therefore, the developer had to obtain and utilize copyright protection to prevent unauthorized copying or distribution of the computer program by the customer.

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[23] *See* Josh Manchester, *The Software Revolution: A Sector Trends Series*, FORBES (Sept. 17, 2013, 12:40 PM), http://www.forbes.com/sites/truebridge/2013/09/17/the-software-revolution-a-sector-trends-series/.

With cloud computing, this is no longer a critical necessity because the customer does not possess a copy of the program that is susceptible to copying or distribution. This may affect the jurisdiction to which the income is sourced for tax purposes.

Third, by eliminating many of the physical components involved in traditional technology transactions, the cloud reduces any connection between the revenue-generating activity and a particular geographic location. Under current law, a jurisdiction's taxing authority over a cross-border transaction generally requires a geographic connection to the economic activity that creates the income.[24] However, a vendor's servers and other computer infrastructure can be located almost anywhere with little to no effect on economic activity. Cloud vendors often also use mirror servers. Mirror servers are servers located in multiple locations. They contain identical software and perform identical functions as a means of backing up data and ensuring that a particular server does not get overloaded.[25] These servers do not generally constitute an integral business function of the vendor's cloud computing business. Consequently, this change makes it difficult to determine when a country has jurisdiction to tax cloud income and may result in non-taxation of such income.

In addition, the virtual nature of cloud computing affects the timing of a company's payments to acquire and utilize a particular computer program or application. Previously, acquiring such software required large upfront costs, as the company had to obtain licenses for its employees, upgrade its hardware, purchase servers to process and store the data, and hire system administrators to install and maintain the additional infrastructure. With cloud computing, businesses no longer need to make these large capital expenditures. Instead, a company pays a monthly fee to the cloud service provider and obtains access to the software virtually, without having to purchase any additional hardware or infrastructure. Because this feature of cloud computing alters the timing of when the company may deduct the expenses for income tax purposes, it also affects a company's bottom-line tax liability.[26]

The virtual nature of cloud computing also contributes to its location independence, which exacerbates tax compliance issues that arise from electronic commerce more generally. Cloud computing provides users with broad network access, which enables users to access IT resources over a network from anywhere in the world through the use of their computer, tablet, mobile phone, or other similar device.[27] The customer's ability to use the cloud computing services is not dependent on the customer's location. Similarly, cloud vendors can provide the cloud computing services from anywhere in the world. As a result, companies can now easily expand their business worldwide and support employees working remotely.[28] This flexibility is even easier to achieve because cloud vendors often use smart servers, which automatically perform many functions previously performed by IT personnel.[29] Thus, cloud computing transactions often involve little to no human interaction.

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[24] *See* Graetz and O'Hear, *supra* note 13, at 1033–35; *infra* Part II.C.

[25] DAVID E. HARDESTY, *Electronic Commerce Services*, *in* ELECTRONIC COM.: TAX'N AND PLAN. ¶ 13A.02 (Thomson Reuters) (2014).

[26] Although this issue is significant, because it is not an international tax issue, it is outside the scope of this Article.

[27] MELL & GRANCE, *supra* note 1, at 2.

Moreover, cloud vendors generally utilize resource pooling to provide cloud computing services, which further contributes to a sense of location independence. Resource pooling refers to the cloud vendor's use of a collection of servers and other hardware components, which are often located in numerous locations, to provide multiple customers with simultaneous access to IT resources.[30] Resource pooling enables the cloud vendor to host customers' data, software, and applications at different locations on this network depending on capacity and customer demand. As a result, the vendor's data and applications may be located in multiple locations, and the customer has no control or knowledge of the exact location of the provided resources.[31] Because a geographic connection is often a threshold requirement for a country to have taxing authority, the location independence of cloud computing further undermines traditional international tax concepts and creates tax administrative difficulties.

Cloud computing also provides users with a mix of intangible goods and services in a manner that further complicates applying traditional tax principles to these activities. Although not unique to cloud computing, bundling is most extreme in this context. The typical cloud computing pricing model makes it especially difficult to separate a transaction into its multiple components. The two most common pricing models are usage-based and subscription-based.[32] The usage-based model provides customers with a "pay as you go" plan, where the price depends on the use of time, data, server space, or another measured basis.[33] The subscription-based model often charges users with periodic fees in exchange for unlimited access to the products and services on a monthly basis, or some other duration of time.[34] Pursuant to traditional tax principles, the tax implications of cross-border transactions significantly depend on the transaction's characterization.[35] As a result, bundling goods and services in this manner makes cloud computing transactions even more difficult to characterize under existing law. This further exposes cloud vendors to potential tax risks and makes it challenging for taxing authorities to accurately assess a cloud vendor's tax liability.

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[28] *See* Soghoian, *supra* note 14, at 366.

[29] A smart server is a server that contributes a significant economic function (other than solely executing computer files), such as executing all aspects of a company's daily business transactions. *See* Randolph J. Buchanan, Comment, *The New-Millennium Dilemma: Does Reliance on the Use of Computer Servers and Websites in a Global Electronic Commerce Environment Necessitate a Revision to the Current Definition of a Permanent Establishment?*, 54 SMU L. REV. 2109, 2133 (2001).

[30] MELL & GRANCE, *supra* note 1, at 2.

[31] *See id.*

[32] *Country Perspectives on Taxing the Cloud – United Kingdom*, KPMG INT'L (May 1, 2012), http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/taxing-the-cloud/Pages/united-kingdom.aspx. Advertising-supported models and market-based pricing are other pricing models that may exist in the cloud computing context. *Id.*

[33] *See id.*; Jacobs & Miller, *supra* note 14, at 7.

II.
THE CHALLENGES OF U.S. TAXATION OF CLOUD COMPUTING

To best illustrate the challenges inherent in determining the U.S. tax treatment of cross-border cloud computing transactions, this Article analyzes the U.S. federal income tax consequences of the following hypothetical, but common, SaaS cloud computing transaction.[36] A foreign corporate software developer (Developer) has created software for which it currently holds all intellectual property rights.[37] The software allows users to record and manage their business transactions. For instance, it allows customers to manage inventory, record sales, fulfill orders, process payroll, execute accounting functions, manage employees, and create financial statements. The business information is generated and entered by the customers' employees. All customer data is held in a single database that provides the organization with access to all of its performance metrics in a customizable, real-time display. The business application software and custom databases are hosted on Developer's computer infrastructure rather than on the customer's own computer hardware. Developer maintains the hardware and networking equipment required for the user to access the software. Developer also ensures the software is working properly and unilaterally installs any necessary upgrades.

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[34] This type of pricing model is most often used for SaaS offerings. Ethann Castell, *The Present and Future of Cloud Pricing Models*, IBM: THOUGHTS ON CLOUD (June 12, 2013, 10:19 AM), http://thoughtsoncloud.com/2013/06/present-future-cloud-pricing-models./. For instance, IBM SmartCloud for Social Business, which provides customers with SaaS through its online collaboration tool, offers usage-based pricing where customers pay for the amount of resources actually used.

[35] *See infra* Part III.A.

[36] This hypothetical cloud computing transaction incorporates terms found in the customer agreements of popular public cloud providers. *See, e.g.*, MASTER SUBSCRIPTION AGREEMENT, SALESFORCE (2014), *available at* http://www2.sfdcstatic.com/assets/pdf/misc/salesforce_MSA.pdf; *AWS Customer Agreement*, AMAZON WEB SERVS., http://aws.amazon.com/agreement (last updated Mar. 15, 2012); *Cloud Servers (Next Gen) SLA*, RACKSPACE, http://www.rackspace.com/information/legal/cloud/serverssla_nextgen (last updated Apr. 24, 2014).

This Article analyzes the tax implications of a SaaS type of cloud computing transaction as illustrated in the hypothetical cloud computing transaction outlined above. The tax ramifications of engaging in a cloud computing transaction that involves infrastructure as a service or platform as a service is outside the scope of this Article. Also, in many cloud computing transactions, the cloud vendor and the developer may be two separate parties. Under such circumstances, we would have to analyze the income Developer generates from its transaction with the cloud vendor.

[37] This hypothetical transaction focuses on the U.S. tax implications of a foreign cloud company with U.S. customers. However, similar issues arise in foreign countries for a U.S. cloud vendor with foreign clients.

Developer has customers worldwide, comprised of both U.S. businesses and foreign businesses. In exchange for a monthly subscription fee, customers receive access to the software's web-based tools for data processing, access to customizable databases of the customer's information, disk space, and technical support relating to implementing, upgrading and supporting the software, applications, and underlying infrastructure. Moreover, pursuant to the contract, there is neither a transfer of title to the software, nor a transfer of possession of the software to the customer. The customer does not own the software license, and the software is not downloaded by or delivered to the customer or installed on the customer's computers. Instead, customers access the software solely through the Internet; no special hardware or software is needed. Essentially, the customer purchases a subscription to use the software that terminates when the customer stops paying the subscription fee. Customers do not exercise any control, custody, or possession over the software or the hardware on which the software is located.

Under the current international tax regime, the United States applies personal taxation to its residents, thereby subjecting U.S. persons to U.S. federal income tax on their worldwide income.[38] As a result, U.S. citizens, U.S. residents, and U.S. companies engaging in cloud computing transactions will be subject to U.S. federal income tax on their income, regardless of where the income is earned.

On the other hand, the United States generally only taxes nonresidents on income that they generate within U.S. borders.[39] As such, a foreign cloud vendor, like Developer, generally will be subject to U.S. federal income taxation on income that is (1) effectively connected with a U.S. trade or business if no treaty exists between the United States and the cloud vendor's jurisdiction,[40] (2) attributable to a permanent establishment if a treaty applies,[41] or (3) fixed, determinable, annual, and periodical (FDAP) and arises within the

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[38] *See* I.R.C. § 1 (West 2014); I.R.C. §§ 11, 61, 63 (2012). This is often referred to as "residence-based taxation" because the United States' jurisdiction to tax arises from the taxpayer's residence in the United States. *See* Graetz & O'Hear, *supra* note 13, at 1034.

[39] This is often referred to as "source-based" or "territorial" taxation. *See* Azam, *supra* note 8, at 642. In general, income is considered generated in or sourced to the United States when economic activities creating the income occur in the United States. U.S. DEP'T OF THE TREASURY, OFFICE OF TAX POLICY, SELECTED TAX POLICY IMPLICATIONS OF GLOBAL ELECTRONIC COMMERCE 22 (1996) [hereinafter TREASURY WHITE PAPER], *available at* http://www.treasury.gov/resource-center/tax-policy/Documents/internet.pdf. Similar source of income principles exist worldwide. *Id.*

[40] I.R.C. § 871(b) (West 2014); I.R.C. § 882 (2012).

[41] *See* INTERNAL REVENUE SERV., UNITED STATES MODEL INCOME TAX CONVENTION OF NOVEMBER 15, 2006 (2006) [hereinafter U.S. MODEL TREATY], *available at* http://www.irs.gov/pub/irs-trty/model006.pdf; ORG. FOR ECON. CO-OPERATION & DEV., MODEL TAX CONVENTION ON INCOME AND ON CAPITAL at arts. 5, 7 (2010) [hereinafter OECD MODEL TREATY]; UN MODEL TREATY, *supra* note 13, at arts. 5, 7.

United States.[42] The amount of income that is subject to U.S. taxation under each of these categories depends significantly on how the income is characterized.

No rules exist that specifically address the U.S. tax treatment of the income generated by a non-U.S. person in a cross-border cloud computing business. Instead, Treasury has generally adapted and applied existing tax principles to developments in technology.[43] Because of the unique features of cloud computing, applying these existing principles to cloud computing transactions is challenging.[44] This Section examines the uncertainties involved in applying the current U.S. tax law to determine the tax liability of foreign cloud service providers, which will provide a framework for understanding why it is necessary to issue additional guidance in this area.

Specifically, Part II.A illustrates that it is unclear under existing law whether cloud computing income should be characterized as rental, royalty, or services income. Part II.B demonstrates that this uncertainty regarding the transaction's character, together with the virtual nature of cloud computing, makes it difficult to determine whether the transaction generates U.S. source income. This determination impacts the cloud vendor's bottom-line U.S. tax liability because the income's source affects the extent to which the United States has taxing jurisdiction over the income. Part II.C analyzes when a foreign cloud vendor has a taxable presence in the United States and highlights how the income's source affects the extent to which the United States can tax the business profits attributable to such taxable presence. Even if the cloud vendor does not have a U.S. taxable presence, the United States may nevertheless tax certain nonbusiness income of the cloud vendor. Thus, Part II.D discusses how the source of the cloud-related income affects the extent to which the United States can tax FDAP income. Finally, Part II.E analyzes when the U.S. owners of a foreign cloud vendor corporation may be subject to U.S. taxation on the cloud vendor's cloud-related income. Although the character of the income affects this determination, Part II.E concludes that cloud-related income generated from a SaaS transaction is not likely to come within subpart F, one of the Internal Revenue Code's (the Code) anti-deferral regimes.

A. Characterizing Cloud-Related Income

The starting point in analyzing the tax liability arising from a cloud computing transaction is characterizing the income that the underlying transaction generates. Characterizing the income is the first step because the income's characterization affects the source of income arising from cross-border cloud operations, which impacts the extent to which a cloud vendor with a taxable presence in the United States has business profits subject to U.S. taxation. The income's character and source also impact whether cloud income is subject to a U.S. withholding tax when no taxable presence exists. In addition, the income's characterization affects the determination of subpart F income and other related tax issues.

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[42] *See* I.R.C. § 871(a) (West 2014); I.R.C. §§ 1441–42 (2012). These provisions may be modified by an income tax treaty between the United States and the foreign jurisdiction. *See* REUVEN S. AVI-YONAH, DIANE M. RING & YARIV BRAUNER, U.S. INTERNATIONAL TAXATION: CASES AND MATERIALS 124 (3d ed. 2011).

[43] TREASURY WHITE PAPER, *supra* note 39, at 3.

[44] The OECD has also noted in its Base Erosion and Profit Shifting Plan that the digital economy poses challenges for the application of existing international tax rules. ADDRESSING BASE EROSION, *supra* note 6; OECD BEPS, *supra* note 6.

But how does tax law characterize the income generated by a cloud computing transaction? Specifically, does it characterize the cloud-related income as sales, royalty, rental or services income? The answer to this question is of critical importance for tax purposes. However, as this Section shows, cloud-related income does not neatly fall within any of the traditional income classifications. Therefore, it is unclear to what extent, if any, the United States can tax the income generated by foreign cloud vendors.

Generally, the correct characterization of a transaction depends on a factual analysis of the transaction and the rights of the parties.[45] Regulations promulgated by Treasury in 1998 (the "software regulations") provide guidance in classifying international transactions involving computer programs.[46] Transactions that do not involve computer programs are outside the scope of the regulations and are analyzed under traditional characterization principles. Currently, it is unresolved whether cloud computing transactions fall within the scope of the software regulations.

1. Classification Under the Software Regulations

If the software regulations apply to a SaaS transaction, then the transaction will not be classified as the provision of services. Instead, a typical SaaS transaction will likely be classified as either a transfer of a copyrighted article or a transfer of a copyright right in a computer program under the software regulations. If classified as a transfer of a copyrighted article, the transaction will likely give rise to rental income. If classified as the transfer of a copyright right, the transaction will most likely be treated as giving rise to royalty income.

To fall within the scope of the software regulations, a transaction generally must (1) relate to a computer program and (2) involve either the transfer of a computer program or the provision of services for the development or modification of a computer program or know-how with respect to a computer program.[47] For purposes of the software regulations, a "computer program" is "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result," and includes any database or similar item only if it is "incidental to the operation of the computer program."[48] Because a SaaS arrangement involves software, which generally satisfies the definition of a "computer program," a cloud computing transaction satisfies the first requirement.

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[45] *See* Boulez v. Comm'r, 83 T.C. 584 (1984).

[46] *See* Treas. Reg. § 1.861-18(a)(1) (1998); T.D. 8785, 1998-42 I.R.B. 5.

[47] *See* Treas. Reg. § 1.861-18(a), (b)(1).

With respect to the second requirement, the typical services provided in a SaaS transaction, such as web hosting, database access, and technical support services, would not constitute the provision of services under the software regulations. This means that the transaction will fall within the scope of the software regulations only if the transaction is considered to involve a transfer of a computer program. However, as argued below, it is unclear whether a cloud computing transaction involves the transfer of a computer program largely because, under the typical SaaS model, the cloud vendor bears a significant portion of the risk and retains most of the control over the computer program.

Consider Developer in our hypothetical cloud transaction. Unlike a traditional software sale where software is purchased from a store or delivered electronically to the customer's computer where it is installed, Developer's customers neither possess nor store the program or any of its accompanying data on their own computer hardware. Instead, Developer, as the cloud service provider, hosts the program on Developer's hardware and infrastructure. The customer merely accesses the software and data through the Internet, no longer bearing the risks associated with maintenance of the software or the underlying hardware. Any risk of loss is borne by Developer as the cloud service provider. In addition, the customer no longer has control over the software. Developer makes any upgrades and necessary changes to the program unilaterally as needed and can deny the customer access to the program if the customer stops making the monthly payments. In other words, tax law treats the cloud vendor, rather than the customer, as owning both the software and the infrastructure used in connection with the SaaS transaction.

These differences may serve as a sufficient basis to argue that allowing customers to access software in the cloud does not result in a "transfer" of the computer program to the customers.[49] Accordingly, the entire transaction may be outside the scope of the software regulations. Alternatively, it is also possible that a SaaS transaction is both partially within the software regulations because it involves a transfer of a computer program and partially outside the software regulations because it involves services that are not de minimis in relation to the software transfer.

