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POLICY BRIEF

16-16 Apple's Tax Dispute With Europe and the Need for Reform

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On August 30, 2016, European Competition Commissioner Margrethe Vestager demanded that Ireland reclaim €13 billion ($14.5 billion) from Apple Inc. to redress improper "state aids" conferred on the company through Irish tax rulings in 1991 and 2007.[1] The European Commission's demands triggered a huge uproar—from Ireland, Apple, other multinational corporations, and the US Treasury Department. According to the Commission, Apple paid an effective corporate tax rate of less than 1 percent between 2003 and 2014, through a sweetheart tax deal with Irish tax authorities. The Commission alleged this to be a breach of EU state aid rules and instructed Ireland to claim unpaid taxes from Apple. Both Apple and Ireland announced they would appeal. Apple denied the extremely low effective tax rate claimed by the Commission and insisted that it had paid all taxes in accordance with existing treaties, laws, regulations, and rulings. Ireland appealed in light of its position as a favored site for multinational corporations doing business in Europe. The US Treasury Department, aligning with Apple and Ireland, criticized the Commission's new approach as applied in the Apple case, as well as the retroactive component of the decision and its detrimental impact on the ability of member states to honor bilateral tax treaties.

If the opinions of the European Court of Justice (ECJ) in pending cases grant the Competition Commissioner broad powers to override member state domestic tax laws and rulings, future state aid decisions could become the most important investment policy measures in Europe over the next few years. In a worst-case scenario for Europe, many multinational corporations could dial back their planned investments.

Apple's tax dispute with the Commission, along with similar but smaller Commission cases against US firms, have sparked renewed congressional interest in US business tax reform—and have highlighted the disadvantage at which US law may be placing US multinational corporations.

This Policy Brief recounts European Commission demands and the reactions of various parties, examines the implications for Europe if the Commission prevails, previews the US tax reform agenda in 2017, and calls for comprehensive tax reform to strengthen the position of the United States and US-based companies in global competition.

ACT ONE: EUROPEAN COMMISSION DEMANDS AND REACTIONS OF PARTIES

State Aid: Legal Background

Article 107 (1) of the Treaty on the Functioning of the European Union defines state aid as "any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring certain undertakings or the production of certain goods."[2] The treaty prohibits state aid that distorts trade between EU member states.

1. See "State Aid: Ireland Gave Illegal Tax Benefits to Apple Worth up to €13 Billion," European Commission press release, August 30, 2016, europa.eu/rapid/press-release_IP-16-2923_en.htm (accessed on September 19, 2016).

2. "Consolidated Version of the Treaty on the Functioning of the European Union," eur-lex.europa.eu/homepage.html?locale=en (accessed on September 19, 2016).

According to the Commission, to qualify as state aid, four criteria must be met:[3]

1. There has been an intervention by the State or through State resources which can take a variety of forms (e.g., grants, loans at low interest rates, tax relief, financial guarantees, government shareholdings, providing goods or services on preferential terms, etc.);
2. The intervention gives the recipient an advantage on a selective basis, for example, a benefit to specific companies or industry sectors, or to companies located in specific regions;
3. Competition has been or may be distorted;
4. The intervention is likely to affect trade between member states.

In 2013 the European Commission opened investigations into the tax practices of several member states seemingly designed to attract foreign direct investment. The investigations were expanded to all 28 member states in 2014. The Apple case was launched in June 2014, together with cases targeting Starbucks and Fiat Finance and Trade.[4] In October 2015, the Commission concluded that selective tax advantages granted to Fiat in Luxembourg and to Starbucks in the Netherlands constituted illegal state aid and instructed the member state tax authorities to recover €20 million to €30 million of alleged tax benefits.[5]

According to the Commission, Apple paid an effective corporate tax rate of 1 percent or less between 2003 and 2014, and as little as 0.005 percent in 2014—much less than the statutory Irish corporate tax rate of 12.5 percent.

