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In this viewpoint, Tourian argues that California's new space transportation regulations do not address the nuances of the space transportation industry and are inconsistent with other transportation industries.

For tax years beginning January 1, 2016, the Franchise Tax Board exercised its quasi-legislative powers to promulgate regulations regarding "space transportation companies." The stated goal of those regulations was to allow space transportation companies the ability to determine their tax liabilities with "much higher degrees of certainty, reducing the need for both audits and disputes that might follow."[1] The FTB boasted that in promulgating those regulations, "the State of California has always prided itself on being in the technological forefront."[2]

The adage that "pride comes before a fall" applies to Cal. Code regs., tit. 18, section 25137-15.[3] The FTB lost the narrative when it decided to piggyback draft regulations provided by private industry. What followed was a set of rules inconsistent with other transportation industries.

The following analysis argues that California's new space transportation regulations are inconsistent with other transportation industries. The analysis first provides a factual background of the space transportation industry and reg. section 25137-15. The analysis then argues that the regulations blur the nuances of what comprise space transportation activities; *misapply* "cost of performance" (COP) rules to the space transportation industry; and under the guise of clarity, treat business income not earned from space transportation services differently from business income not earned from transportation services performed by other transportation companies.

I. Factual Background

The space launch industry can be divided into three parts: launch service providers; launch site operators (that is, spaceports); and launch vehicle manufacturers.[4] Those segments are interrelated, when launch providers provide services in addition to specific launches, such as payload processing, Earth station equipment manufacturing, space insurance, and ground control operations.[5]

[1] California Franchise Tax Board, title 18 California Code of Regulations section 25137-15, Office of Administrative Law Matter No. 2017-0823-03 Regular(S), Exhibit 3, "Notice of Proposed Rulemaking/ Public Hearing — Published April 21, 2017," at 3 (2017).

[2] *Id.*, at 2.

[3] Unless otherwise specified, section references are to the California Revenue and Taxation Code in effect, and regulation section references are to the applicable California regulations promulgated thereunder.

[4] Michael C. Mineiro, "Law and Regulation Governing U.S. Commercial Spaceports: Licensing, Liability, and Legal Challenges," 73 *J. Air L. & Com.* 759, 760 (2008).

[5] James V. Baird, "Space Commercialization and the Federal Income Tax," 51 *J. Air L. & Com.* 897, 926 (1986).

Preparing for each launch is an arduous process in which launch vehicles are assembled and tested at many different locations. Additional testing is performed at the launch site, in addition to loading propellants, and maintaining telecommunication links between the shuttle and ground.[6] Spaceports also act as satellite ground stations, constantly monitoring how payloads fare in space.[7]

The primary metric California uses in apportioning income for the space transportation industry is the mileage factor. The different types of orbit and how satellites are placed in orbit are discussed below.

A. Types of Orbit

An orbit is a regular, repeating path an object in space takes around another one. An object in an orbit is called a satellite. Satellites can be natural, such as Earth or the moon, or man-made, such as the International Space Station.[8]

Generally, satellites launched to circle the Earth are either at low earth orbit (LEO), medium earth orbit (MEO), or geostationary orbit (GEO).[9]

LEO satellites operate at between 500 to 1,500 km away from the Earth's surface; MEO satellites operate at between 5,000 to 12,000 km away from the Earth's surface; and GEO satellites operate at 36,000 km away from the Earth's surface.[10]

LEO satellites generally provide better signal strength and minimal signal propagation delay since LEO satellites are closest to Earth. However, numerous LEO satellites are required to maintain a network.[11] Conversely, GEO satellites cover large geographical areas, and require only a few satellites to maintain a network. GEO satellites also are less likely to crash because of space debris. However, because of their distance from the Earth, GEO satellites cost considerably more as larger antennas are required, more fuel is required to launch them into space,[12] and more expensive vehicles are required for their launch.[13]

B. Launch Process and Satellite Placement

Launching and placing satellites in orbit takes several steps. The goal is to place satellites at an orbital velocity to achieve balance between the Earth's gravitational pull and the satellite's inertia to keep the path of the satellite curving like the Earth's curved surface, rather than flying off in a straight line.[14]