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[48] *Id.* § 1.861-18(a)(1), (3).

[49] Support for this argument potentially may also be found in Treasury Regulations section 1.199-3(i)(6). *See* Treas. Reg. § 1.199-3(i)(6) (2008). These regulations, which distinguish between a lease or license and the provision of services for purposes of calculating the production activities deduction under section 199, provide that computer software accessed online generally does not constitute a lease or license unless customers can obtain a copy of the software either on a disk or through download from the Internet. *See id.* According to the preamble to these regulations, the IRS and Treasury view transactions that provide customers with access to online software as significantly different from transactions that transfer software to customers via disk or download. *See* T.D. 9317, 2007-16 I.R.B. 2. The preamble further clarifies that "with respect to online software, taxpayers are providing customers with access to the taxpayers' software as opposed to actually transferring the software to customers either affixed to a tangible medium or by allowing them to download the computer software from the Internet." *Id.* Thus, at least for

a. Classification as the Provision of Services

The software regulations typically will not classify SaaS transactions as "services." The regulations only classify a transaction as services if the transaction involves the provision of services for the development or modification of a computer program or the provision of know-how with respect to a computer program.[50]

However, the typical services provided in a SaaS transaction, such as web hosting, database access, and technical support services, do not constitute the provision of services for the development or modification of a computer program. The determination of whether the regulations treat a transaction as the provision of services for the development or modification of a computer program depends on all the facts and circumstances of the transaction. Facts and circumstances that may be taken into account include the intent of the parties as to copyright ownership rights, which party bears the risk of loss in developing or modifying the program, and whether the services are de minimis relative to the overall transaction.[51]

To demonstrate, consider Developer's transactions with its customers. Unless Developer's activities fall within the limited exception for public performance and public display rights,[52] Developer will continue to own all of the copyright rights in the business management software and its customers will not have any rights to develop or modify the program. Pursuant to the terms of the agreement, Developer also performs any modifications to the software unilaterally and will bear the entire risk of loss for these modifications. Thus, the services that Developer provides its customers do not constitute the provision of services for the development or modification of a computer program.

In addition, the typical services provided in a SaaS transaction do not constitute the provision of know-how with respect to a computer program and therefore will not be classified as services under the software regulations. The regulations define the provision of know-how as information that a taxpayer provides that (1) relates to computer programming techniques, (2) is furnished under conditions preventing unauthorized disclosure, (3) is specifically

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purposes of section 199, Treasury takes the position that online access to software does not constitute a "transfer" of the computer software.

[50] *See id.* § 1.861-18(a), (b)(1).

[51] *See id.* § 1.861-18(b)(1), (d), (h), Ex. (15).

[52] See discussion *infra* Part II.A.1.c.

contracted for between the parties, and (4) is considered property subject to trade secret protection.[53] Most SaaS transactions do not involve the provision of information that meets these conditions.

b. Classification as Transfer of a Copyrighted Article

The software regulations will most likely classify a cloud computing transaction that comes within the scope of the software regulations as a transfer of a copyrighted article and that gives rise to rental income.[54] A transfer of a computer program constitutes a transfer of a copyrighted article if a person acquires a copy of a computer program from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device, and such transfer is not de minimis relative to the overall transaction.[55]

To demonstrate, consider Developer's transfer of online access to its business management software to customers in exchange for a monthly subscription fee. If this transaction does not involve the right to publicly perform or display the software, then the transaction does not involve the transfer of any copyright rights. The rights obtained by Developer's customers are similar to the rights the customer would have obtained had the customer acquired an actual copy of the business management software.[56] In both cases, the customer has the right to use the software, but does not have any rights of a copyright owner. The software regulations also specify that the copy of the program may be fixed in *any medium*, which implies that hosting the program on Developer's server may be irrelevant.[57] Thus, pursuant to existing law, it is reasonable to conclude that a typical cloud computing transaction constitutes a transfer of a copyrighted article.[58]

A SaaS transaction that involves a transfer of a copyrighted article will likely give rise to rental income because the customers do not acquire sufficient benefits and burdens of ownership. The software regulations treat a transfer of a copyrighted article as a lease of a computer program, rather than a sale, if the facts and circumstances indicate that the transaction does not transfer substantial benefits and burdens of ownership in the copy of the computer program.[59] Relevant factors include the customer's right to make copies of the program, the right of alienation, the risk of loss, the right to use copies or the program itself in perpetuity, the right to purchase the program once certain amounts have been paid or a certain period has elapsed, and the right to possess copies of the program once the agreement has terminated.[60]

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[53] Treas. Reg. § 1.861-18(e).

[54] *See id.* § 1.861-18(b)(1), (c).

[55] *Id.* § 1.861-18(c).

[56] *See* TREASURY WHITE PAPER, *supra* note 39, at 28–29 (noting that it is clear that some transactions involving the sale of digitized information, such as the electronic sale of computer programs, are merely substitutes for conventional transactions involving physical objects).

[57] *See* Treas. Reg. § 1.861-18(c)(3).

[58] This Article focuses on a SaaS type of cloud computing transactions. A different conclusion may be reached for cloud computing transactions that are PaaS or IaaS transactions.

[59] Treas. Reg. § 1.861-18(f)(2).

Applying this analysis to Developer's cloud business model suggests that the regulations would likely characterize typical SaaS cloud computing transactions as leasing activities.[61] For instance, Developer's customers do not have the right to use the software in perpetuity because, pursuant to their agreement, the customer's rights terminate once the customer stops making subscription payments. In addition, customers do not have the right to make copies of the software, to possess or sell the program, or to purchase the program once a certain period elapses. Customers also do not bear any risk of loss with respect to the program because Developer has the contractual obligation to ensure that the software is functioning properly, maintain the hardware on which the software runs, and install any necessary updates to the software.[62] Consequently, if the software regulations apply, the taxing authorities will likely characterize the transaction as a lease transaction generating rental income.

c. Classification as Transfer of a Copyright Right

Alternatively, a possible, but more unlikely result, is that a cloud computing transaction involves the transfer of a copyright right. A copyright right refers to the right to make copies of the computer program for purposes of public distribution, the right to prepare derivative computer programs based on the copyrighted program, the right to make a public performance of the computer program, and the right to publicly display the computer program.[63] A transaction in which a person acquires one or more of these rights is deemed to involve a transfer of a copyright right in the computer program.[64]

It is unclear under current law whether a SaaS transaction involves the transfer of a copyright right. A transaction like the hypothetical cloud computing transaction described above clearly does not involve the transfer of the right to make copies of Developer's software for public distribution or the right to prepare derivative programs.[65] Developer's customer agreements limit access to Developer's software and accompanying data to customers and their employees so that software customers never obtain an actual copy of the program that is susceptible to copying.[66] The customer agreements also specifically prohibit customers from reverse engineering, decompiling, disassembling, or creating any derivatives of the program. The uncertainty arises because existing law does not clearly address whether cloud computing involves the transfer of the right to make a public performance of a computer program or the right to publicly display a computer program, which would also constitute the transfer of a copyright right.

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[60] *See id.* § 1.861-18(h).

[61] *See*, *e.g.*, *id.* § 1.861-18(h), Ex. (4) (characterizing a transfer of a computer program as a lease where the taxpayer sells a computer program on the Internet to a purchaser who downloads the program on its computer but can only access the program for one week, after which time an electronic lock is activated and the program can no longer be accessed); *id.* § 1.861-18(h), Ex. (12) (characterizing a transaction as a lease where the taxpayer grants a corporation the right to make its computer program available to employees through a local area network in exchange for a monthly fee to receive use of the program, program upgrades, and de minimis technical support and at the termination of the agreement, the corporation must return any disks with the program to the taxpayer).

[62] These terms are similar to those found in the customer agreements of popular public cloud providers. *See* sources cited *supra* note 36.

[63] Treas. Reg. § 1.861-18(c)(2). These rights are based on, but not exactly the same as, copyright law principles. *See* 17 U.S.C. § 106 (2011). Tax law departs from copyright law when necessary to take into account the unique characteristics of computer programs. TREASURY WHITE PAPER, *supra* note 39, at 30.

[64] Treas. Reg. § 1.861-18(c)(1).

Treasury and the IRS have both recognized that the definition of the "right to make a public performance" or the "right to publicly display" a computer program are still developing and that it may be necessary to revisit the scope of these rights. But they have yet to define these terms for purposes of the software regulations.[67] Instead, the software regulations defer to intellectual property law to supply these definitions.[68] Under copyright law, "public" for purposes of a public performance or public display of a work means either (1) performing or displaying the work at "a place open to the public or at any place where a substantial number of persons outside of a normal circle of family and its social acquaintances is gathered" or (2) transmitting or otherwise communicating a performance or display to a place described in (1) above or "to the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times."[69]

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[65] Although the hypothetical fact pattern provided in the Article does not transfer the rights to make copies for purposes of distribution or any derivative rights, some cloud computing transactions may provide for the transfer of these rights as part of the access to the software. In such cases, the same analysis will need to be undertaken to determine if the cloud service provider's earned income is sales income or royalty income.

[66] The number of employees who use the software to perform services for the transferee is irrelevant for these purposes. The software regulations specifically provide that there has not been a transfer of the right to make copies of the computer program for distribution "to the public" if the transferee is only permitted to distribute copies of the software to "either a related person, or to identified persons who may be identified by either name or by legal relationship to the original transferee." Treas. Reg. § 1.861-18(g)(3). Therefore, even though Developer's customers are typically large businesses that provide many employees with access to the software from multiple computers and locations, merely permitting employees to use the program in connection with their employment does not constitute a right to distribute copies "to the public." *Id.* § 1.861-18(h), Ex. (10–11).

[67] *See* T.D. 8785, 1998-42 I.R.B. 5.; Treas. Reg. § 1.861-18(g)(3)(i) (specifying that the definition of "to the public" contained in the software regulations applies only for purposes of determining whether the transferee has a right to distribute the program "to the public").

[68] *See* T.D. 8785, 1998-42 I.R.B. 5.; TREASURY WHITE PAPER, *supra* note 39, at 30; Herzfeld, *supra* note 6.

[69] 17 U.S.C. § 101 (2011). In addition, under the Copyright Act of 1976, "perform" means to render the work, such as through recitation, acting, or dancing, either directly or by means of any

It is possible that a cloud computing transaction may satisfy this definition of public performance or public display. In particular, a customer's use of Developer's software would likely entail more than just the access, use, and display of the business management software and related reports solely within the company. Instead, Developer's software and data would likely also be used and displayed outside of the company by persons such as the organization's suppliers, distributors, and investors.[70] Accordingly, the taxing authorities may argue that Developer's customers have acquired the right to publicly display the computer program, which means a typical SaaS cloud computing transaction will be treated as involving a transfer of a copyright right.

If a SaaS transaction is deemed to involve the transfer of a copyright right, then the transaction will likely be characterized as a license of the copyright right under the software regulations. This determination is made by considering all the facts and circumstances, and ultimately depends on the terms of the particular agreement between the cloud service provider and its customers.[71] Relevant factors include the exclusivity of use of the software, the term of the transfer, and any geographic limitations on use.[72] If all substantial rights in the copyright are transferred, the transfer of a copyright right is characterized as a sale or exchange of property.[73] However, if all substantial rights have not been transferred, the transaction is classified as a license.[74] Because most cloud vendors do not transfer all substantial rights to their customers, most SaaS transactions—including Developer's transaction in our hypothetical—will give rise to a license transaction under the software regulations.[75]

For instance, a cloud vendor's customer agreements generally do not give a particular customer the right to use the software exclusively. Instead, a cloud vendor will allow numerous customers to access its software simultaneously.[76] The cloud vendor has the right to enter into other licenses with regard to the

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device or process. *Id.* To "display" a work refers to showing a copy of it directly or through a device. *Id.*

[70] *See, e.g.*, SALESFORCE, *supra* note 36.

[71] *See* Treas. Reg. § 1.861-18(f)(1).

[72] *See id.* § 1.861-18(h) (1998); T.D. 8785, 1998-42 I.R.B. 5.

[73] *See* Treas. Reg. § 1.861-18(c), (f)(1).

[74] *Id.* § 1.861-18(f)(1).

[75] *See id.* § 1.861-18(h), Ex. (6). Moreover, the Supreme Court has held that payments for the *use* of copyrights result in royalty income, rather than income from the sale of property. Comm'r v. Wodehouse, 337 U.S. 369, 371 (1949). This further supports treating payments for access to software as royalty income instead of sales income.

However, a cloud computing transaction may give rise to sales income under certain circumstances. For instance, if a developer sells a digital product (e.g., software) through means of its cloud infrastructure by transferring to the purchaser sufficient ownership rights (e.g., the right to use the software exclusively within a particular country for the duration of remaining life of the copyright in the software) the transaction will be classified as a sale of a copyright right. *See* Treas. Reg. § 1.861-18(h)(1).

[76] *See, e.g.*, AMAZON WEB SERVS., *supra* note 36.

copyright of its program, even in the same country as its existing customers.[77] A customer's rights to the software also do not last for the term of the copyright; the rights terminate when the customer stops paying its monthly subscription fee.[78] Accordingly, if a SaaS cloud computing transaction falls within the software regulations and constitutes a transfer of a copyright right, the transaction will likely be a license generating royalty income.[79]

2. Classification Under Traditional Characterization Principles

If the software regulations do not apply to a SaaS transaction because the cloud activities do not constitute a mode of software delivery, then the arrangement's characterization depends to a large extent on whether a transfer of property rights exists. If no property right exists either in form or in substance, the transaction is generally characterized as the provision of services.[80] If a property right exists, the transaction will be characterized as a sale, lease, or license depending on the nature of the property rights that are transferred.[81] This Section illustrates that the current law would most likely treat a typical SaaS transaction as generating services income because these types of transactions generally do not involve the transfer of any property rights either in form or in substance.

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[77] *See id.*

[78] *See id.*

[79] Under treaty law, if there is no permanent establishment, the transaction may also be classified as generating royalty income. *See* OECD MODEL TREATY, *supra* note 41, art. 12(3); UN MODEL TREATY, *supra* note 13, art. 12(4); U.S. MODEL TREATY, *supra* note 41, art. 12(3).

Treaty law defines term "royalties" as "payments of any kind received as consideration for the use of, or the right to use, any copyright." OECD MODEL TREATY, *supra* note 41, art. 12(2); UN MODEL TREATY, *supra* note 13, art. 12(4); U.S. MODEL TREATY, *supra* note 41, art. 12(2). In some treaties, the definition of "royalties" also includes gain derived from alienation of such property to the extent that such gain is "contingent on the productivity, use or disposition of the property." U.S. MODEL TREATY, *supra* note 41, art. 12(2). Because most treaties do not clearly define "for the use of, or the right to use" a copyright, the parties may generally use domestic law to supply the definition. *See* OECD MODEL TREATY, *supra* note 41, art. 3(2); U.S. MODEL TREATY, *supra* note 41, art. 3(2); J. Clifton Fleming, Jr., *U.S. Taxation of Profits from Internet Software Sales—An Electronic Commerce Case Study*, 19 TAX NOTES INT'L 675 (1999).

[80] *See, e.g.*, Karrer v. United States, 152 F. Supp. 66 (Ct. Cl. 1957) (characterizing an employee's rights to a percentage of the sales proceeds for a product he created as services income because the employee's rights to payments derives from services to his employer and not from any inventions that he owns); Boulez v. Comm'r, 83 T.C. 584 (1984) (characterizing a transaction between a foreign conductor and a recording studio to make a recording under the conductor's direction for a percentage of the sales proceeds as the provision of services because no copyright existed; thus, the conductor, as the recipient of income, did not have a property right in the recordings).

[81] *See, e.g.*, *Boulez*, 83 T.C. at 584; Rev. Rul. 84-78, 1984-1 C.B. 173 (ruling that a U.S. company that transfers to a foreign company the rights to broadcast a U.S. boxing match in a foreign country involves a transfer of a property right, which is characterized as generating royalty income because less than the entire property right is transferred).

A property right may exist even where no formal property right exists if the recipient of income has sufficient risk and control to create property in substance. *See, e.g.*, Rev. Rul. 74-555, 1974-2 C.B. 202.

Under current case law, determining whether a cloud customer acquires any property rights generally requires an analysis of risk and control.[82] Specifically, if the recipient of income has a substantial amount of risk regarding the receipt of income and retains control over how the transaction is carried out, it is treated as holding the property rights.[83] As discussed above, in a typical SaaS transaction, the cloud vendor—the recipient of income—bears the risk of loss and retains control over the software, applications, and underlying infrastructure. Thus, the cloud vendor is not generating income from the transfer of any property rights because the customer does not obtain any formal or informal property rights in the software or the infrastructure used in connection with the SaaS transaction.

The Code also sets forth a nonexclusive list of six factors that differentiates between characterization of an arrangement as a lease and the provision of services, which further supports characterizing a typical cloud computing arrangement as the provision of services.[84] These factors include a determination of who has physical possession, control, and economic or possessory interest in the property, whether there is a substantial risk of nonperformance or concurrent use, and whether the total contract price substantially exceeds the rental value of the property for the contract period.[85]

Consider the application of these factors to Developer in our hypothetical cloud transaction. Developer's customers never obtain physical possession of the software and do not have control over access to the software. The agreement between Developer and its customers also indicates that customers do not have any economic or possessory interest in the program. The contract specifically states that the customers have no right to possession and the customers never obtain possession of the software hosted in the cloud. Additionally, the customer is not responsible for any maintenance costs or any risk of loss associated with the software and does not obtain any derivative rights. These features support a finding that the customer lacks any significant economic interest in the program.