European Commission Claims in the Apple Case

The European Commission's investigation concluded that Apple received illegal state aid through two Irish tax rulings in 1991 and 2007.[6] These rulings allowed two Apple subsidiaries incorporated in Ireland, Apple Sales International and Apple Operations Europe, to book almost all sales generated in the European market in Ireland and to internally allocate the majority of profits (derived largely from Apple's intellectual property) to two loosely described "head offices" that had no employees and were, according to the Commission, taxed nowhere.[7] The Commission alleged that these tax rulings endorsed internal profit allocation methods that had no economic justification but allowed Apple to avoid taxation.

According to the Commission, Apple paid an effective corporate tax rate of 1 percent or less between 2003 and 2014, and as little as 0.005 percent in 2014—much less than the statutory Irish corporate tax rate of 12.5 percent. Competition Commissioner Vestager therefore regarded the tax rulings as selectively favoring Apple and therefore breaching EU state aid rules. She ordered Ireland to recover from Apple unpaid taxes for the years 2003–14 amounting to €13 billion ($14.5 billion), plus interest.

The Commission suggested that other member states should claim taxes from Apple if they think that profits should have been recorded in their jurisdictions rather than in Ireland. Such claims would reduce Apple's taxable income in Ireland and thus the amount to be recovered by Ireland from Apple.

Apple's Response

Following the Commission's claim, Apple's CEO, Tim Cook, said the company would appeal the ruling to the European courts.[8] He argued that the Commission's claim of a special deal between Apple and the Irish government "has no basis in fact or in law" and asserted that Apple follows the law and pays all the taxes its owes. He emphasized Apple's contribution to investment and job creation in Ireland and Europe, as well as its active participation in international tax reform efforts. Cook criticized the Commission for undermining the

3. See "State Aid Control," European Commission, ec.europa.eu/competition/state_aid/overview/index_en.html (accessed on September 19, 2016).

4. See "State Aid: Commission Investigates Transfer Pricing Arrangements on Corporate Taxation of Apple (Ireland), Starbucks (Netherlands), and Fiat Finance and Trade (Luxembourg)," European Commission press release, June 11, 2014, europa.eu/rapid/press-release_IP-14-663_en.htm (accessed on September 19, 2016).

5. See "Commission Decides Selective Tax Advantages for Fiat in Luxembourg and Starbucks in the Netherlands Are Illegal under EU State Aid Rules," European Commission press release, October 21, 2015, europa.eu/rapid/press-release_IP-15-5880_en.htm (accessed on September 19, 2016).

6. See "State Aid: Ireland Gave Illegal Tax Benefits to Apple Worth up to €13 Billion," European Commission press release, August 30, 2016, europa.eu/rapid/press-release_IP-16-2923_en.htm (accessed on September 19, 2016).

7. When the Commission publishes its full decision, the legal structure of "head offices" should be described more precisely.

8. See "A Message to the Apple Community in Europe," August 30, 2016, www.apple.com/ie/customer-letter/ (accessed on September 19, 2016). An appeal would first go to the General Court, then to the Advocate General, and finally to the European Court of Justice.

sovereignty of EU member states, creating uncertainty for the business climate in Europe, and breaking international norms with the retroactive component of its decision.

In an interview on September 1, 2016, Cook confirmed that Apple would put a certain amount of money into an escrow account until the case is concluded. He said the alleged effective tax rate of 0.005 percent in 2014 claimed by the Commission was a "false number" and insisted that Apple paid $400 million in taxes to Ireland in 2014.[9] Cook also rejected the Commission's assertion that Apple's "head offices" were stateless for taxation purposes. He noted that Apple's worldwide income is subject to US corporate tax once the company repatriates its earnings and forecast some repatriation in 2017.[10]

Ireland's Response

After the European Commission issued its decision, Ireland's finance minister, Michael Noonan, stated that Ireland "disagrees profoundly" and "has no choice but to seek Cabinet approval to appeal the decision before the European courts."[11] The Irish government asserted that it did not grant any aid to Apple and that all taxes had been paid in compliance with Ireland's tax laws.