Furthermore, the customer does not bear any risk of substantial nonperformance. Instead, Developer bears the risk of substantially diminished receipts if there is nonperformance under the contract because it is responsible for maintaining the software and the corresponding hardware. If the software malfunctions or the server hosting the software and data fails, Developer bears the costs because it has not satisfied its contract obligations. Developer also uses the program and its infrastructure concurrently to provide significant services to entities unrelated to a particular customer, which indicates that customers do not have exclusive access to Developer's software and hardware.

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[82] *See, e.g.*, Rev. Rul. 74-555, 1974-2 C.B. 202.

[83] *See id.*

[84] *See* I.R.C. § 7701(e) (2012).

[85] *Id.*

Finally, the contract price likely substantially exceeds the rental value of the property for the contract period. As a result, if the software regulations do not govern these activities, Developer's cloud computing transactions will likely be characterized as the performance of services generating service income rather than rental or royalty income.

Unfortunately, existing law does not adequately address whether the software regulations apply to cloud software subscriptions. Therefore, it is unclear whether cloud income should be characterized under the rules set forth in the software regulations or under traditional characterization principles. Because these rules characterize cloud computing income differently, the amount of the cloud vendor's income they source to the United States will vary depending on how the transaction is characterized. This variance affects whether the cloud transaction results in new or additional income taxes for the cloud vendor, whether any income generated by the transaction is subject to a U.S. withholding tax, and whether a treaty can minimize the cloud vendor's U.S. tax liability.

3. Classification Under Software Regulations and Traditional Principles

Alternatively, the software regulations may apply to only a portion of the cloud computing transaction. This may occur if the transaction involves both a transfer of a computer program and the provision of services, and neither component is considered de minimis relative to the overall transaction.[86]

If the IRS interprets the law in this manner, it is necessary to bifurcate the income generated by the cloud computing transaction into its separate components. As discussed above, the software regulations may treat the online access to the software as the transfer of a copyright right in a computer program or as the transfer of a copyrighted article. This means that a portion of the income that the cloud computing transaction generates would be either royalty or rental income. The other services a cloud vendor provides, such as maintaining the cloud infrastructure, updating the software, providing database access, programming, and providing other technical support, do not fall within the scope of the software regulations. Traditional characterization principles would likely characterize these services as services income. Therefore, the cloud-related income would need to be bifurcated into (1) rental or royalty income, and (2) services income. The software regulations, however, do not provide rules for allocating income arising from mixed transactions. Instead, the allocation of the income to its separate components falls under other Code sections.[87]

Pursuant to these other provisions of the Code, bifurcation of a transaction into its separate components is permissible as long as one characteristic is not predominant.[88] However, several issues arise in determining whether and how to allocate a monthly subscription fee into its separate components. First, it is unclear whether the software regulations cover database warehousing that a cloud service provider, such as Developer, provides. A database warehouse is a centralized repository of data that is generated by extracting and integrating data from disparate data sources.[89] It is generally used for reporting and data analysis.[90] A database only falls within the definition of computer program for purposes of the software regulations if the database is "incidental to the operation of the computer program."[91] Therefore, in some cases, the software regulations may characterize this service as the lease or license of intangible property. In other cases, traditional characterization principles may characterize this service as the provision of services.

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[86] *See* Treas. Reg. § 1.861-18(b)(2) (1998); T.D. 8785, 1998-42 I.R.B. 5.

[87] *See* 63 FR 52971-01, at 52976.

Second, it is unclear whether the services that Developer provides, which are not part of the computer program transfer, are de minimis relative to the overall transaction. Whether or not a transaction is de minimis depends on the surrounding facts and circumstances.[92] This determination is critical because unbundling is required only when the separate components are not de minimis.[93]

Finally, if unbundling of the transaction is necessary, existing law is also unclear on how to allocate the subscription fee among the different components of the transaction.[94] Risk and control may support a greater allocation to the services aspect of the transaction in circumstances where the cloud vendor has a greater risk of loss and control over any property rights. Moreover, in cases where the parties stipulate in the contract the allocation of the monthly subscription fee among the different services, this allocation may serve as the basis for bifurcating the transaction. But making the allocation on this basis may lead to arbitrary results that will be difficult for the IRS to challenge.

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[88] *See, e.g.*, Tidewater Inc. v. United States, 565 F.3d 299 (5th Cir. 2009) (characterizing a transaction as a lease based on the predominant character of the transaction even though the transaction had attributes of both a lease and a service); Garcia v. Comm'r, 140 T.C. 141 (2013) (bifurcating a golfer's endorsement income into royalty income and services income); Goosen v. Comm'r, 136 T.C. 547 (2011) (characterizing the income a professional golfer received pursuant to worldwide endorsement agreements with various sponsors as both royalty income—generated by the golfer licensing his image in exchange for endorsement fees—and personal services); Kramer v. Comm'r, 80 T.C. 768 (1983) (characterizing a transaction in which a tennis player both allows a company to produce a signature line of tennis rackets using his name and agrees to use his best efforts to promote the products in exchange for a percentage of net income as partially royalty income and partially compensation for services).

[89] CCH INC., *Legal Protection of Databases*, *in* INTERNATIONAL ENCYCLOPAEDIA OF LAWS: CYBER LAW (2012), *available at* 2014 WL 2514168.

[90] *Id.*

[91] *See* Treas. Reg. § 1.861-18(a)(3).

[92] *Id.* § 1.861-18(b)(2).

[93] *Id.*

[94] *See, e.g.*, Goosen v. Comm'r, 136 T.C. 547 (2011) (upholding the taxpayer's characterization of his income as 50 percent royalties and 50 percent personal services); Kramer v. Comm'r, 80 T.C. 768 (1983) (bifurcating the transaction into 30 percent services income and 70 percent royalty income, but doing so on a relatively arbitrary basis).

In summary, it is possible that existing law will characterize a cloud vendor's income as rental, royalty, or services income, or some combination of the foregoing. The ultimate characterization will depend in large part on whether the taxing authorities determine that the cloud computing transaction involves a "transfer" of a computer program. If the transaction involves such a transfer, existing law will likely characterize all or a portion of the transaction as rental or royalty income. If the transaction does not involve a "transfer" of a computer program, existing law will likely characterize the entire transaction as services income under traditional characterization principles.

B. Sourcing Cloud-Related Income

A taxpayer's ultimate tax liability in a particular jurisdiction significantly depends on the source of the income generated by cross-border activities. Despite the significant tax implications that arise from the source of a stream of income, it is not clear when an international cloud computing transaction generates U.S. source income. Depending on how the transaction is characterized and how (or if) the transaction is bifurcated among its different components, sourcing cloud-related income can lead to different results.

This Section illustrates that several plausible alternatives exist for how the current sourcing rules apply to cloud-related income. Specifically, it is possible that cloud-related income is sourced to one of three locations: (1) the location(s) of the cloud customer, (2) the location(s) of the server(s), or (3) the location(s) of the cloud vendor's key personnel. Each alternative creates administrative difficulties for taxpayers and taxing authorities.

1. Source if Royalty or Rental Income

Current law applies the same sourcing rules for rental and royalty income. If income that a cloud computing transaction generates is rental or royalty income, current law sources such income to the place where the leased property or the intellectual property is located.[95] The location of the property is generally equivalent to the place where the property is used.[96] Generally, for royalty income, the "place of use" is the place where the intangible derives its legal protection.[97] These rules may arguably source cloud computing income either to (1) the place(s) where the customer is located, or (2) the place where the cloud vendor's servers are located. Given the nature of cloud computing, the location of the server that hosts the software or application will not necessarily be in the same jurisdiction as the location of the customer. Thus, different tax consequences may result depending on which approach the IRS determines to be the correct application of the sourcing rules. Current law does not adequately address which of these locations represents the correct source of the income.

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[95] *See* I.R.C. §§ 861(a)(4); 862(a)(4) (2012).

[96] *See* I.R.C. § 861(a)(4), 862(a)(4).

[97] *See* SDI Netherlands B.V. v. Comm'r, 107 T.C. 161, 175–76 (1996); Rev. Rul. 68-443, 1968-2 C.B. 304.

One possible "place of use" in the cloud computing context under the existing source rules is the customer's location at the time the customer accesses the software and other cloud computing services online.[98] In a traditional software transaction, the place of use was typically the jurisdiction in which the customer downloaded the program, which was generally the same as the location of the customer when he or she used the program. From the customer's perspective, this place of use has not changed in a cloud computing transaction. The customer still benefits from using the computer program and the applications in the same manner as before on his or her computing device.

Although existing law may source cloud-related income to the customer's location, this approach gives rise to tax compliance issues due to the virtual and location-independent nature of cloud computing. Specifically, the source of cloud-related income may change on a constant basis because one user can access the software and applications from anywhere in the world. Multiple users within the same organization can also simultaneously access the software from different jurisdictions. Thus, the challenges in tracking the customer's location and acquiring the information from a cloud vendor will likely exacerbate administrative difficulties in determining from which jurisdiction a customer is accessing and using the software.[99]

Moreover, the cloud-related income will likely need to be allocated among multiple jurisdictions. Existing law does not provide much guidance as to what basis to use in allocating the income among the different jurisdictions. The taxpayer generally has the burden of proving a method of apportionment based on the facts that bears a reasonable relationship to the income expected to be derived from the license.[100] If the taxpayer is unable to satisfy this substantial burden of proof, the law will likely source all of the royalty income to the United States.[101] However, if the taxpayer specifically allocates the royalty income among the different jurisdictions in the customer agreement, the IRS will likely respect the allocation.[102] In the cloud computing context, this may be difficult to do because the vendor is unlikely to know from which jurisdictions the customer plans to access the software, and the customer also may not know upfront where they will use the program.

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[98] *See* I.R.C. §§ 861(a)(4), 862(a)(4).

[99] *See* Cara Griffith, *Navigating the Changing Conditions of Operating in the Cloud*, STATE TAX TODAY 224 (Nov. 15, 2010).

[100] Peter H. Blessing, Foreign Income: Source of Income Rules, 905 Tax Mgmt. Port. (BNA) V-C3 (1993).

[101] *Id.*

[102] *Id.*

In addition, unlike in the context of traditional electronic or physical distribution of software, the jurisdiction that provides legal protection for the use of the computer program in a cloud computing context is not necessarily the same as the place where the customer is actually using the program. This further exacerbates the difficulties in pinpointing the customer's location. Traditionally, the place where a customer used computer software was the same place where the developer obtained protection under copyright law.[103] It was necessary for the developer to obtain copyright protection to prevent the customer from reproducing, distributing, or preparing derivative works of the computer program because under the old method of distributing software, the customer obtained either a physical or electronic copy of the computer program. However, with cloud computing, a customer's only access to the program is on the cloud. The customer does not acquire a copy of the source code that it could reproduce or distribute. Therefore, a developer may not need to obtain any copyright protection in the customer's country since there is no risk of unlawful copying or distribution of the program.

In summary, one plausible interpretation of current law is that the "place of use" of the cloud computing services is the location of the customer. But due to the nature of cloud computing, a customer's location may change frequently, the location can be difficult to determine accurately, and there is no easy way to allocate the income among the different jurisdictions in which the customer is located. Thus, sourcing cloud-related income to the customer's location creates many administrative challenges for taxpayers and taxing authorities.

On an alternative interpretation of current law, the "place of use" might instead be the location of the cloud vendor's server. Technically, in a cloud computing context, the customer uses software that is installed on servers, rather than software installed on individual computers. Whenever a customer accesses the software, the customer is essentially accessing the server through the Internet. Thus, traditional rules may source cloud-related income to the location of the servers.[104]

Sourcing cloud-related income to the location of the server creates new questions for taxpayers and taxing authorities. For instance, what is the source of the income if the software is being used on multiple servers? This situation often arises in the cloud computing context because cloud service providers use resource pooling to transmit the customer's request to access data and software among various servers to balance the capacity load.[105] Service providers often also duplicate the software and accompanying data onto multiple servers for data recovery purposes.[106] Therefore, a customer may access software and data installed on servers in multiple locations. This situation also raises the question of whether and how the law should allocate income among the different jurisdictions. Traditional international tax law concepts do not provide answers to these questions.

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[103] *See* SDI Netherlands B.V. v. Comm'r, 107 T.C. 161, 175–76 (1996); Rev. Rul. 68-443, 1968-2 C.B. 304.

[104] *See* I.R.C. §§ 861(a)(4), 862(a)(4) (2012).

[105] *See* MELL & GRANCE, *supra* note 1, at 2.

2. Source if Services Income

If the law characterizes income arising from the cloud computing transaction as services income, a different sourcing rule applies and different tax consequences may arise. In general, the Code sources services income to the place where services are performed.[107] Many novel issues arise in applying this sourcing rule to cloud computing transactions because the rule is based on the notion that the location of the person performing the services is independently and substantially significant.[108] But cloud computing undermines the relationship between the service provider's location and the consumer's location. Hence, it is often difficult to determine where services are economically performed under a cloud business model.[109]

As an example, consider Developer's cloud business model and the possible location where services are performed. As with the traditional model of distributing software electronically, one possibility is that the source of the cloud computing services is the location of personnel providing key services. If Developer has personnel that ensure access to the software and provide key services—and such personnel are located in the United States—then the services income would have a U.S source unless it falls within the de minimis exception. Given the virtual nature of cloud computing, businesses can provide many of these cloud services remotely. Thus, even without a de minimis exception, a cloud service provider could use this sourcing rule to its advantage to avoid U.S. tax liability by moving its key employees abroad to a low-tax jurisdiction.

Alternatively, existing law may instead treat the physical location of the hardware that deploys the software, such as servers and other computer infrastructure, as the place of performance. The IRS and courts might take this position based on the holding in the seminal case of *Piedras Negras Broadcasting Co. v. Commissioner*.[110] In *Piedras Negras*, the Tax Court sourced advertising income received from a foreign corporation operating a radio broadcasting business outside the United States abroad to the location of its studio, broadcasting station, and personnel, even though the majority of its advertising income came from U.S. advertisers.[111] In other words, in sourcing the income the court considered the location of the capital and labor as the location where the income-producing services were rendered. It disregarded the location of the company's customers—the advertising clients.

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[106] Soghoian, *supra* note 14, at 366.

[107] *See* I.R.C. §§ 861(a)(3), 862(a)(3) (2012). The same sourcing rule applies under most U.S. bilateral tax treaties. *See* OECD MODEL TREATY, *supra* note 41, art. 15(1); UN MODEL TREATY, *supra* note 13, art. 15(1); U.S. MODEL TREATY, *supra* note 41, art. 14(1).

[108] TREASURY WHITE PAPER, *supra* note 39, at 33.

[109] *See id.*

[110] *See* Piedras Negras Broad. Co. v. Comm'r, 43 B.T.A. 297 (1941), *aff'd*, 127 F.2d 260 (5th Cir. 1942); *see also Compliance Complexity*, *supra* note 8, at 31.

Similarly, in the cloud computing context, the IRS and courts might source cloud computing income to the United States if the vendor hosts the software on servers located in the United States because the vendor transmits its revenue-generating products and services through the U.S. servers.[112] This argument is particularly persuasive when services are automated—as are many cloud offerings—because without employees, the vendor renders services primarily where the servers are located.[113] This presents a new place to source revenue that differs from the traditional software distribution model where vendors did not host the software on their computer hardware and infrastructure. Instead, under the traditional model, customers installed the software on their own computers and servers. However, given the lack of guidance on this issue, it is uncertain whether the IRS and courts will take this position.

Moreover, issues also arise when a service provider uses multiple servers located in multiple jurisdictions to transact cloud computing services with a single customer.[114] This common occurrence raises the question of whether and on what basis the law should allocate income among the different jurisdictions. Sourcing cloud-related income to the server location also creates administrative difficulties in tracking transactions that occur on multiple servers. The mobility of servers also exposes this sourcing rule to potential abuse because it enables taxpayers to decide where to source income simply by moving the location of their servers to that jurisdiction.

C. Taxing Cloud-Related Business Profits

A taxable presence in the United States is a threshold requirement for the United States to tax the active business income a foreign cloud service provider earns.[115] A U.S. taxable presence means that the foreign cloud service provider either (1) operates a U.S. trade or business if no treaty applies, or (2) has a permanent establishment in the United States if a treaty applies.[116] If a U.S. taxable presence exists, then the United States has authority to tax the active business income of the foreign cloud vendor to the extent such income is effectively connected to a U.S. trade or business or attributable to a permanent establishment in the United States.[117] This determination depends to a large extent on the character and source of the cloud-related income.

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[111] *Piedras Negras*, 43 B.T.A. at 297.

[112] *See id.*; *see also Compliance Complexity*, *supra* note 8, at 31.

[113] *See Piedras Negras*, 43 B.T.A. at 297; *see also Compliance Complexity*, *supra* note 8, at 31.

[114] *See* Jacobs & Miller, *supra* note 14.

[115] *See* I.R.C. § 871(b) (West 2014); I.R.C. § 882 (2012).

[116] *See* I.R.C. §§ 871(b); I.R.C. § 882; OECD MODEL TREATY, *supra* note 41, art. 5; UN MODEL TREATY, *supra* note 13, art. 5; U.S. MODEL TREATY, *supra* note 41, art. 5.