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The Commission's decision posed significant political challenges to the minority Irish government. Ireland attracts foreign investors by combining its EU membership, which brings access to the European single market, with its low corporate tax rate. Following the Irish banking crisis in 2008 and the Brexit vote on June 23, 2016, Ireland has become even more dependent on EU markets and inward foreign direct investment. The Irish government wants to maintain its reputation as a stable and attractive location for investors because of the employment brought by multinational corporations and the taxes they pay.

Passing up a cash windfall from Apple was a hard political decision, particularly given the seven years of austerity measures the country had to take between 2008 and 2014 to recover from the banking crisis. [12] Even after cutting public spending and raising personal income taxes, Ireland's gross national debt was €201 billion at the end of 2015 (94 percent of GDP).[13] Nevertheless, on September 2, 2016, the Irish government announced it would appeal the Commission's decision to the European courts.[14] Meanwhile, the government will recover the alleged state aid from Apple and hold the funds in an escrow account until the appeal is decided.

US Treasury's Response

The European Commission started to investigate member state transfer pricing rules in 2014. Soon the array of cases against US multinationals (Starbucks, Amazon, Apple, and McDonald's) raised serious concerns in the US Treasury Department.[15] Fearing discrimination, on February 11, 2016, US Secretary of the Treasury Jacob J. Lew sent a letter to the president of the European Commission calling for

9. "Apple Boss Says €13bn State Aid Ruling 'Maddening,'" September 1, 2016, www.rte.ie/news/2016/0901/813345-apple-reaction/ (accessed on September 19, 2016).

10. Under the United States' worldwide tax system, all profits of US companies and their foreign subsidiaries are subject to the statutory US corporate tax rate of 35 percent, less a credit for foreign taxes paid, no matter where they are generated. Payment of US tax on overseas earnings is deferred until the US company repatriates its overseas income.

11. See "Minister Noonan Disagrees Profoundly with the Commission on Apple," Department of Finance, Ireland, August 30, 2016, www.finance.gov.ie/news-centre/press-releases/minister-noonan-disagrees-profoundly-commission-apple (access on September 19, 2016).

12. The governing party, Fine Gael, as well as its biggest rival, Fianna Fáil, aligned in appealing Apple's tax case. See "Speech of Fianna Fáil Leader Micheál Martin TD on Apple Appeal," September 7, 2016, www.fiannafail.ie/speech-of-fianna-fail-leader-micheal-martin-td-on-apple-appeal/ (accessed on September 28, 2016). The country's third-largest party, Sinn Fein, opposed the appeal. See "Pearse Doherty Demands Public Inquiry into Apple Sweetheart Deal," Sinn Fein, August 30, 2016, www.sinnfein.ie/contents/41334 (accessed on September 28, 2016). Many Irish observers are skeptical that Ireland will see anything like the full €13 billion if the appeal fails, because of tax claims by other EU states against Apple.

13. See "Government Finance Statistics Quarter 4 2015," Central Statistics Office, Ireland, April 20, 2016, www.cso.ie/en/releasesandpublications/er/gfsq/governmentfinancestatisticsquarter42015/ (accessed on September 20, 2016).

14. See "Statement by the Minister for Finance on the Government Decision to Appeal the Apple State Aid Decision," September 2, 2016, Department of Finance, Ireland, www.finance.gov.ie/news-centre/press-releases/statement-minister-finance-government-decision-appeal-apple-state-aid (accessed on September 19, 2016).