This Section shows that current law may deem a U.S. server used for cloud computing purposes to create a taxable presence in the United States as long as the server does not solely function as a mirror server.[118] However, if the cloud vendor does not locate any servers or dependent agents in the United States, then the cloud vendor's active income will likely not be subject to U.S. taxation, even if all of its customers are in the United States. As a result, by conducting its business in the cloud, a cloud vendor potentially may engage in extensive and significant transactions with U.S. customers without creating a taxable presence in the United States.

1. U.S. Trade or Business

If no tax treaty exists between the United States and the country where the foreign cloud service provider resides, domestic tax law governs whether the foreign service provider has a taxable nexus in the United States. This situation often occurs when a cloud vendor is organized in a tax haven. Under U.S. tax law, a foreign service provider has a taxable nexus in the United States if the service provider is engaged in a trade or business in the United States, either directly or through an agent.[119] The IRS makes this determination on a facts and circumstances basis.[120]

In general, a U.S. trade or business exists if two requirements are met. First, the foreign person or its agents must be engaged in activities for the production of income that are "considerable, continuous and regular."[121] Second, a significant part of the business activities must occur within the United States.[122]

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[117] *See* I.R.C. §§ 871(b); I.R.C. § 882; OECD MODEL TREATY, *supra* note 41, art. 7; UN MODEL TREATY, *supra* note 41, art. 7; U.S. MODEL TREATY, *supra* note 41, art. 7.

[118] *See* text accompanying *infra* note 140.

[119] I.R.C. §§ 871(b); I.R.C. § 882. *See e.g.*, Handfield v. Comm'r, 23 T.C. 633 (1955) (treating a foreign person who sells goods in the United States through a U.S. agent as engaged in a U.S. trade or business); Rev. Rul. 70-424, 1970-2 C.B. 318 (treating a foreign person, who was conducting sales in the United States through a U.S. company, as engaged in a trade or business in the United States).

[120] Treas. Reg. § 1.864-2(e) (1998); Rev. Rul. 88-3, 1988-1 C.B. 268. The statute and Treasury regulations do not clearly define a "trade or business within the United States." *See* I.R.C. § 864(b) (2012) (definition of "Trade or business within the United States"); Treas. Reg. § 1.864-2.

[121] *See* De Amodio v. Comm'r, 34 T.C. 894, 905 (1960), *aff'd*, 299 F.2d 623 (3rd Cir. 1962); Cont'l Trading Inc. v. Comm'r, 16 T.C.M. (CCH) 724 (T.C. 1957), *aff'd*, 265 F.2d 40 (9th Cir. 1959).

The determination of whether the activities of a foreign person are considerable, continuous, and regular involves both a quantitative and qualitative analysis. *See* Scottish Am. Inv. Co. v. Comm'r, 12 T.C. 49 (1949); European Naval Stores Co., S.A. v. Comm'r, 11 T.C. 127 (1948).

[122] *See* I.R.C. § 871(b); I.R.C. § 882.

In most cases, a cloud service provider's activities will rise to the level of a trade or business as defined in the above authorities. Consider Developer who regularly and continuously provides customers with access to software, data storage, and technical support services in connection with its cloud computing business. These activities are considerable and extensive, and they constitute an important part of Developer's principal business of cloud computing. Therefore, Developer is clearly engaged in a trade or business.

The more challenging question is whether this trade or business occurs within the United States. Domestic law does not require a fixed place of business and tends to focus on where the business activities occur. Given the nature of cloud computing services, it is especially difficult to pinpoint the exact location of the business activities. Cloud computing transactions occur almost entirely in the virtual world and permit a foreign person to engage in extensive transactions with U.S. customers without physically entering the United States.[123] Therefore, these transactions often do not involve physical presence in the same sense as traditional transactions, which makes it difficult to apply existing taxable nexus principles.

Without more specific guidance, it is difficult to determine when a U.S. trade or business arises in the cloud computing context. If the foreign cloud vendor's only contact with the United States is providing cloud computing services to its U.S. customers and it locates all of its employees, servers, and other infrastructure outside of the United States, it is likely that the cloud vendor will not have a U.S. trade or business under current law. The mere presence of customers in the United States is not enough to cause Developer to be engaged in business in the United States.[124] Thus, the cloud vendor could potentially engage in extensive and significant transactions with U.S. customers without creating a U.S. trade or business.

However, if a foreign cloud service provider, such as Developer, limits its presence in the United States to the use of a U.S. server, it is unclear whether U.S. taxing authorities will consider the cloud computing activities that take place through the server as resulting in a U.S. trade or business. If taxing authorities characterize the transaction as rental or royalty income arising from the lease or license of a computer program, I argue that the server is analogous to the location of the leased property or the place of use of intellectual property. Accordingly, the server may represent a significant element in the creation of this rental or royalty income and give rise to a U.S. trade or business.

If taxing authorities instead characterize the cloud computing transaction as the provision of services, and the software and servers are fully automated and require very minimal maintenance by individuals, they may also argue that the services are performed at the location of the servers.[125] Under current law, services that are substantial and performed regularly and continuously generally constitute a U.S. trade or business.[126] However, the Treasury, which considers the possibility of taking into account the location of the server for purposes of determining whether a U.S. trade or business exists, does not reach a definitive conclusion in this regard.[127] Thus, it is unclear whether the taxing authorities would characterize a cloud computing transaction as a U.S. trade or business when the foreign vendor's only physical contact with the United States is the existence of a server. This uncertainty puts a foreign cloud vendor in a difficult position because its ultimate tax liability and filing obligations depend on whether or not it has a taxable presence in the United States.[128]

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[123] TREASURY WHITE PAPER, *supra* note 39, at 25.

[124] *See* Piedras Negras Broad. Co. v. Comm'r, 43 B.T.A. 297 (1941), *aff'd*, 127 F.2d 260 (5th Cir. 1942).

Alternatively, taxing authorities may treat the cloud service provider as engaged in a U.S. trade or business through the activities of its agents.[129] Returning again to our hypothetical, current law would attribute activities of another person to Developer if (1) such person engages in regular, continuous, and substantial activities within the United States, and (2) an agency relationship exists between Developer and such person.[130] Contrary to the permanent establishment principles discussed below, it does not matter whether the agent is dependent or independent.[131] Also, current law does not require the agent to have a fixed place of business in the United States to give rise to a U.S. trade or business by attribution.[132] For instance, if Developer hires employees located in the United States to maintain the server and infrastructure and to provide other technical services, the authorities will probably consider Developer to be engaged in a trade or business in the United States.[133] These activities constitute a significant component of the cloud computing business and thereby satisfy the "regular, continuous and substantial" threshold requirement. These activities also satisfy the location requirement because persons within the United States perform the services. In addition, as Developer's employees, an agency relationship clearly exists between the service providers and the cloud vendor.

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[125] *Compliance Complexity*, *supra* note 8, at 31.

[126] *See* I.R.C. § 864(b) (2012); Pinchot v. Comm'r, 113 F.2d 718, 719 (2d Cir. 1940); *Compliance Complexity*, *supra* note 8, at 31.

[127] Specifically, the Treasury Paper notes the following: "It is possible that such a server, or similar equipment, is not a sufficiently significant element in the creation of certain types of income to be taken into account for purposes of determining whether a U.S. trade or business exists. It is also possible that if the existence of a U.S.-based server is taken into account for this purpose, foreign persons will simply utilize servers located outside the United States since the server's location is irrelevant." TREASURY WHITE PAPER, *supra* note 39, at 25.

[128] *Compliance Complexity*, *supra* note 8, at 31.

[129] *See, e.g.*, Handfield v. Comm'r, 23 T.C. 633 (1955); Rev. Rul. 70-424, 1970-2 C.B. 318.

[130] *See* Linen Thread Co. v. Comm'r, 14 T.C. 725 (1950); *Handfield*, 23 T.C. at 638; Rev. Rul. 70-424, 1970-2 C.B. 318.

[131] *See Handfield*, 23 T.C. at 633 (holding that a foreign corporation was engaged in a U.S. trade or business because of the activities of its U.S. agent, without discussing whether such agent acted in a dependent or independent capacity, thereby implying that the distinction is irrelevant); Rev. Rul. 70-424, 1970-2 C.B. 318 (holding that a foreign corporation conducted its activities in the United States through its agent, without differentiating whether the agent was a dependent or independent agent).

[132] *See Handfield*, 23 T.C. at 638.

[133] *See* TREASURY WHITE PAPER, *supra* note 39, at 25–26.

Similarly, if the server is not fully automated and Developer hires IT personnel located in the United States to maintain the server, then the IRS might also treat Developer as engaged in a U.S. trade or business through attribution of the personnel's activities.[134] The IT personnel's activities may give rise to a U.S. trade or business; after all, maintaining the server on which Developer hosts its software, stores customers' data, performs updates, and provides computing power is significant to Developer's cloud computing business. Additionally, the personnel will perform these services on a regular and continuous basis. Moreover, Developer will likely stand in an agency relationship with the IT personnel, regardless of whether the IT personnel are employees or a third party because Developer bears both the risk and control over its servers.[135] Although the ultimate result will depend on the specific terms of the agreement between Developer and its IT personnel, it is plausible that the taxing authorities might conclude that Developer engaged in a U.S. trade or business under these circumstances.

A different result may arise if (1) Developer leases, rather than owns, servers in the United States, (2) the server, in itself, is not treated as creating a U.S. trade or business, and (3) the only activities in the United States are the services performed by the lessor of the U.S. servers. Under these circumstances, the activities of the lessor of the servers are not likely to be attributed to Developer. The lessor will ordinarily have control over its servers, be liable for maintaining the servers, and suffer any risk of loss from damage or nonperformance of the servers. Therefore, even though the lessor's activities may be significant in relation to Developer's cloud computing business and continuous enough to satisfy the U.S. trade or business threshold test, there is likely no agency relationship between Developer and the lessor of the U.S. server. Hence, under these conditions, it is unlikely that the taxing authorities will conclude that the foreign service provider has a U.S. trade or business. However, due to the limited guidance in this area, this conclusion is once again not free from doubt.[136]

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[134] *See, e.g.*, Investors' Mortgage Security Co. v. Comm'r, T.C.M. (P-H) P 45022 (T.C. 1945) (holding that a foreign corporation was engaged in a U.S. trade or business as a result of activities by agents of a real estate management firm that leased, managed, and operated real property that was owned by the foreign corporation).

[135] *See Handfield*, 23 T.C. at 633; Rev. Rul. 70-424, 1970-2 C.B. 318.

[136] Treasury has commented that in the electronic commerce context in general there is likely no agency relationship between a foreign person that has a website on the Internet and a U.S. telecommunications service provider or U.S. Internet service provider. TREASURY WHITE PAPER, *supra* note 39, at 27. Despite this likely result, Treasury has suggested that it may be necessary to

This lack of guidance exposes cloud vendors to significant liability risks. In particular, the cloud vendor's U.S. tax liability as well as its filing and reporting obligations will differ depending on whether or not it has a trade or business in the United States.[137] For instance, if the cloud vendor's activities result in a taxable nexus, current law will subject the cloud vendor's income that is effectively connected with that U.S. trade or business to U.S. taxation on a net basis at the ordinary graduated tax rates generally applicable to U.S. persons.[138] The cloud vendor must also file a U.S. tax return.[139] If the cloud vendor fails to file the appropriate return and report the required information, it may be subject to a monetary penalty. The cloud vendor may also lose the benefit of any deductions or credits otherwise allowed to it, thereby increasing its U.S. tax liability.[140]

2. Income Effectively Connected with a U.S. Trade or Business

If the foreign cloud service provider does not have a U.S. trade or business, the United States generally will not have taxing authority over the business profits generated by the cloud computing business.[141] However, if authorities conclude that a foreign cloud service provider has engaged in a U.S. trade or business, the United States will have taxing jurisdiction over the service provider's net business income to the extent that such income is effectively connected with the U.S. trade or business.[142] This net income will be subject to U.S. tax at the ordinary graduated tax rates generally applicable to U.S. persons.[143] Additionally, the cloud vendor will also have U.S. tax return filing and reporting obligations.[144]

Income effectively connected with a U.S. trade or business includes certain FDAP income, portfolio interest, and gain or loss from the sale or exchange of capital assets that have a connection to the U.S. trade or business.[145] To constitute "effectively connected income," such income generally must be U.S. source income and must satisfy either the asset-use test

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further clarify the applicable principles in this area and to seek to create an international consensus on this issue. *Id.*

[137] *See* I.R.C. § 6038C (2012); Treas. Reg. § 1.6012-2(g)(1) (2010); *Compliance Complexity*, *supra* note 8, at 30.

[138] I.R.C. § 871(b) (West 2014); I.R.C. § 882 (2012).

[139] Treas. Reg. § 1.6012-2(g)(1).

[140] *See* Treas. Reg. § 1.882-4(a)(2) (2003).

[141] *See* I.R.C. § 864(c)(1)(B) (2012) (providing that, except in limited circumstances, the income of a foreign person not engaged in a U.S. trade or business will not be treated as effectively connected income).

[142] *See* I.R.C. § 871(b); I.R.C. § 882. A foreign person is entitled to offset any gross income effectively connected with a U.S. trade or business by allowable deductions that are appropriately allocated and apportioned to such income. I.R.C. §§ 861(b), 862(b), 863(a) (2012); Treas. Reg. § 1.861-8 (2013); Treas. Reg. § 1.861-8T (2009).

[143] I.R.C. § 871(b); I.R.C. § 882.

[144] *See* Treas. Reg. § 1.6012-2(g)(1) (2010).

[145] *See* I.R.C. § 864(c)(2) (2012).

or the business-activities test.[146] Under the asset-use test, U.S. source income, gain, or loss is effectively connected income if derived from assets used in the conduct of the U.S. trade or business.[147] Under the business-activities test, such income is effectively connected if the activities of the U.S. trade or business are a material factor in the realization of the income, gain, or loss.[148] In addition, income effectively connected with a U.S. trade or business also includes all other income, gain, or loss from sources within the United States.[149]

Let us return to our hypothetical Developer. If the tax authorities characterize cloud-related income as rental or royalty income, which falls within the meaning of FDAP income,[150] the income will likely be treated as effectively connected with Developer's U.S. trade or business. In particular, if the authorities conclude that Developer has a U.S. trade or business because of its U.S. servers or its agents' activities in the United States, the rental or royalty income that Developer generates from its cloud computing services will likely satisfy the business-activities test.[151] The activities of Developer's servers and agents could be a material factor in the realization of the income generated by the transaction because it comprises an essential and significant part of Developer's cloud business model. Consequently, to the extent that such income is U.S. source, the income derived from the cloud computing business will be effectively connected with the conduct of Developer's U.S. trade or business. However, because it is not entirely clear whether and to what extent current law sources the cloud-related income to the United States,[152] a foreign cloud service provider will often not know whether it is subject to the U.S. net taxing regime on its cloud computing income and whether it has any filing obligations in the United States.

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[146] *See id.* Certain foreign source income can also be effectively connected income. *See* I.R.C. § 864(c)(4)(B) (2012). In addition, any other income that is not FDAP income, portfolio income, or gain or loss from the sale or exchange of capital assets and that has a U.S. source is also treated as effectively connected with a U.S. trade or business even if the income does not satisfy the asset-use or business-activities test. *Id.* § 864(c)(3). This is often referred to as the "residual force of attraction principle." AVI-YONAH, RING & BRAUNER, *supra* note 42, at 181–82. Therefore, if Developer has an unrelated U.S. trade or business and Developer's cloud computing business generates this type of income, the cloud-related income will also be treated as effectively connected with its U.S. trade or business to the extent the income is sourced to the United States. This would result even if the cloud-related income has no factual connection to Developer's U.S. trade or business.

[147] I.R.C. § 864(c)(2)(A) (2012).

[148] *Id.* § 864(c)(2)(B).

[149] *Id.* § 864(c)(3).

[150] See discussion *infra* Part III.D.

[151] The asset-use test is likely not relevant to the rental or royalty income generated. The asset-use test ordinarily applies in making a determination with respect to income, gain, or loss of a passive type, where the trade or business activities do not give rise directly to the realization of the income, gain, or loss. Treas. Reg. § 1.864-4(c)(2)(i) (2005). In the instant case, if the authorities characterize the income generated by the cloud computing business as either rental or royalty income, the cloud computing business activities are directly giving rise to the realization of this type of income. Such income is not of a passive nature under these circumstances.

[152] See discussion *supra* Part II.B.

In certain limited circumstances, even if the cloud-related income that a foreign provider generates is not U.S. source, rental, or royalty income, the law may nevertheless treat it as effectively connected with a U.S. trade or business.[153] For the law to treat such foreign source income as effectively connected, several conditions must be met: (1) the foreign cloud service provider must be engaged in a U.S. trade or business, (2) the provider must have an office or other fixed place of business in the United States, and (3) the rental or royalty income must be attributable to that office or fixed place of business.[154] In addition, (4) the foreign source income must not consist of dividends, interest, or royalties paid by a foreign corporation in which the cloud service provider owns more than 50 percent of the voting power, and (5) the foreign source income must not be subpart F income.[155] When these conditions exist, the law may subject any foreign source rental or royalty income of a foreign cloud service provider that is engaged in a U.S. trade or business to the U.S. taxing jurisdiction. Because it is unclear if a server can be a fixed place of business under current law,[156] it is also unclear when such foreign source cloud income can constitute effectively connected income.

Alternatively, if the tax authorities characterize cloud-related income as services income, the income will likely be treated as effectively connected with the conduct of a U.S. trade or business as long as it is sourced to the United States.[157] This type of services income does not constitute FDAP income and, therefore, does not need to satisfy any additional tests to be treated as effectively connected income.