15. For the cases against Amazon and McDonald's, see "State Aid: Commission Investigates Transfer Pricing Arrangements on Corporate Taxation of Amazon in Luxembourg," European Commission press release, October 7, 2014, europa.eu/rapid/press-release_IP-14-1105_en.htm (accessed on September 21, 2016) and "State Aid: Commission Opens Formal Investigation into Luxembourg's Tax Treatment of McDonald's," European Commission press release, December 3, 2015, europa.eu/rapid/press-release_IP-15-6221_en.htm (accessed on September 21, 2016).

the Commission to reconsider these investigations.[16] Prior to the Commission's decision on the Apple case, on August 24, 2016, the Treasury released a White Paper titled *The European Commission's Recent State Aid Investigations of Transfer Pricing Rulings*, which detailed the concerns raised in Secretary Lew's February letter and called for "a return to the system and practice of international tax cooperation that has long fostered cross-border investment between the United States and the EU Member States."[17]

The US Treasury Department made three arguments against the Commission's investigations. First, the Commission applied a new approach, departing from earlier decisions. Unlike previous investigations, the Commission did not separately evaluate the advantage and selectivity criteria. Instead the two criteria were conflated. Moreover, the Commission viewed a tax ruling issued to a particular company (Apple) as selective without considering whether a similar ruling had been or could be issued to other companies in the same circumstances. As a result, the Commission put itself in the position of a supranational tax authority, judging whether the member state followed its own tax law in issuing the contested rulings. Second, given that the Commission applied a new approach in these investigations, it should not have sought retroactive recoveries, which contradicted the principle of legal certainty with respect to closed tax years. Third, the Commission's new approach broke international norms by overriding established OECD Transfer Pricing Guidelines, which are customarily incorporated into bilateral tax treaties. The Commission thereby undermined the ability of its member states to honor the transfer pricing rules set forth in their own bilateral tax treaties.

From the claims and responses, it appears that the key legal issues when the Apple and other cases reach the ECJ will be selectivity and retroactivity. In reaching its decision, the ECJ will no doubt consider how much leeway to give the Competition Commission in its budding role as a supranational tax authority.

An underlying consideration for the US Treasury is the potential loss in US tax revenues stemming from the Commission's decisions. Because US companies can claim foreign tax credits against their domestic tax liability when they repatriate overseas income, any additional taxes collected by EU member states as a result of these decisions will erode US tax revenue. This is why Representative Kevin Brady, chairman of the House Ways and Means Committee, characterized the Apple decision as "a predatory and naked tax grab."[18] Other members of Congress made similar comments, at the same time calling for US tax reform.[19]

In addition to objections expressed by Treasury and Congress, 185 US chief executive officers aligned themselves with Apple. In a letter sent to leaders of the EU member states, they called the Commission's decision "a grievous self-inflicted wound" and asked member states to work together to overturn it.[20]

ACT TWO: IMPLICATIONS FOR EUROPE

In two headline cases (Apple and GDF Suez), Commissioner Vestager has tackled national tax rulings that she claims conferred benefits on individual firms that were arguably not available to other companies and accordingly were selective.[21] In a little-known case now making its way to the ECJ, the Advocate General held that a Spanish tax code provision (not a tax ruling) that allowed a special deduction for amortizing the goodwill of a foreign firm acquired by a Spanish firm constituted state aid.[22]

Spanish corporate tax law allows companies with a shareholding of at least 5 percent in a foreign company

16. Letter from Secretary Jacob J. Lew to the President of the European Commission, Jean-Claude Juncker, February 11, 2016, www.treasury.gov/resource-center/tax-policy/treaties/Documents/Letter-State-Aid-Investigations.pdf (accessed on September 21, 2016).

17. The White Paper is available at www.treasury.gov/resource-center/tax-policy/treaties/Documents/White-Paper-State-Aid.pdf (accessed on September 21, 2016).

18. See "Brady Statement on the European Commission's Multibillion-Dollar Tax Bill to Apple," August 30, 2016, waysandmeans.house.gov/brady-statement-eu-tax-bill-apple/ (accessed on September 21, 2016).