3. Permanent Establishment

If an income tax treaty exists between the United States and the foreign provider's country of residence, the United States generally will only have taxing jurisdiction over the provider's business profits if the provider has a permanent establishment in the United States and such profits are attributable to the permanent establishment.[158] In the cloud computing context, a permanent establishment will exist in the United States where the cloud vendor has a sufficient geographical and nontemporary connection to the United States. Specifically, under both the U.S. Model Treaty and OECD Model Treaty, a

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[153] *See* I.R.C. § 864(c)(4)(B). This rule encompasses not only foreign source rents and royalties, but also foreign source dividends and interest from an active business and certain foreign source sales of inventory property through a U.S. office. *Id.*

[154] *Id.*

[155] *Id.* § 864(c)(4)(D). Subpart F income generally refers to certain income generated by a foreign corporation that is controlled by U.S. shareholders. *See* I.R.C. § 952 (2012). See Part II.E, *infra*, for a further discussion of subpart F income.

[156] See discussion *supra* Part II.C.

[157] *See* I.R.C. § 864(c)(3).

[158] *See* OECD MODEL TREATY, *supra* note 41, arts. 5, 7; UN MODEL TREATY, *supra* note 13, arts. 5, 7; U.S. MODEL TREATY, *supra* note 41, arts. 5, 7.

U.S. permanent establishment exists if a foreign cloud service provider either has (1) a "fixed place of business" in the United States through which it wholly or partly conducts its cloud computing business or (2) a dependent agent with authority that the agent habitually exercises to conclude contracts that bind the cloud service provider in the United States.[159] The OECD is currently studying alternative methods under which a permanent establishment can be created in the context of the digital economy.[160] However, at this time, it appears that the OECD's base erosion and profit-shifting project is unlikely to endorse a digital permanent establishment.[161]

If the income tax treaty is based on the UN Model Treaty, another common tax treaty model, then a permanent establishment may also exist if the foreign cloud service provider furnishes services, through employees or other personnel, for a period that exceeds 183 days in any 12-month period. This is often referred to as a "service permanent establishment."[162] The OECD Commentary, but not the OECD Model Treaty itself, also provides for a service permanent establishment alternative.[163] Under the UN Model Treaty, a permanent establishment may exist if the foreign cloud vendor has a dependent agent that habitually maintains in the United States a stock of goods or merchandise from which they regularly deliver goods or merchandise on behalf of the cloud vendor, even if the agent does not have authority to conclude contracts on the cloud vendor's behalf.[164]

a. Fixed Place of Business

Based on the foregoing, if a foreign cloud service provider's only contact with the United States is providing cloud computing services to its U.S. customers and it locates all of its employees, servers, and other infrastructure outside of the United States, the cloud vendor likely has no fixed place of business in the United States. In this scenario, the United States will generally not have taxing jurisdiction over its business profits.[165] Even if the service provider hires independent contractors to perform services in the United States on its behalf, such services will not create a permanent establishment if the service provider does not have a fixed place of business in the United States.[166]

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[159] *See* OECD MODEL TREATY, *supra* note 41, arts. 1, 5, 6; U.S. MODEL TREATY, *supra* note 41, arts. 1, 5, 6. Specifically, a permanent establishment includes a place of management, a branch, an office, a factory, a workshop, and a place of extraction of natural resources. OECD MODEL TREATY, *supra* note 41, art. 5(2); U.S. MODEL TREATY, *supra* note 41, art. 5(2).

[160] *See* ADDRESSING BASE EROSION, *supra* note 6; OECD BEPS, *supra* note 6.

[161] *See* Jeremy Scott, *Digital Economy PE: Solution to Taxing Global Giants Like Google and Facebook?*, FORBES (Jan. 29, 2014, 12:06 PM), http://www.forbes.com/sites/taxanalysts/2014/01/29/digital-economy-pe-solution-to-taxing-global-giants-like-google-and-facebook; Lee A. Sheppard, *OECD BEPS Project Unlikely to Endorse Digital PE*, TAX ANALYSTS (Jan. 27, 2014), http://www.taxanalysts.com/www/features.nsf/Articles/D963F9B6F9F1E6F485257C6D006FD0EC?OpenDocument.

[162] *See* UN MODEL TREATY, *supra* note 13, art. 5(3)(b).

[163] *See* ORG. FOR ECON. CO-OPERATION & DEV., COMMENTARIES ON THE ARTICLES OF THE MODEL TAX CONVENTION, at art. 5 ¶¶ 42.21–42.47 (2010) [hereinafter OECD COMMENTARY], *available at* http://www.oecd.org/berlin/publikationen/43324465.pdf.

[164] UN MODEL TREATY, *supra* note 13, art. 5 (5)(b).

However, if a foreign cloud service provider owns or leases a U.S.-based server that it uses for its cloud computing business, it is possible that under existing law the server itself is enough to create a permanent establishment in the United States. Although no direct U.S. authority exists that considers whether a foreign person's activities on a server can create a permanent establishment, the OECD has published commentary on the OECD Model Tax Convention on Income and on Capital (OECD Commentary) that provides some guidance in this regard.[167] Pursuant to the OECD Commentary and traditional treaty principles, the servers can give rise to a permanent establishment if (1) the servers used by the cloud service provider constitute a "place of business" that is fixed, and (2) the functions undertaken through the server constitute "the carrying on of a business."[168] As I will argue below, most servers used for cloud computing purposes likely satisfy both of these requirements, thereby giving rise to a permanent establishment.

According to the OECD Commentary, equipment—and therefore servers—may constitute a "place of business" in the context of cloud computing transactions.[169] It does not matter whether the provider owns or leases the servers from a third party because the provision of space, which a company has at its disposal and uses for business activities, is sufficient to constitute a place of business.[170] In addition, if the servers are located in a specific geographical area for a sufficient period of time, the servers are likely a place of business that is fixed.[171] Hence, it is likely that many cloud service providers that use U.S. servers have a fixed place of business in the United States, thus meeting the first requirement for a permanent establishment under the OECD Commentary.

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[165] Even if the income tax treaty is modeled after the UN Model Treaty, these circumstances would likely not give rise to a service permanent establishment because the cloud provider has no employees or personnel in the United States who are providing the services.

[166] *See* U.S. MODEL TREATY, *supra* note 41, arts. 5(6), 14; *see, e.g.*, Comm'r v Consol. Premium Iron Ores, Ltd., 265 F.2d 320 (6th Cir. 1959) (holding that a Canadian corporation did not have a permanent establishment in the United States under the relevant treaty, because the corporation had no assets in the United States, conducted no business there, and had no officials there capable of binding the corporation to a contract).

[167] The OECD is an international organization entrusted with setting the standard for international tax treaties with the goal of minimizing international double taxation. These standards, which are set forth in the OECD Model Tax Convention on Income and Capital as well as the related commentary, form the basis of many bilateral tax treaties. With respect to electronic commerce issues, the OECD Commentary provides more guidance than the commentary on the U.S. Model Treaty. *See generally* OECD COMMENTARY, *supra* note 163.

However, Treasury has previously expressed its opinion on certain tax issues raised by electronic commerce in a report discussing the tax policy implications of electronic commerce. *See* TREASURY WHITE PAPER, *supra* note 39. In addition, the U.S. Advisory Commission has released a report recommending that Congress affirm support of the OECD framework principles for taxation of electronic commerce. ADVISORY COMMISSION ON ELECTRONIC COMMERCE, REPORT TO CONGRESS 42 (2000); *Compliance Complexity*, *supra* note 8, at 32. In light of these factors and given that the United States is a member of the OECD, Treasury may apply a similar set of rules in interpreting its treaties, although it is not entirely certain that the IRS will base its analysis on OECD guidelines. Nevertheless, the above analysis is based primarily on the guidance provided by the OECD rules and standards.

[168] *See* OECD MODEL TREATY, *supra* note 41, art. 5(1); U.S. MODEL TREATY, *supra* note 41, art. 5(1).

The more challenging question is whether the business of the cloud service provider is wholly or partly carried on at the location where the service provider has the server at its disposal. In general, the entrepreneur or the enterprise's personnel mainly conduct the business of an enterprise.[172] Additionally, the OECD Commentary treats a business as conducted at the location of the enterprise's equipment even if the enterprise conducts its business mainly through automatic equipment where the activities of personnel are restricted to setting up, operating, controlling, and maintaining such equipment.[173] In other words, for an enterprise to be treated as conducting its business at the location of the servers, no personnel are required to operate the servers or other equipment.[174] Rather, the enterprise that sets up the equipment generally must operate and maintain the equipment for its own account.[175] Accordingly, the tax authorities may treat a cloud service provider as conducting its cloud computing business through its U.S. servers regardless of whether it has any personnel located in the United States that manage the servers. Pursuant to the OECD Commentary, it will have a permanent establishment at the location of its servers under treaty law as long as it operates and maintains the servers for its own account.

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[169] *See* OECD COMMENTARY, *supra* note 163, art. 5(1), ¶ 2. The OECD Commentary also specifically provides that a server is a piece of equipment having a physical location, and such location may constitute a fixed place of business of the enterprise that operates that server. *Id.* art. 5, ¶¶ 42.2–42.3.

[170] *See id.* art. 5(1), ¶ 4. On the other hand, prior to cloud computing, most electronic commerce transactions most likely did not create a permanent establishment through the creation of a fixed place of business because the company often did not have the provision of space at its disposal. Specifically, a company that ran its business through a website often paid an Internet service provider to host the website. The disk space used to store the software and data required by the website typically did not result in the server and its location being at the disposal of the company. As a result, the company would not be considered to have acquired a place of business by virtue of that hosting arrangement. *See id.* art. 5, ¶¶ 4, 42.2, 42.3.

[171] *See* OECD COMMENTARY, *supra* note 163, art. 5(1), ¶¶ 5, 42.4; INTERNAL REVENUE SERV., UNITED STATES MODEL TECHNICAL EXPLANATION ACCOMPANYING THE UNITED STATES MODEL INCOME TAX CONVENTION OF NOVEMBER 15, 2006, at art. 5, ¶ 1 (2006) [hereinafter U.S. COMMENTARY], *available at* http://www.irs.gov/pub/irs-trty/temod006.pdf.

[172] OECD COMMENTARY, *supra* note 163, art. 5(1), ¶ 10.

[173] *See* OECD COMMENTARY, *supra* note 163, art. 5(1), ¶ 10. The OECD commentary lists gaming and vending machines as examples of automatic equipment that may constitute a permanent establishment. *Id.* There is no similar commentary to the U.S. Model Tax Treaty. However, Treasury comments that telecommunications or computer equipment that a foreign person engaged in electronic commerce owns or uses raises a question as to whether this equipment could constitute a fixed place of business of the foreign person in the United States, taking into account there would not necessarily be any employees present. TREASURY WHITE PAPER, *supra* note 39, at 26.

[174] OECD COMMENTARY, *supra* note 163, art. 5, ¶ 42.6. However, not all countries take this position. For instance, the French taxing authorities take the position that a server in itself cannot constitute a permanent establishment unless employees are located in France on a permanent basis to operate the server. *Country Perspectives on Taxing the Cloud – France*, KPMG INT'L (May 5, 2012),

Despite the foregoing, not all servers give rise to a permanent establishment. Most U.S. bilateral tax treaties specifically exclude from the definition of a permanent establishment activities of a purely preparatory or auxiliary character.[176] This language implies that the functions that a cloud service provider performs through its servers must exceed the preparatory and auxiliary threshold for a permanent establishment to exist. Preparatory or auxiliary activities include using facilities solely for the purpose of storage, display, or delivery of goods or merchandise belonging to the service provider; providing a communications link between suppliers and customers, advertising goods, or services; relaying information through a mirror server for security and efficiency purposes; gathering market data for the enterprise; or supplying information.[177] To determine whether a typical cloud computing transaction involves solely preparatory or auxiliary services at the location of the server requires an analysis of the nature of the activities performed through the server in light of the business of the cloud service provider.[178]

In cases where the functions conducted through the server constitute an essential and significant part of the business activity of the cloud provider as a whole, or where other core functions of the cloud service provider are conducted through the server, a permanent establishment may exist.[179] The OECD Commentary provides that in any case where a fixed place of business whose general purpose is identical to the general purpose of the whole enterprise, the fixed place of business does not fall within the preparatory or auxiliary activity exception.[180] Similarly, Treasury has commented that in applying U.S. trade or business and permanent establishment concepts to persons engaged in electronic commerce, it is helpful to consider the role other

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http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/taxing-the-cloud/Pages/france.aspx.

[175] OECD COMMENTARY, *supra* note 163, art. 5(1), ¶ 10.

[176] *See* OECD MODEL TREATY, *supra* note 41, art. 5(4); UN MODEL TREATY, *supra* note 13, art. 5(4); U.S. MODEL TREATY, *supra* note 41, art. 5(4).

[177] *See* OECD COMMENTARY, *supra* note 163, art. 5, ¶ 42.7; OECD MODEL TREATY, *supra* note 41, art. 5(4); UN MODEL TREATY, *supra* note 13, art. 5(4); U.S. MODEL TREATY, *supra* note 41, art. 5(4).

[178] *See* OECD COMMENTARY, *supra* note 163, art. 5, ¶¶ 24, 42.9. This determination is made on a case-by-case basis. *Id.*

[179] *See id.* art. 5, ¶¶ 24, 42.8.

[180] *Id.* art 5, ¶ 24.

activities should play in determining whether a taxable nexus exists.[181] For instance, there might be different taxable nexuses depending on whether the operation of a U.S. computer server is integral to the realization of a foreign person's profit and a foreign person who is primarily engaged in selling data, which is stored on a U.S.-based server.[182]

To help illustrate the distinctions underlying the permanent establishment inquiry, return for a moment to our hypothetical cloud business model. The nature of the activities that Developer performs through its servers consists of hosting and maintaining the software, storing customer's data, and consummating transactions, as well as maintaining the infrastructure necessary to support the software and data that it hosts on its servers. These activities likely do not fall within the safe harbor for preparatory and auxiliary activities. By hosting the software and customer databases, Developer is arguably doing more than merely storing, displaying, or delivering Developer's goods, supplying information, or performing other activities of a purely preparatory or auxiliary nature. In particular, the databases that Developer stores on its servers contain information that the customer provides, rather than solely containing and displaying information provided by Developer. Moreover, the business management software that Developer hosts on its servers does more than merely supply information. The software instead provides customers with tools to manage inventory, record sales, fulfill orders, process payroll, execute accounting functions, manage employees, and create financial statements.

Unlike a traditional software transaction, the server arguably does not solely function as a means of delivering Developer's software. This is because Developer also uses the server to perform upgrades on the software, maintain the software and hardware, and provide technical support. In other words, Developer does not merely deliver the software via the server but rather actually deploys and runs it on the server. The purpose of these activities that Developer performs through the server are identical to the general purpose of Developer's cloud computing business. These activities represent valuable services that Developer provides through the use of its servers, which are integral to the realization of its profit and thereby appear to form an essential and significant part of its cloud computing business as a whole. Thus, under existing law, locating a server in a particular jurisdiction may ultimately give rise to a permanent establishment in that jurisdiction.

On the other hand, if a server that is located in a particular jurisdiction functions solely as a mirror server,[183] the location of the server is not likely to create a permanent establishment for the cloud service provider. The OECD Commentary provides that relaying information through a mirror server for security and efficiency purposes constitutes a preparatory or auxiliary service that does not create a permanent establishment at the location of the mirror server.[184] Pursuant to the OECD Commentary, therefore, if a cloud vendor uses a U.S. server solely as a mirror server and the majority of the integral business activities occur on servers located abroad, the foreign cloud vendor will not have a permanent establishment in the United States.

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[181] TREASURY WHITE PAPER, *supra* note 39, at 25.

[182] *Id.* at 27.

[183] *See supra* text accompanying note 24.

b. Dependent Agent

Even if the cloud provider does not have a server or other fixed place of business in the United States through which it carries on its business, the cloud service provider may have a U.S. permanent establishment through the activities of its agents. Under all three of the common tax treaty models, a permanent establishment exists if (1) a dependent agent of the cloud service provider is acting on behalf of the provider, (2) the dependent agent habitually exercises authority to conclude contracts that bind the cloud service provider in the United States, and (3) such exercises of authority are not merely preparatory or auxiliary.[185] Moreover, under the UN Model Treaty, a permanent establishment is also deemed to exist if the cloud vendor has a dependent agent that habitually maintains in the United States a stock of goods or merchandise from which they regularly deliver goods or merchandise on behalf of the cloud vendor. In addition, both the UN Model Treaty and the alternative under the OECD Commentary provide that a permanent establishment exists if the agent furnishes services in the United States for a period exceeding 183 days in a 12-month period.[186] A dependent agent is a person that is not legally and economically independent of the enterprise. However, if a cloud vendor carries on business in the United States through an independent agent that is acting in the ordinary course of its business as an ordinary agent, the cloud vendor will not have a permanent establishment in the United States merely because of the agent's activities in the United States.[187]

For instance, if a foreign cloud service provider has employees, such as sales agents, in the United States that enter into contracts for the provision of cloud computing services on behalf of the cloud service provider without requiring any approval from the service provider, then the cloud service provider will likely have a permanent establishment in the United States to the extent of the sales agents' activities.[188] However, due to the nature of electronic commerce and cloud computing, a cloud vendor can avoid creating a permanent establishment in the United States on this basis. Because many of these activities can be performed online, a foreign service provider can easily locate its employees abroad or automate the process through Internet technologies.[189]

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[184] OECD COMMENTARY, *supra* note 163, art. 5, ¶ 42.7.