19. Secretary Lew also called for US tax reform in a statement on September 12, 2016. See "Europe's Bite out of Apple Shows the Need for US Tax Reform," *Wall Street Journal*, September 12, 2016, www.wsj.com/articles/europes-bite-out-of-apple-shows-the-need-for-u-s-tax-reform-1473722046 (accessed on September 21, 2016). The third section of this Policy Brief discusses the US tax reform agenda in 2017.

20. See "Business Roundtable Letter to EU Heads of State or Government Regarding State Aid Investigations," *Business Roundtable*, September 16, 2016, businessroundtable.org/resources/business-roundtable-letter-eu-heads-state-or-government-regarding-state-aid-investigations (accessed on September 21, 2016). Unless all member states weigh in against the Commission, they cannot overturn its decision.

21. On September 19, 2016, the European Commission launched an investigation into Luxembourg's tax rulings issued to GDF Suez. See "State Aid: Commission Opens In-Depth Investigation into Luxembourg's Tax Treatment of GDF Suez (now ENGIE)," European Commission press release, September 19, 2016, europa.eu/rapid/press-release_IP-16-3085_en.htm (accessed on September 20, 2016).

22. The institution of the Advocate General is an arm of the European Court of Justice, but the court can reverse its opinions. See curia.europa.eu/juris/document/document.jsf?text=&docid=182304&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=552607 (accessed on September 19, 2016).

to deduct some expenses against domestic tax liabilities. Complaints were brought to the European Commission in 2005 because the deduction provided benefits only to companies with foreign shareholdings, not to companies that operate solely in Spain. The Commission initiated a formal investigation in October 2007. It concluded that the Spanish corporate tax law violates state aid rules and directed Spain to recover the taxes.

Three Spanish companies appealed the case to the General Court of the Union. It decided in favor of the Spanish companies, reasoning that the Commission had failed to meet the selectivity criterion because the law in question was part of the Spanish tax code, available to any Spanish firm with foreign shareholdings.[23]

The Commission appealed the General Court's decision to the Advocate General, who reversed the General Court.[24] Both Ireland and Germany submitted amicus briefs, Ireland on the side of the Spanish firms. The Spanish case now goes to the full ECJ, which often sides with the opinion of the Advocate General.

In a similar fashion, both Apple and the Irish government will appeal the Commission's decision, first to the General Court, then to the Advocate General, then to the full ECJ. Selectivity and retroactivity are likely to be the main arguments.

The ECJ could join the Spanish case, the Apple case, the GDF Suez case, and others, or it could hear them separately. The ECJ might choose to distinguish between the facts of the various cases, holding that in some instances the ruling, code, or law was selective and in other instances it was not. In the GDF Suez case, for example, the Commission argues that the tax ruling was inconsistent with Luxembourg's own tax law. The ECJ might dive into the weeds with respect to this assertion, performing the role of a supranational tax court to determine the consistency (or lack thereof) of the ruling with Luxembourg's law. In the Spanish case, the ECJ could hold that a tax law is not on its face selective unless it is so narrowly drawn that it benefits only one or two firms.

The ECJ could limit the retroactive reach of state aid decisions that override national tax laws or rulings. Retroactive changes in tax law are not forbidden,[25] but they are regarded as bad public policy, because retroactivity creates doubt about legal stability, upsets financial plans, and prompts firms to seek higher "hurdle rates" before undertaking an investment. The ECJ might give these considerations weight.

To be sure, in the realm of subsidies, state aid decisions have been retroactive: In principle, the subsidy received by a firm has to be repaid, even years later. But subsidies are typically one-off transactions, negotiated between the government and a particular firm. By contrast, tax rulings and laws often have broader application, and tax returns are customarily "closed" after the statutory period for audit review. The argument against retroactivity is much stronger for taxation than for subsidization, because taxation affects every business firm whereas subsidies typically reach just a favored few.

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The terms of ECJ rulings over the next few years will go far in determining the scope of the Competition Commissioner's power to override national tax laws and rulings. If the ECJ grants the Commissioner wide scope, the consequences will be profound.