[185] OECD MODEL TREATY, *supra* note 41, art. 5(5); UN MODEL TREATY, *supra* note 13, art. 5(5a); U.S. MODEL TREATY, *supra* note 41, art. 5(5).

[186] OECD COMMENTARY, *supra* note 163, art. 5 ¶¶ 42.21–42.47; UN MODEL TREATY, *supra* note 13, art. 5. The OECD Commentary also provides for alternative and additional conditions that can create a service permanent establishment. *See* OECD COMMENTARY, *supra*, art. 5 ¶ 42.23.

[187] OECD MODEL TREATY, *supra* note 41, art. 5(6); UN MODEL TREATY, *supra* note 13, art. 5(7); U.S. MODEL TREATY, *supra* note 41, art. 5.

[188] Even if the sales agents are not employees of the foreign provider, they may be considered dependent agents in certain circumstances. For instance, if the agent operates on the basis

Moreover, if the cloud service provider has persons located in the United States that provide IT and technical support services on the cloud service provider's behalf, but do not have authority to bind the cloud service provider and have no fixed place of business, then the cloud service provider will likely not have a permanent establishment under most U.S. treaties. If the treaty is based on the UN Model Treaty or the alternative permanent establishment language set forth in the OECD Commentary and the persons the cloud vendor has located in the United States provide services for a period that exceeds 183 days in a 12-month period, then the agents' activities will create a service permanent establishment in the United States for the cloud vendor.[190]

Where does the preceding analysis leave us? Under current law, cloud computing will generally give rise to a permanent establishment if the cloud vendor maintains a server that is not merely a mirror server in the United States. A cloud vendor may also have a permanent establishment in the United States if it locates employees in the United States that are authorized to conclude contracts on its behalf or, alternatively, if it locates employees in the United States for a sufficient period of time and the treaty in place allows for the creation of a service permanent establishment.

4. Profits Attributable to a Permanent Establishment

A U.S. permanent establishment gives the United States taxing jurisdiction over the service provider's net business profits to the extent that such profits are attributable to that permanent establishment.[191] In determining the profits of a permanent establishment, deductions are allowed for expenses

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of detailed instructions from the service provider regarding the conduct of its operations, the agent is not legally independent. *See* U.S. COMMENTARY, *supra* note 171, ¶ 6. In addition, if the agent bears little to no risk from his or her activities, the agent is not economically independent. *See id.* Therefore, these agents would not have an independent status and would create a permanent establishment by attribution for the foreign provider if they have and habitually exercise authority to bind the foreign provider.

[189] *See* Arthur J. Cockfield, *Transforming the Internet into a Taxable Forum: A Case Study in E-Commerce Taxation*, 85 MINN. L. REV. 1171, 1186 (2001).

[190] *See* OECD COMMENTARY, *supra* note 163, art. 5 ¶¶ 42.21–42.47; UN MODEL TREATY, *supra* note 13, art. 5(3)(b).

[191] *See* OECD MODEL TREATY, *supra* note 41, art. 7; UN MODEL TREATY, *supra* note 13, art. 7; U.S. MODEL TREATY, *supra* note 41, art. 7. This profit attribution requirement is narrower than the similar effectively connected income concept under U.S. domestic law. Therefore, if a treaty applies, it may result in a smaller amount of business profits coming within the U.S. taxing jurisdiction.

incurred.[192] In addition, a foreign service provider with a permanent establishment in the United States has U.S. tax return filing and reporting obligations.[193]

The term "business profits" generally covers income derived from any trade or business.[194] The law attributes such profits to a permanent establishment and includes them in the tax base if they are derived from the assets used, risks assumed, and activities that the permanent establishment performs.[195] The amount of profit attributed to a permanent establishment must reflect the amount the permanent establishment would have earned if it were a distinct and separate enterprise.[196] As a result, if a U.S. server creates a U.S. permanent establishment for a foreign cloud service provider, the United States would tax the cloud service provider's business profits that are attributable to, or have a factual connection to, any U.S. servers that the provider owns or leases.

Determining the amount of profits attributable to servers located in the United States is challenging under current tax principles.[197] To see this, consider Developer's cloud business model. Taxing authorities might treat a substantial amount of Developer's monthly subscription fee, reduced by allowable expenses, as attributable to the U.S. servers on which Developer hosts the business management software and accompanying data. The server itself—as well as the activities conducted through the server in updating and maintaining the software, data, and infrastructure—primarily contribute to the creation of Developer's cloud-related profits. The servers function as a means of both providing customers with access to the software, stored data, and server space, as well as processing and storing customers' input and data, which comprise a substantial amount of Developer's cloud computing services. In addition, well-maintained and operating U.S. servers are critical to the success of Developer's cloud computing business. The risks that Developer assumes in providing these cloud computing services are significantly correlated to the servers functioning adequately. Thus, a substantial amount of Developer's business profits from its cloud computing business have a factual connection to these U.S. servers and could be included in Developer's U.S. tax base on a net basis.

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[192] OECD MODEL TREATY, *supra* note 41, art. 7(3); UN MODEL TREATY, *supra* note 13, art. 7(3); U.S. MODEL TREATY, *supra* note 41, art. 7(3).

[193] *See* Treas. Reg. § 1.6012-2(g)(1) (2010).

[194] U.S. COMMENTARY, *supra* note 171.

[195] OECD MODEL TREATY, *supra* note 41, art. 7(2); U.S. MODEL TREATY, *supra* note 41, art. 7(2). The UN Model Treaty does not contain similar language.

[196] OECD MODEL TREATY, *supra* note 41, art. 7(2); UN MODEL TREATY, *supra* note 13, art. 7(2); U.S. MODEL TREATY, *supra* note 41, art. 7(2).

[197] In addition, the IRS does not ordinarily issue an advance ruling on whether a taxpayer has income attributable to a permanent establishment in the United States. Rev. Proc. 2013-7, 2013-1 I.R.B. 233.

On the other hand, if the U.S. servers only perform routine functions and other parts of the business provide valuable intangible assets and services, then a substantial share of the profit associated with the cloud computing business would not be attributed to the U.S. servers.[198] For instance, if Developer solely has mirror servers in the United States, but has a U.S. permanent establishment as a result of the activities of its dependent agents or some other basis, then only a minimal amount of the business profit would be attributable to the U.S. servers. Even though some of the business profits would be attributed to the permanent establishment created by the dependent agents, the majority of the business profits may be attributed to the servers located abroad on the basis that the servers primarily contribute to the creation of the cloud computing profit. This would significantly minimize any U.S. tax liability. However, under current law, it is unclear how much profit would be attributed to the cloud service provider's servers.[199]

5. Branch Profits Tax

Engaging in a U.S. trade or business may also create additional tax implications for a foreign cloud service provider if the cloud vendor is a foreign *corporation*. Specifically, the United States may subject a foreign cloud vendor corporation to a U.S. branch profits tax if it engages in a U.S. trade or business through a branch, rather than a subsidiary, or receives income effectively connected with the conduct of a U.S. trade or business.[200] Generally, the United States subjects income earned by a foreign corporation that operates its business through a U.S. subsidiary to two levels of taxation: (1) tax on the income earned by the U.S. subsidiary, and (2) tax on the dividends distributed by the U.S. subsidiary to its shareholders.[201] But a foreign corporation engaged in business in the United States through a branch or an unincorporated entity generally is taxed on the income effectively connected with the U.S. trade or business, but not on income distributed to its foreign investors.[202] This treatment results because the branch is not a separate taxable entity. Thus, the branch profits tax ensures that the income that the U.S. trade or business generates is subject to a second level of taxation even when the business is operated through a U.S. branch.

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[198] *See Compliance Complexity*, *supra* note 8, at 33.

[199] Moreover, a cloud vendor that has servers in multiple jurisdictions presents additional practical difficulties. Both the cloud vendor and the taxing authorities will likely find it difficult to determine which transactions occurred through which server for purposes of allocating the profits. *See* Fleming, Jr., *supra* note 79. Customers are also often unaware of and indifferent to which servers their transactions are routed through. *See id.*

[200] I.R.C. § 884(a), (d)(1) (2012); Treas. Reg. § 1.884-1(f)(1) (2009). Other examples of when a foreign corporation can be subject to the branch profits tax include a foreign corporation that is a partner in a partnership or a beneficiary of a trust or estate that is engaged in a U.S. trade or business, or, alternatively, a foreign corporation that makes an election to be treated as a domestic corporation under section 897(i) and realizes gain on a sale of a U.S. real property interest. Treas. Reg. § 1.884-0(a) (2008); Treas. Reg. § 1.884-1(f)(1).

[201] *See* BORIS I. BITTKER, JAMES S. EUSTICE & JOHN P. STEINES, JR., ¶ *15.04 Foreign Corporations Engaged in U.S. Business: §§ 882 and 884*, *in* FEDERAL INCOME TAXATION OF CORPORATIONS AND SHAREHOLDERS (7th ed. 2013).

[202] *See id.*

The branch profits tax is a corporate-level, 30 percent tax[203] on a foreign corporation's "dividend equivalent amount." The dividend equivalent amount represents income effectively connected with, but not reinvested in, a U.S. trade or business.[204] This tax applies in addition to any U.S. income tax the foreign corporation owes on its effectively connected income and its FDAP income that is not effectively connected with a U.S. trade or business.[205]

D. Taxing FDAP Income

Regardless of whether the cloud service provider is engaged in a U.S. trade or business or has a U.S. permanent establishment, the United States has taxing authority over certain nonbusiness income that is sourced to the United States. Unless a treaty requires a lower tax rate, the United States imposes a flat tax of 30 percent on U.S. source income that it characterizes as FDAP income.[206] FDAP income is income that is fixed, determinable, annual, and periodical and includes rental, royalty, and other types of similar income.[207] However, FDAP income does not include business income that is effectively connected with a U.S. trade or business or any business profits that are attributable to a permanent establishment located in the United States.[208] When the 30 percent tax applies to a taxpayer's income, the tax is imposed on a gross basis and collected through withholding at the source of payment.[209]

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[203] Treaties often reduce the 30 percent branch profits tax rate. For instance, the U.S. Model Tax Convention reduces the branch profits tax rate to 5 percent, which is the U.S. withholding tax rate for dividends from a wholly owned subsidiary. *See* U.S. MODEL TREATY, *supra* note 41, art. 10, ¶ 2.

[204] I.R.C. § 884(a). The "dividend equivalent amount" means the foreign corporation's effectively connected earnings and profits for the taxable year positively adjusted for any decrease in the foreign corporation's U.S. net equity during the taxable year and negatively adjusted for any increase in the foreign corporation's U.S. net equity during the taxable year. *Id.* § 884(b).

[205] *Id.* § 884(a).

[206] I.R.C. § 871(a) (West 2014); I.R.C. § 881(a) (2012). In general, gains realized from the sale of personal property are not subject to the 30 percent withholding tax. *See* I.R.C. § 881(a). Therefore, characterization of income as sales or rental or royalties has different tax implications. However, gain from the sale of intangible property such as patents, copyrights, goodwill, and other like property is subject to this gross taxing regime to the extent such gains are from payments that are contingent on the productivity, use, or disposition of the property or interest sold. I.R.C. § 871(a)(1)(D); I.R.C. § 881(a)(4). Under these circumstances, the regulations treat sales income in the same manner as royalty income for gross withholding tax purposes.

[207] *See* I.R.C. § 871(a); I.R.C. §§ 881; 1441, 1442 (2012); Comm'r v. Wodehouse, 337 U.S. 369, 377 (1949); Treas. Reg. § 1.871-7(b) (1999); Treas. Reg. § 1.881-2(b) (2013) (holding that royalty income falls within the definition of FDAP income even though not specifically stated in the statute).

[208] I.R.C. § 871(a); I.R.C. § 881(a); U.S. MODEL TREATY, *supra* note 41, art. 10, ¶ 6, art. 11, ¶ 4, art. 12, ¶ 3.

[209] I.R.C. §§ 871(a); I.R.C. §§881 (a), 1441, 1442.

In the cloud computing context, a foreign cloud vendor's income may be subject to U.S. withholding tax if such income is sourced to the United States and such income is not effectively connected with a U.S. trade or business or attributable to a permanent establishment. Therefore, if the income that a cloud computing business generates is characterized as rental or royalty income[210] and the income is not effectively connected with a U.S. trade or business or attributable to a permanent establishment, then it falls within the definition of FDAP income. Accordingly, the taxability of such income will depend on whether the income is sourced to the United States. However, despite the foregoing, if a treaty exists between the United States and the cloud vendor's country of residence, it is possible (depending on the treaty in place) that the United States will not be able to tax the cloud vendor's royalty income even if the income is sourced to the United States. Both the U.S. Model Treaty and OECD Model Treaty do not allow source-basis taxation of royalty income.[211]

If the cloud computing transaction is characterized as the provision of services and the services are performed in the United States, the profits from these services are likely to be effectively connected with a U.S. trade or business. If so, that income will not constitute FDAP income and will instead generally be taxed at the regular, graduated U.S. rates.[212]

However, as discussed above in Parts II.A and II.B, the source and nature of cloud-related income is not clearly resolved under existing law. This uncertainty likely makes it difficult for withholding agents to comply with their withholding and reporting obligations and also makes the tax difficult to enforce and collect as a practical matter.

E. Taxing U.S. Owners of Foreign Cloud Computing Companies

If the cloud service provider is a foreign corporation with U.S. owners, some of its income may be also be subject to U.S. tax under the U.S. anti-deferral regimes. Congress enacted one such anti-deferral regime, subpart F, to discourage U.S. taxpayers from using foreign corporations to improperly defer U.S. taxes.[213] Specifically, a U.S. taxpayer operating a business abroad through a foreign corporation is generally not subject to tax until the earnings are distributed to the U.S. shareholders.[214] By operating through a foreign corporation, U.S. taxpayers were able to take advantage of this deferral and avoid paying U.S. taxes until they chose to withdraw dividends from the company.[215] Moreover, by operating the business in a tax haven or low-tax jurisdiction, and improperly shifting income to the foreign corporation, U.S. taxpayers were able to significantly reduce both their U.S. and foreign taxes.[216] To address these concerns, Congress enacted subpart F, which generally taxes certain U.S. persons immediately on certain types of income of their controlled foreign corporations.[217] Thus, under the subpart F legislation, certain U.S. owners of a foreign cloud vendor may be immediately liable for U.S. tax on their share of the foreign cloud vendor's income even if such income is not repatriated to the United States.[218]

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[210] See discussion *supra* Part II.A.

[211] *See* OECD MODEL TREATY, *supra* note 41, art. 12(1); U.S. MODEL TREATY, *supra* note 41, art. 12(1). *But see* UN MODEL TREATY, *supra* note 13, art. 12.

[212] See discussion *supra* Part II.C.3.

[213] *See* S. REP. NO. 87-1881, at 79 (1962); RICHARD L. DOERNBERG, INTERNATIONAL TAXATION IN A NUTSHELL 341 (9th ed. 2012).

[214] *See* DOERNBERG, *supra* note 213, at 340–41.

[215] *See id.*

To come within the subpart F regime, a foreign company must constitute a controlled foreign corporation (CFC) for an uninterrupted period of at least 30 days during the taxable year.[219] A CFC is a foreign corporation that is owned by "U.S. shareholders." [220] For these purposes, a "U.S. shareholder" refers to a U.S. person who directly, indirectly, or constructively owns at least 10 percent of the corporation's voting stock.[221]

To illustrate the tax implications for a cloud computing business that falls within the subpart F regime, assume that a U.S. corporation (U.S. Co.) wholly owns Developer as a foreign subsidiary for the entire taxable year. Under these circumstances, Developer constitutes a CFC because it is more than 50 percent owned by a U.S. shareholder for a continuous period of at least 30 days.[222] As a result, U.S. Co. will be subject to tax on a current basis on its pro rata share of Developer's subpart F income and Developer's earnings invested in certain types of U.S. property.[223]

Whether Developer's income constitutes subpart F income depends on how tax law characterizes the income.[224] For instance, the portion of gross income a CFC generates that is characterized as rental or royalty income constitutes "foreign personal holding company income," a component of subpart F income, unless such income comes within an exception.[225] A CFC's income is generally outside the reach of the subpart F provisions if the income is of a type that is less likely to be subject to taxpayer manipulation, such as income that the CFC derives from active business operations or for which it has a legitimate business purpose.[226] Thus, the definition of foreign personal holding company income exempts rents and royalties that are (1) derived in the active conduct of a trade or business, and received from an unrelated party (the active trade or business exception),[227] or (2) received from a corporation, which is a related person, for the use of, or the privilege of using, property within the country under the laws of which the CFC is created or organized (the related party exception).[228]

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[216] *See id.*

[217] *See id.* at 341.

[218] I.R.C. §§ 951; 952 (2012).

[219] *Id.* §§ 951(a); 957.

[220] *Id.* §§ 951(b), 957.

[221] *Id.* §§ 951(b), 957.

[222] U.S. Co. constitutes a U.S. shareholder because it owns at least 10 percent of the total voting power of Developer. *See id.* § 951(b).

[223] *See id.* §§ 951(a)(1), 956(c) (defining U.S. property broadly as any tangible property located in the United States; stock of a domestic corporation; obligation of a U.S. person; right to the use in the United States of a patent, copyright, invention, model, or design; secret formula or process; or other similar property right which is acquired or developed by the CFC for use in the United States).

[224] *See* Tillinghast, *supra* note 8, at 361.

[225] I.R.C. § 954(a), (c) (West 2014).