Within Europe (as within other regions), national tax practices vary enormously. Each member state defines the corporate tax base in its own way, with the result that some firms are favored over others in the same member state. To illustrate, analysis done at the Peterson Institute finds that the actual average tax rate paid by 84 large German firms over the period 1997 to 2015 was 30.5 percent, but the standard deviation of rates was plus or minus 77.1 percent.[26] Tax variations of this magnitude within a single country reflect idiosyncratic differences in applicable deductions, credits, and other features that determine the tax base and actual

23. See "The Court Annuls the Commission Decisions Declaring the Spanish Tax Regime Allowing for the Deduction of Shareholdings in Foreign Companies to be Incompatible with the Internal Market," November 7, 2014, General Court of the European Union, curia.europa.eu/jcms/upload/docs/application/pdf/2014-11/cp140145en.pdf (accessed on September 19, 2016).

24. The decision by Advocate General Melchior Wathelet, issued July 28, 2016, reversing the General Court is *European Commission v. World Duty Free Group*, formerly Autogrill España SA (C20/15 P), Banco Santander SA, Santusa Holding SL (C21/15 P).

25. For example, the ex post facto clause of the US Constitution forbidding retroactive changes (Article I, Section 9, Clause 3) applies only to criminal statutes.

26. Research is underway at the Peterson Institute on actual taxes paid by more than 2,000 large firms worldwide based on a proprietary Thomson Reuters dataset.

taxes paid. It is easy to imagine an aggressive Competition Commissioner viewing these differences as state aids.

It is thus conceivable that Commissioner Vestager's successors might use broad ECJ rulings to attack a wide range of national tax laws. In an extreme scenario, if the ECJ broadly defines state aids and permits unlimited retroactivity, the chilling effect on investment decisions would be substantial. In a more benign scenario, the ECJ might limit the scope of practices properly defined as state aids to egregious cases of clearly selective tax rulings and limit the retroactive reach of state aid decisions to five years or less. Under that scenario, the chilling effect should be modest or insignificant.

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ACT THREE: US TAX REFORM AGENDA IN 2017

Four inconvenient facts should drive US business tax reform in 2017:

- The US federal statutory corporate tax rate of 35 percent far exceeds the norm for advanced countries (about 27 percent).[27]
- The US worldwide tax system imposes the 35 percent rate on foreign earnings (allowing for foreign taxes paid), unlike territorial systems, which either are limited to the taxation of domestic earnings or tax passive foreign earnings at very low rates (e.g., 10 percent). Territorial systems are now the norm among advanced countries.
- Many firms have sought relief from burdensome US taxation through inversions.[28]
- Private US investment in plant and equipment and research and development (R&D) is considerably below historical norms.[29]

The US business tax system was last revised in a serious way during the Reagan administration, more than 30 years ago. Much has changed since then. In particular, foreign countries that compete head to head with the United States have enacted more-friendly business tax systems. House Speaker Paul Ryan, Ways and Means Committee Chair Kevin Brady, and other congressional leaders have urged business tax reforms with three main features: replacing the current corporate income tax with a cash flow tax of 20 percent,[30] applying taxes on a territorial rather than worldwide basis, and border adjustment of the tax.[31]

These sweeping tax reforms would make the United States an exceptionally favorable location for investment and eliminate tax motivations for corporate inversions. But with respect to Apple's tax drama, the reforms would not alter the relevant incentives. The core incentive is that intellectual property earnings—income arising from patent, copyright, or trademark royalties; fees related to trade secrets; and sales of intellectual property–intensive items like iPhones—can be "sourced" for tax purposes in the jurisdiction where title to the intellectual property resides or sales are handled. Such locations can be, and often are, low-tax jurisdictions like Ireland, Switzerland, and Bermuda. But they can also be "normal" tax jurisdictions, like the United Kingdom, which have "patent box" systems for taxing intellectual property income at preferentially low rates, such as 10 or 15 percent.[32]

Is the sourcing of intellectual property income in low-tax jurisdictions or the use of patent box systems improper? The answer should depend, at least in part, on the empirical

27. See "Blue Skies for Business Tax Reform? Part 2: Lower the Corporate Tax Rate," April 19, 2016, RealTime Economic Issues Watch, Peterson Institute for International Economics, piie.com/blogs/realtime-economic-issues-watch/blue-skies-business-tax-reform-part-2-lower-corporate-tax-rate (accessed on September 20, 2016).