To come within the active trade or business exception, the CFC's activities must satisfy a very narrow definition of "trade or business."[229] The regulations consider rental income to be derived from active conduct of a trade or business if such rents are obtained by the CFC from leasing any of the following types of property: (1) property that the CFC has manufactured or produced, or has acquired and added substantial value to, but only if the CFC is regularly engaged in the manufacture or production of, or in the acquisition and addition of substantial value to, property of such kind; (2) real property that the CFC actively and substantially manages while the property is leased; (3) personal property ordinarily used by the CFC in the active conduct of a trade or business and temporarily leased while the property is idle; or (4) property that is leased as a result of the CFC's marketing functions if the CFC maintains and operates an organization that is regularly engaged in the business of marketing the leased property where such marketing activities are substantial in relation to the amount of rents derived from leasing such property.[230] Under the facts of our hypothetical, Developer's income will likely be treated as derived from the first type of property listed above. Specifically, Developer developed the software that it leases to unrelated customers and is regularly engaged in developing software and similar intangible property. In addition, Developer may be treated as acquiring and adding substantial value to the server space that it leases to its customers because it maintains the hardware and ensures it is operating at an optimal level to meet customer demands.[231]

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[226] *See* DOERNBERG, *supra* note 213, at 341. In general, subpart F income tends to be income that is easily movable to a low-tax jurisdiction, such as passive investment income and income derived from dealings with related corporations. *See id.*

[227] I.R.C. § 954(c)(2)(A).

[228] *Id.* § 954(c)(3)(A).

[229] Treas. Reg. § 1.954-2(b)(6) (2011).

[230] *Id.* § 1.954-2(c)(1). The regulations also provide that the performance of marketing functions will not be considered to add substantial value to the property. *Id.* § 1.954-2(c)(2)(i).

[231] Any marketing functions that Developer performs in leasing the property will be disregarded in determining whether Developer adds substantial value to the leased property. *See* Treas. Reg. § 1.954-2(c)(2), 1.954-2(d)(2). The rental income would likely not be considered derived by Developer in any of the other leasing transactions enumerated in the active trade or business exception for rental income. Developer's rental income would not be considered derived from real property, because the income is derived from intangible property and computer hardware, which is tangible personal property. The rental income is also not derived from personal property that Developer uses in its trade or business that is temporarily idle for the duration of the lease. The software, servers, and other property are actively in use while they are leased by Developer's customers. In addition, even

Therefore, the cloud-related income likely falls within the active trade or business exception.

Similarly, royalty income will be considered derived in the active conduct of a trade or business if the CFC meets either of two tests: (1) the CFC has (A) developed, created, or produced the property and is regularly engaged in developing, creating, or producing property of such kind, or (B) acquired and added substantial value to the property and is regularly engaged in acquiring or adding substantial value to property of such kind; or (2) the CFC licenses the property as a result of its performance of marketing functions and maintains and operates an organization in such country that is regularly engaged in the business of marketing the licensed property and that is substantial in relation to the amount of royalties derived from the licensing of such property.[232]Developer's cloud-related income that it generates from developing software and acquiring and adding substantial value to the server space it provides to customers will likely satisfy this first test. Accordingly, so long as the income that Developer's cloud computing business generates is characterized as rental or royalty income under existing law, such income will likely fall within the active trade or business exception and will not constitute subpart F income.

If Developer leases or licenses the software, server space, and computing power to U.S. Co., a related party, then the rental or royalty income, as applicable, will not come within the active trade or business exception to subpart F income. However, the related party exception may apply to such income. To come within the related party exception, the rental or royalty income must satisfy two requirements. First, the CFC must receive the rental or royalty income from a related person.[233] For these purposes, a related person with respect to a CFC is an individual, corporation, partnership, trust, or estate that controls, or is controlled by, the CFC or a person that is controlled by the same person(s) that control the CFC.[234] Second, the CFC must receive the rental or royalty income for the use of property located in the same country where the CFC is organized.[235] If both of these requirements are met, the rental or royalty income that Developer generates will not constitute subpart F income. However, this exception does not apply to the extent that the income reduces the payor's subpart F income or creates a deficit that may reduce the subpart F income of the payor or another CFC.[236]

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though the rental income is derived as a result of Developer's marketing activities, under our facts, Developer does not maintain and operate an organization that is regularly engaged in marketing activities.

[232] *Id.* § 1.954-2(d)(1).

[233] I.R.C. § 954(c)(3)(A) (West 2014).

[234] *Id.* § 954(d)(3).

[235] *Id.* § 954(c)(3)(A).

[236] *Id.* § 954(c)(3)(B).

Indeed, under some circumstances, such income would also fall outside the related party exception. In particular, if U.S. Co. is treated as using the software and server space outside of Developer's country of incorporation, the rental or royalty income derived from such property is not within any exception and constitutes subpart F income.[237] However, as discussed above, a consumer may be treated as using property at the location of the server or at the location of key IT personnel.[238] Thus, if Developer's servers or key IT personnel are located in the same country where Developer is incorporated, U.S. Co. may be treated as using the property in Developer's country of incorporation. If so, the income would come within the related party exception.

If, instead, the income that Developer generates from its cloud computing business is characterized as services income, it is unlikely to constitute subpart F income. In general, services income does not constitute foreign personal holding company income but may constitute foreign base company services income, which is another component of subpart F income.[239] Foreign base company services income includes income derived in connection with the performance of technical, managerial, engineering, architectural, scientific, skilled, industrial, commercial, or like services if two requirements are met.[240] First, the CFC must perform the services for or on behalf of any related person.[241] Second, the CFC must perform the services outside the country in which the CFC is created.[242]

Treasury regulations provide a nonexclusive list of situations where a CFC is considered to perform services on behalf of a related person. In particular, Developer would be treated as performing services on behalf of U.S. Co. if (1) U.S. Co. pays or provides Developer with a substantial financial benefit for performing such services, (2) Developer performs services that U.S.

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[237] However, if the income is U.S. source income that is effectively connected with a U.S. trade or business, such income does not constitute subpart F income unless it is exempt from taxation pursuant to a treaty obligation of the United States. I.R.C. § 952(b) (2012). Moreover, if this income and any other foreign base company income that Developer has is less than the lesser of 5 percent of gross income or $1 million, no part of the gross income for the taxable year is treated as foreign base company income and thereby excluded from subpart F. *See* I.R.C. § 954(b)(3)(A). This situation does not arise under our hypothetical, because the cloud computing business generating such rental or royalty income is Developer's primary business operations.

An exception from subpart F income also exists for foreign base company income that is subject to an effective rate of income tax by a foreign country that is greater than 90 percent of the tax imposed by the United States under section 11 of the Code. I.R.C. § 954(b)(4). Thus, if the cloud vendor is located in a low-tax jurisdiction, this exception will not apply.

[238] See discussion *supra* Part II.C.3.

[239] I.R.C. 954(e); I.R.C. § 952(a).

[240] I.R.C. § 954(e).

[241] *Id.* § 954(e)(1)(A).

[242] *Id.* § 954(e)(1)(B). For these purposes, the place where the regulations consider services to have been performed is where the persons performing services for the CFC are physically located when they perform their duties in the execution of the service activity resulting in such income. Treas. Reg. § 1.954-4(c) (2002). The ultimate determination of the location where services are performed depends on the facts and circumstances of each case. *Id.*

Co. is obligated to perform, (3) Developer performs services with respect to property sold by U.S. Co. and such services are a condition of such sale, or (4) Developer performs the services but U.S. Co. furnishes substantial assistance contributing to the performance of such services, among other circumstances.[243] Provided that these circumstances do not exist in our hypothetical situation, any services income that Developer generates from its cloud computing business would not constitute subpart F income even if Developer potentially performs technical or skilled services outside of its country of incorporation.[244]

The United States will also subject U.S. Co. to immediate taxation of Developer's income from its cloud computing business if Developer invests its non-subpart F foreign earnings in U.S. property for the taxable year.[245] This provision is intended to deter U.S. taxpayers from repatriating to the United States—in a tax-free manner—the earnings of the CFC that have not yet been subject to U.S. tax.[246]

Conversely, if the cloud-related income is characterized as U.S. source income that is effectively connected with a U.S. trade or business, such income will not constitute subpart F income.[247] Instead, such income will be subject to immediate U.S. taxation under other Code provisions.[248] Because the income earned by the CFC is not improperly deferred, the subpart F rules are unnecessary in this situation. However, if the income is exempt from taxation pursuant to a treaty obligation of the United States, such income may constitute subpart F income because it is not otherwise taxable in the United States.[249]

As the foregoing analysis in Part II illustrates, it is difficult to determine under existing U.S. tax laws to what extent, if any, a foreign cloud vendor's income is subject to U.S. taxation. This difficulty arises because traditional tax principles may characterize cloud-related income as rental, royalty, or services income. The income's characterization determines which source rule applies to the cloud computing transaction, which impacts the taxability of the transaction in the United States. Specifically, if the income is characterized as rental or royalty income, it will be sourced to the place of use, which may be the location of the cloud customer(s) or the location of the server(s). Alternatively, if the income is characterized as services income, it will be sourced to the place of performance. The place of performance may be deemed to be the location of the server(s) or the location of the cloud vendor's key personnel. Thus, the rules potentially source cloud-related income to different locations, which impacts the extent to which a cloud vendor's income is subject to U.S. taxation.

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[243] *See* Treas. Reg. § 1.954-4(b)(1).

[244] If the regulations characterize cloud computing income as sales income, a different analysis is required to determine if the income constitutes subpart F income. *See* I.R.C. § 954(d) (defining "[f]oreign base company sales income").

[245] *See* I.R.C. § 951(a)(1)(B) (2012); Treas. Reg. § 1.956-1(a) (2011). However, a U.S. shareholder of a CFC does not have to include in gross income any increase in earnings invested in U.S. property that is previously taxed income excluded from gross income under section 959(a)(2). I.R.C. § 951(a)(1)(B); *id.* § 1.956-1(a). The amount included in gross income is also limited by the shareholder's pro rata share of the "applicable earnings" of the CFC. I.R.C. § 956(a)(2) (2012).

[246] *See* DOERNBERG, *supra* note 213, at 376–77.

[247] I.R.C. § 952(b) (2012).

[248] See discussion *supra* Part II.C.

[249] *See* I.R.C. § 952(b).

As discussed above, the cloud vendor's business income will be subject to U.S. taxation if the income is attributable to a permanent establishment in the United States or effectively connected with a U.S. trade or business. This situation is likely to occur if the cloud vendor has a primary server in the United States. However, making this determination is challenging under existing law because (1) the source rules, with their inherent uncertainties in the cloud computing context, may impact how much of the income is connected to the server and (2) it is unclear how to allocate profits when servers are located in multiple jurisdictions. In addition, this income may also be subject to the branch profits tax if the cloud vendor is a foreign corporation engaging in a U.S. trade or business through a U.S. branch.

Alternatively, the United States may tax the cloud vendor's income if the cloud-related income constitutes FDAP income and is sourced to the United States. Because the income's source is determinative of the amount of the foreign cloud vendor's passive cloud-related income that is subject to U.S. withholding taxes, the challenges in applying the source rules also affect the cloud vendor's U.S. tax liability.

Finally, cloud computing income may also be subject to U.S. taxation under the subpart F regime. However, as discussed above, regardless of whether the income is characterized as rental, royalty, or services income, it is not likely to fall within the definition of subpart F income.

III.

POLICY ISSUES IN TAXATION OF CLOUD COMPUTING

As I will argue in this final Part, cloud computing challenges the traditional tax policy goals of equity, efficiency, and tax administrability.[250] Cloud transactions also undermine the international tax regime's goals of avoiding international double taxation and non-taxation, and encouraging investment.[251] Thus, the resolution of the practical and policy questions raised by many common cloud computing transactions clearly makes both the renegotiation of tax treaties and the promulgation of Treasury regulations desirable.

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[250] *See* RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, *B: Requirements for a "Good" Tax Structure*, *in* PUBLIC FINANCE IN THEORY AND PRACTICE 224–25 (4th ed. 1984); Orly Sulami, *Good News in a Bad Economy: Service Acquiesces on Pro-Taxpayer Application of Passive Activity Loss Rules to Limited Liability Companies*, 65 TAX LAW. 81, 110 (2011); TREASURY WHITE PAPER, *supra* note 39, at 3 (stating that "our overall tax policy goal in this area should emulate policy in other areas — maintain neutrality, fairness and simplicity — a policy which serves to encourage all desirable economic activity new and old").

[251] *See* UN MODEL TREATY, *supra* note 13, at vii; Graetz and O'Hear, *supra* note 13, at 1025–27.

There must ultimately be an international solution to (1) minimize the current double taxation and non-taxation of cloud computing transactions and (2) fairly allocate the taxing rights among the different nations.[252] Currently, it is feasible that many countries will treat a server as triggering a taxable nexus in that jurisdiction.[253] But it is unclear how countries will determine how much of a cloud vendor's income will be allocated among the vendor's multiple servers, especially when mirror servers are involved.[254] If there is no international consensus, the same stream of income may be allocated to servers in multiple jurisdictions and taxed multiple times.[255] In addition, some countries may potentially characterize the cloud income as rental or royalty income, while other countries may characterize it as services income.[256] Because the income's characterization determines which source rules apply, an inconsistent characterization among jurisdictions may cause the cloud-related income to be sourced to multiple jurisdictions or no jurisdiction at all. Moreover, even if different jurisdictions characterize cloud-related income consistently, each jurisdiction may interpret the sourcing rules differently. For instance, some countries may interpret the "place of use" to be the location of the server, while others may interpret it as the location of the customer. An inconsistent application of the source rules to cloud computing income among jurisdictions may also result in either multiple or non-taxation of the cloud-related income. Therefore, countries need to apply uniform characterization rules so that they do not tax the same stream of income differently.

To avoid taxing the same stream of income multiple times or creating loopholes that enable taxpayers to completely escape taxation, countries also need to source income consistently with each other and establish a mechanism for allocating the cloud income among various jurisdictions in which a permanent establishment exists. An international solution is also essential to improving cooperation by taxing authorities to assist in the enforcement and collection of taxes that these transactions generate. Bilateral tax treaties are one way to achieve this type of international cooperation.[257]

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[252] International cooperation is necessary if the United States is to even begin to solve the issues presented by cloud computing. Without international cooperation, it will be difficult for countries to enforce and collect tax revenues that these transactions generate. However, an in-depth analysis of the need for an international solution and the type of solution needed is outside the scope of this Article.

[253] For a discussion of how different jurisdictions potentially tax cloud computing transactions, see KPMG LLP's study. *See Country Perspectives on Taxing the Cloud*, KPMG INT'L, http://www.kpmg.com/global/en/issuesandinsights/articlespublications/taxing-the-cloud/Pages/default.aspx (last visited Oct. 18, 2014).

[254] David J. Shakow, *The Taxation of Cloud Computing and Digital Content*, TAX NOTES, July 22, 2013, at 333, 351.

[255] *See id.*

[256] *See* KPMG INT'L, *supra* note 253.

In addition, Treasury should modify the existing software regulations and promulgate new regulations to clarify the U.S. tax treatment of international cloud computing transactions. This regulatory guidance is needed to achieve a degree of certainty, efficiency, and equity in the taxation of cloud computing that is currently missing. Among the issues that Treasury should address are (1) the appropriate characterization of the transaction, (2) the source of the transaction as U.S. source or foreign source, (3) whether the transaction has created a taxable nexus in the United States, and (4) whether income constitutes FDAP income, is attributable to a permanent establishment, or is effectively connected with a U.S. trade or business.[258] Because the current characterization, source, and taxable nexus rules have a sound basis in the context of traditional commerce, it is unnecessary to change the statutory language. It is the application of these rules to a new paradigm for which they were not intended that is problematic. Thus, until an international consensus is reached, a regulatory solution is preferable to a broad legislative solution.[259]

The goal of these regulations should be both to provide taxpayers with sufficient guidance to determine the tax implications of transacting business in the global cloud and to treat income arising from cloud computing transactions the same as income from traditional software sales and the provision of IT services. To maintain an efficient and equitable tax system, doing business in the cloud should not be treated as changing the nature of the arrangement such that it changes the tax treatment. The following discussion proposes a normative framework for new rules to address some of these issues.

A. Characterization Issues

A modification of the software regulations is warranted to clarify the character of a cloud computing transaction. To improve the equity and efficiency of our tax system, Treasury should apply a normative approach that eliminates artificial distinctions between the treatment of cloud computing transactions and equivalent transactions that do not occur in the cloud. Specifically, Treasury should consider modifying the software regulations so that a SaaS transaction is characterized partially as the provision of software, which is within the scope of the software regulations, and partially as the provision of services, which is analyzed under the normal service rules.

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[257] *Cf.* Melissa Fernley & Ean Hamilton, *Classification of Cloud Computing Services: Interview of Steve Oldroyd*, Daily Tax Rep. (BNA) (Oct. 4, 2013) (discussing the need for state-level cooperation on cloud computing rules within the United States).

[258] Treasury should also issue guidance that clarifies whether and when the anti-deferral rules, such as subpart F, should apply. A discussion of these issues is outside the scope of this Article.

[259] *See* TREASURY WHITE PAPER, *supra* note 39, at 21, 23, 25.

These changes are desirable because differentiating between rental, royalty, and services income under current law is difficult and often arbitrary when applied to income derived from cloud computing transactions. The tax differences that result from the different characterizations are difficult to justify on policy grounds. For instance, a policy analysis of the characterization of SaaS transactions for tax purposes suggests that these transactions should not be characterized solely as services. As discussed above, a sufficient basis exists under current law to completely characterize a cloud computing transaction as a service given the risk and control that a cloud vendor maintains over the software.[260] With respect to equity, if the tax law characterizes cloud-related income solely as services income, a developer that uses the cloud to distribute its software and a developer that distributes its software physically on a disk or electronically through downloading potentially faces significantly different consequences even though the two developers generate substantially similar streams of income.[261] Based on my argument that these two modes of distribution are economically similar from a customer's perspective, this is a violation of horizontal equity.[262]

A pure services characterization would also likely create market inefficiencies because applying existing law to treat cloud computing as giving rise solely to services income may potentially lead to discrimination against a more efficient mode of distribution.[263] As one commentator has noted in the context of electronic commerce, making these types of distinctions "will become increasingly unfair, distortive and thus untenable in a world in which competing products can be packaged in different ways."[264] Cloud computing further exacerbates the definitional problems in characterizing income and the inefficiencies that result from the different possible tax characterization.

Instead, the law should treat a portion of the SaaS transaction in the same manner as the traditional distribution of software electronically because it is most economically analogous to this type of transaction. Both cloud computing and the traditional distribution of software enable end users to access and use the vendor's software, and both should be characterized as such. However, cloud computing differs from the traditional distribution of software because by providing the software in the cloud, the cloud vendor hosts the software on its own computer infrastructure. The customer no longer needs to upgrade its hardware and purchase servers and other computer infrastructure to process and store the data. Thus, a cloud customer is also paying for the use of the cloud vendor's hardware. Because the cloud vendor controls this underlying infrastructure and bears the risks associated with it, the customer's payment also should be partially characterized as services income. In addition, cloud computing involves services beyond the mere provision of access to the software, such as technical support relating to implementing, upgrading, and supporting the software and applications, and maintaining the underlying infrastructure. Therefore, the cloud-related income that is attributable to these services should be characterized as services income.

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[260] See discussion *supra* Part II.A.2.

[261] Because it is easier for a developer that uses the cloud to structure its business to minimize any physical connection with the United States, it is likely to have a smaller U.S. tax burden than a developer that distributes its software physically on a disk or electronically through downloading. However, who bears the greater tax burden ultimately depends on how each transaction is structured.

[262] *See* Richard A. Musgrave, *Horizontal Equity, Once More*, 43 NAT'L TAX J. 113 (1990).

[263] Shakow, *supra* note 254, at 334.

[264] Charles E. McLure, Jr., *Taxation of Electronic Commerce: Economic Objectives, Technological Constraints, and Tax Laws*, 52 TAX L. REV. 269, 317 (1997).

To provide adequate guidance, Treasury should also supply definitions of these different elements that make up the cloud computing offering.[265] Although this approach would leave open the practical issue of how to separate the cloud transaction into its different components, this is not a new issue for taxing authorities or taxpayers and exists in traditional transactions as well.[266]

B. Sourcing Issues

Treasury should also issue guidance that clarifies the application of the present source rules to cloud computing and other transactions involving intangibles. In particular, such guidance should specify that the location of the cloud vendor's servers should not serve as the sole or primary basis for sourcing the income, regardless of whether it is royalty income, rental income, or services income. Instead, a normative basis for the source rules should focus on the geographic location where an economic nexus exists, even if the activity does not have a physical presence in that jurisdiction.[267] In addition, the guidance should clarify that the traditional basis for sourcing royalty income to the place of protection is not applicable in the cloud computing context.

These changes to eliminate reliance on physical presence from the source rules are necessary because applying existing law to source cloud-related income potentially leads to arbitrary results that are inconsistent with sound tax policy. As discussed above, traditional source tax concepts do not sufficiently address when a jurisdiction has taxing authority over income generated by cloud computing transactions. Policy makers developed our current source rules in a different technological era where transactions were tied to a specific geographical location.[268] Goods were physically delivered to a determinable location and service providers traditionally moved to the physical location where services needed to be performed. But with the growth of electronic commerce, and especially the growth of cloud computing, these tax concepts no longer suffice. Physical presence is no longer necessary for a taxpayer to generate income in a particular jurisdiction.

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[265] *See* Fernley & Hamilton, *supra* note 257.

[266] *See id.* (noting that "determining the taxability of any online solution is in principle no different than any other bundled goods or services").

[267] Another commentator has reached a similar conclusion after studying the application of the current tax law on online advertising. *See* Assaf Y. Prussak, The Income of the 21st Century: Online Advertising as a Case Study for the Implications of Technology for Source-Based Taxation 40 (Jan. 1, 2013) (later published in the Tulane Journal of Technology and Intellectual Property), *available at* http://ssrn.com/abstract=2206745.

[268] *See* TREASURY WHITE PAPER, *supra* note 39, at 21, 23, 25.

For instance, cloud computing makes it possible for taxpayers to provide goods and services without ever having any physical contact with a particular jurisdiction. Specifically, cloud computing removes many of the physical manifestations traditionally associated with the provision of IT goods and services by eliminating the need for IT infrastructure, IT personnel that manage the infrastructure, and the possession of software and applications.[269] As a result, cloud-related income may not necessarily be sourced to the correct jurisdiction under existing law and may even completely escape taxation.

Under traditional tax concepts, a significant amount of cloud-related income will likely be sourced to the physical location of the server, which is flawed for several reasons.[270] Specifically, a server's physical location in a particular jurisdiction does not mean that the cloud-related income is economically related to that jurisdiction. A cloud vendor can locate its servers anywhere in the world without affecting the pretax income it generates from its cloud operations, which means that the provision of cloud services does not depend on the location of the server. In other words, the server's location does not necessarily signify the jurisdiction in which the income economically originated. Without a sufficient economic connection, the justification for granting that jurisdiction taxing authority over cloud computing income disappears.

Additionally, servers are relatively easily moveable,[271] which means that using the server location as the sole basis for granting a jurisdiction taxing authority may allow taxpayers to readily manipulate the rules to their advantage. For instance, a cloud vendor may structure its operations so that all of its servers are located in a tax haven or other favorable tax jurisdiction. A rule that sources income to the server location will enable the vendor to pay little to no tax despite the substantial revenue it generates from customers in countries like the United States. This result undermines the goal of the international tax regime to minimize double taxation and non-taxation.[272]

Moreover, from a tax administrative perspective, the server location may not constitute a practical basis for sourcing cloud computing income. Taxing authorities would need to be able to track the activities that occur on servers within their jurisdiction. Withholding agents may also face challenges in satisfying their withholding obligations with respect to payments made to foreign cloud vendors for income sourced to U.S. servers because customers generally do not know and are indifferent to which server hosts the cloud computing services that they access.[273]

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[269] See discussion *supra* Part I.A.

[270] See discussion *supra* Part II.B.

[271] Buchanan, *supra* note 29, at 2133.

[272] *See* UN MODEL TREATY, *supra* note 13, at vii; Graetz and O'Hear, *supra* note 13, at 1025–27.

In addition, we need regulatory guidance to determine the place of use in the cloud computing context when sourcing royalty income because the current application of the place of use rules does not easily apply to SaaS transactions. As discussed above, the Code sources royalty income to the place of use of the intellectual property.[274] This rule is premised on the idea that property that is leased or licensed is a productive asset in its own right and therefore, the income should be sourced to the economic situs of such property.[275] Based on this premise, the place of use rule is the most appropriate rule for determining the source of income derived from intangible property.[276] Hence, we do not need a broad legislative solution to modify how royalty income is sourced, but rather regulatory guidance to clarify the rule's application to SaaS transactions.

Generally, the place where the intangible property derives its legal protection is treated as the place of use for sourcing purposes. But in a typical SaaS transaction, the developer does not necessarily need to obtain copyright protection in the country where a customer uses its software and applications.[277] This means that the place of protection is not a good measure of the place of use for these types of transactions and the way we used to think about the taxation of intellectual property no longer makes sense. Accordingly, royalty income generated in the cloud should not be sourced to the jurisdiction(s) that provide the cloud vendor with copyright protection.

A normative basis for the source rules should focus on the geographic location where an economic nexus exists. One possible alternative would be to source the cloud-related income to where the cloud computing resources were developed. That is, considering where the research and development was performed may be more indicative of where the income economically originated. Another option would be to source the income to where the cloud computing services are marketed, which would focus on the location of the customers. Alternatively, the cloud-related income could also be sourced to the jurisdiction from which the capital originated to develop the cloud computing resources. I argue that the second alternative, the location of the customer, is the preferable alternative because the cloud-related income not only has an economic connection to the customer's location, but also would treat SaaS transactions most similarly to traditional software licensing.[278] Thus, application of this alternative would promote the tax policy goals of equity and efficiency. However, as discussed above, a source rule based on the location of the customer also creates administrative and enforcement difficulties. Therefore, for practical reasons, this may not be a feasible solution.

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[273] *See* MELL & GRANCE, *supra* note 1, at 2.

[274] *See* I.R.C. §§ 861(a)(4), 862(a)(4) (2012). *See also* discussion *supra* Part II.B.1.

[275] Blessing, *supra* note 100, at V-A.

[276] Erin L. Guruli, *International Taxation: Application of Source Rules to Income from Intangible Property*, 5 HOUS. BUS. & TAX L.J. 205, 226 (2005).

[277] *See* Soghoian, *supra* note 14, at 364.

In summary, addressing these sourcing issues through regulations is an important first step from a policy perspective. It would help clarify the source of income that cloud computing transactions generate in a manner consistent with sound tax policy and would provide taxpayers with the guidance necessary to comply with their U.S. tax obligations. However, any regulations would also have to address the appropriate basis on which to allocate the income among the different jurisdictions and would have to consider administrative issues, such as how the tax is to be enforced. Moreover, as mentioned above, for any changes to be truly effective in minimizing the potential for double taxation and non-taxation, international consensus with respect to the sourcing rules is necessary.

C. Taxable Presence Issues

In light of the problem with taxable presence, Treasury should issue guidance and the United States should revise its bilateral tax treaties so that the creation of a taxable nexus in the cloud computing context does not depend on physical presence. As discussed in Part II.C above, under current law, a cloud vendor will likely have a taxable presence in the jurisdictions where its servers are located. However, a normative approach should reject the OECD's proposal to treat a server as a sufficient basis, in itself, to create a taxable presence in a particular jurisdiction even where the functions conducted through the server constitute an essential and significant part of the business activity.[279]

The emphasis on a server's location in the creation of a taxable presence raises several significant policy issues. First, as Developer's cloud business model demonstrates, this criterion is problematic because physical presence is no longer necessary to establish a business in a particular jurisdiction. Thus, the emphasis that traditional tax principles put on physical presence, and therefore the presence of a server, does not serve as a justifiable basis for identifying the jurisdiction in which a taxable nexus has been created in the cloud computing context.

Second, predicating the existence of a taxable presence on the location of the server will enable taxpayers to easily circumvent this rule because servers are so mobile.[280] As a result, a lot of cloud-related income may completely escape taxation, giving rise to a significant loss of revenues for governments worldwide. Specifically, if a cloud vendor creates a permanent establishment in a tax haven by locating its servers—comprising an essential and physical part of its business—in that jurisdiction, then the cloud vendor's active business income will be subject to a zero or very low rate of taxation at the source. Because current law grants the source jurisdiction sole taxing authority over active income attributable to the permanent establishment, the cloud vendor's residence jurisdiction would not be entitled to impose any tax on such income.

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[278] *See* I.R.C §§ 861(a)(4), 862(a)(4) (sourcing rental or royalty income to the place where the asset is used irrespective of where the asset was developed or where the capital originated).

[279] *See* OECD COMMENTARY, *supra* note 163, art. 5(1), ¶¶ 2, 42.2, 42.3, 42.9.

[280] *See* Buchanan, *supra* note 29, at 2133.

The existing rules therefore undermine traditional notions of tax equity and efficiency by enabling developers that sell their software on the cloud to potentially pay less tax than developers that sell software on a physical disk or through electronic downloads. In addition, because a cloud vendor can easily structure its transactions so that its servers are located in a tax haven, a rule that relies on the server's location to give rise to a taxable presence also challenges the international tax regime's goals by giving rise to non-taxation of cloud-related income.

Finally, allowing a server to trigger the creation of a taxable presence also gives rise to issues of administrability of the tax system. Because cloud vendors often direct a transaction through the server with the least traffic, they may direct customers' requests to access the software or data through servers in different locations without the customers' knowledge.[281] Therefore, it is possible that this situation results in multiple places of business. If the law deems use of multiple servers to create a permanent establishment in numerous jurisdictions, this raises the practical question of how the taxing authorities and taxpayers will be able to determine which transactions occurred through which server for purposes of attributing the income to the appropriate jurisdiction.[282]

Moreover, even if the law does *not* treat the location of the servers as creating a taxable presence, policy makers still ought to modify the existing tax rules to eliminate the physical presence requirement. Because cloud computing occurs virtually and lacks a physical connection to a specific geographic location, especially when the server location is disregarded, a cloud vendor may completely avoid creating a permanent establishment in any jurisdiction. As a result, traditional treaty concepts will likely lead to a significant reduction in source-based taxation of cloud computing transactions.[283] Instead of giving the source country taxing authority over income economically generated within its borders, the jurisdiction in which the cloud vendor is a resident will have sole taxing authority over such income.

But, from a tax policy perspective, a shift from source-based taxation to residence-based taxation is untenable. Corporations can easily choose their country of residence by incorporating under the laws of that jurisdiction. For instance, as revealed in the hearing held by the Senate Homeland Security and Government Affairs Permanent Subcommittee on Investigations regarding Apple Inc.'s tax practices, Apple was able to avoid paying taxes on billions of dollars in profits by shifting income to tax havens and using stateless entities, or entities that are not resident in any country.[284] Similarly, a cloud vendor may completely avoid paying taxes on its active business income merely by operating through a corporation organized in a tax haven. This tactic would enable a cloud vendor to generate income that is not taxable anywhere, and would also take tax revenues away from countries where the income economically originates and which have an equitable basis for taxing such income. To prevent abuse, countries should modify the rules to eliminate the possibility for stateless entities.

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[281] *See* MELL & GRANCE, *supra* note 1, at 2.

[282] Fleming, Jr., *supra* note 79. Customers are also often unaware of and indifferent to which servers their transactions are routed. *Id.*

[283] *See* TREASURY WHITE PAPER, *supra* note 39, at 33.

Therefore, I conclude that, instead of predicating taxable presence on the existence of a physical presence in a jurisdiction, a normative approach should focus on when a taxpayer has a sufficient economic nexus within a jurisdiction to justify allocating to that jurisdiction sole authority to tax the active income generated by that taxpayer. In the cloud computing context, the economic activity that generates the cloud-related income generally occurs not only at the location of the cloud vendor's employees and servers, but also at the location where the cloud computing services are being marketed, where the cloud computing resources were developed, and where the capital necessary to develop computing resources originated.

A consequence of the economic nexus approach is that a taxable presence will potentially exist in multiple jurisdictions. Although this situation will likely create some administrative difficulties, an economic presence test ensures that the source jurisdiction retains its authority to tax the economic activity generated within its borders, while minimizing the ability of taxpayers to manipulate the source and taxable presence rules to escape taxation altogether.[285]

CONCLUSION

As cloud computing continues to grow and replace traditional software sales, the tax consequences of these transactions have become increasingly important. However, to date, little guidance has been issued. As a result, companies, taxing authorities, and tax practitioners have no choice but to try to apply traditional tax concepts to these new forms of conducting business. Doing so raises many novel tax issues because the technological advances associated with operating in the cloud strain the application of traditional U.S. federal income tax principles. These issues have created uncertainty, compliance burdens, and liability risks for companies and a potential loss of revenue for the government. Moreover, the application of traditional tax concepts to cloud computing may also result in the tax system subjecting similar streams of income to different tax ramifications and may result in double taxation or non-taxation of cloud-related income. These ramifications run counter to fundamental notions of equity and efficiency and may hinder certain investments.

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[284] *Offshore Profit Shifting and the U.S. Tax Code – Part 2 (Apple Inc.)*: *Hearing Before the Permanent Subcomm. on Investigations of the S. Comm. on Homeland Sec. & Gov't Affairs*, 113th Cong. 2 (2013), *available at* http://www.gpo.gov/fdsys/pkg/CHRG-113shrg81657/pdf/CHRG-113shrg81657.pdf.

[285] To further minimize tax abuse and administrative issues, as one scholar has suggested, it might be beneficial to completely eliminate the ability of a server to create a permanent establishment regardless of the server's functionality. *See* Cockfield, *supra* note 8, at 186–88. Instead, I argue that a better alternative is that a permanent establishment should only be established at the location of (1) employees who engage in sufficient economic activity that is related to the cloud computing transaction, and (2) end users.

In light of these problems and the prevalent use of cloud computing, federal policy makers should clarify how U.S. federal income tax principles apply to businesses operating in the cloud. This Article proposes that instead of attempting to solely rely on applying existing tax laws to these new transactions, Treasury should promulgate regulations that (1) specify how cloud computing transactions should be characterized for tax purposes, and (2) provide for sourcing and taxable presence rules that do not rely on the location of the server or the existence of a physical presence. These changes will help minimize the uncertainties and economic distortions that are created when outdated tax concepts are applied to new technologies.

Ultimately, however, to sufficiently address the issues that cross-border cloud computing creates and to minimize the potential for double taxation and non-taxation of these transactions, we need an international solution. Unfortunately, given the many complex questions that cloud computing raises, the absence of a simple practical solution, and the extensive international collaboration needed to address the numerous issues that cross-border cloud computing creates, a successful international solution is not likely to occur in the foreseeable future.