28. Inversions occur when a US firm merges with a foreign firm and the new combined firm locates its headquarters outside the United States. According to the Congressional Research Service, the United States experienced a spike in corporate inversions during the last decade: 47 US companies inverted between 2004 and 2014, up from 29 in 1983–2004. Prominent examples are Ingersoll-Rand, Tyco, the PXRE Group, Foster Wheeler, and Coopers Industries. See "New CRS Data: 47 Corporate Inversions in Last Decade," press release, Ways and Means Committee Democrats, July 4, 2014, democrats-waysandmeans.house.gov/media-center/press-releases/new-crs-data-47-corporate-inversions-last-decade (accessed on September 22, 2016).

29. According to the Bureau of Economic Analysis, US private domestic nonresidential investment in structures, equipment, and intellectual property products increased at an average rate of just 3.9 percent a year in 2006–15, compared with 5.5 percent in 1996–2005.

30. A cash flow tax would allow deductions for purchases of plant and equipment and R&D expense, but it would not allow a deduction for interest paid.

31. Border adjustment means that no deduction is allowed for purchases of imported goods or services and that export revenue is excluded from the tax base.

32. Other European countries with patent box systems are Belgium, Cyprus, France, Hungary, Italy, Liechtenstein, Luxembourg, Malta, the Netherlands, Portugal, Spain, the Swiss canton of Nidwalden, and Ireland (where it is called Knowledge Development Box).

interaction between taxation and innovation. Little research has been conducted on the overall responsiveness of innovation to effective business tax rates or the location of R&D facilities to tax incentives.[33] One view holds that a certain amount of innovation will happen regardless of business taxes and that the availability of skilled researchers determines the location of R&D facilities. According to this view, a tax rate of 15 percent on intellectual property earnings would do no more to stimulate innovation or attract R&D activity than a tax rate of 50 percent. Another view holds that the location or level of innovative activity is sensitive to tax rates.

If Congress takes up fundamental tax reform in 2017, it should wrestle with competing views on the connection between taxation and innovation as it designs rules for determining where intellectual property income is taxed and at what rate.

Czarnitzki, Hanel, and Rosa (2011) analyzed a sample of 4,644 Canadian manufacturing firms to examine the impact of R&D tax credits and found positive effects on R&D activity. Dechezlepretre et al. (2016) analyzed the effect of a 2008 change in the United Kingdom's R&D tax incentive program for small and medium-sized enterprises and found that firms that qualified under the new tax scheme doubled their R&D spending and increased patenting by 60 percent. The authors did not find that firms simply reclassified their activities as R&D or that the new patents were of lower quality than patents taken out before the change in the law.

The two studies are suggestive but not dispositive. If Congress takes up fundamental tax reform in 2017, it should wrestle with competing views on the connection between taxation and innovation as it designs rules for determining where intellectual property income is taxed and at what rate.

CONCLUSIONS

Apple's tax dispute highlights the fact that the US corporate tax code puts US-based multinational companies in a less competitive position than their international peers and has made the United States an unfavorable location, from a tax standpoint, in which to set up their headquarters. Fundamental business tax reform should be a high priority for the next administration and Congress in 2017. For its part, the European Commission should carefully consider the investment consequences of overturning member state tax laws and rulings.

33. One reason for the limited research is the difficulty of measuring innovation. Some researchers have used R&D expenditure as an indicator of innovation and accordingly evaluated the impact of tax incentives on R&D spending. Others argue that innovation input indicators, such as R&D expenditure, do not adequately evaluate innovation success.

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