Rockets are generally aimed straight up during the launch phase. This gets the rocket through the thickest part of the atmosphere, minimizing fuel consumption. After a rocket launches straight up, the rocket's inertial guidance system calculates necessary adjustments to tilt the rocket to the desired flight plan.[15] The first stage consumes the most fuel because a rocket must transport its own weight, as well as the entire launch vehicle. Each rocket engine operates until its fuel is exhausted, at which time it separates from the rest of the launch vehicle and falls to the ground.[16]

The next rocket engine continues its trajectory. The second stage has considerably less work to do, since the rocket is already traveling at high speed and the rocket's weight has significantly decreased because of the separation at the first stage. If the rocket has additional stages, the process will repeat until the space vehicle is in space.[17]

Once in orbit, the final rocket falls away, and the craft uses smaller rockets that guide the spacecraft to release satellites at the optimal orbit. Unlike the main rocket engines, those maneuvering rockets are reused.[18]

[6] Basics of Space Flight Learners' Workbook (Dec. 1995) Chapter 14. Launch Phase.

[7] Spaceport America, "Spaceport America Business Plan Bringing the Future to the Present 2016-2020" (July 2017).

[8] National Aeronautics and Space Administration, "What Is an Orbit?" (July 2010).

[9] EMEA Satellite Operators Association, "Satellite Orbits."

[10] RF Wireless World, "GEO vs. MEO vs. LEO vs. Molniya Satellite."

[11] *Id.*

[12] *Id.*

[13] Cannae Corp., "Space Freighters."

[14] Astronomy WA, "How Are Satellites Launched Into Orbit?"

[15] *Id.*

[16] Peter Timm, "Stages of a Rocket Launch," *Sciencing*, Apr. 24, 2017.

[17] *Id.*

[18] *Id.*

II. Reg. Section 25137-15 Description

California taxpayers generally determine their apportionment percentages using the standard apportionment rules, found under sections 25120-25141. Section 25137 provides that if the standard allocation and apportionment provisions "do not fairly represent the extent of the taxpayer's business activity" in California, the FTB may require, or a taxpayer may request, modification of the standard provisions to "effectuate an equitable allocation and apportionment of the taxpayer's income."

Section 25137 permits the FTB to promulgate special apportionment regulations for specific situations and industries. Those modifications generally consist of computing the standard apportionment formulas to ameliorate industry peculiarities.[19]

The FTB adopted regulations apportioning and allocating income derived from space transportation activities to provide taxpayers certainty.[20] The FTB effectively classified all space activities as transportation activities, and modeled reg. section 25137-15 based on the special apportionment rules of other transportation industries.[21]

Reg. section 25137-15 applies to space transportation companies[22] deriving more than 50 percent of their gross receipts from space transportation activities.[23] Space transportation activities means the movement or attempted movement of people or property, including launch vehicles, satellites, payloads, cargo, refuse, or any other property to space.[24]

Taxpayers that are space transportation companies must apportion their business income using a mileage and departure factor, weighted at 80 percent and 20 percent, respectively.[25] Both the mileage and departure factors are calculated when a taxpayer recognizes revenue from a launch,[26] and not necessarily when a launch takes place. All other business income is apportioned using the sales factor, as determined by that taxpayer's mileage and launch factors,[27] rather than the general rules found under sections 25134 through 25136.[28]

The mileage factor is determined by (a) first determining the mileage ratio of each "launch contract"[29] and then (b) combining the contribution to the mileage factor from each launch contract.[30] The mileage factor denominator is the value of all launch contracts combined.

The mileage ratio determines the value of each "launch contract"[31] attributable to California. It is the ratio of the projected mileage of a launch vehicle flying in California (with a cap of 62 miles)[32] divided by the total projected miles a launch vehicle flies, from launch to separation.[33] For example, the specific mileage ratio for a taxpayer with a launch contract projected to travel 1,000 miles is 6.2 percent (62 miles/1,000 miles).[34] The contribution to the mileage factor is $62,000 when the launch contract is worth $1 million.

The mileage factor is calculated by combining the "contribution to the mileage factor" from each launch contract. For example, if a taxpayer has three launch contracts, with two outside

[19] Multistate Audit Technical Manual (MATM), section 7701, "Application of CCR section 25137" (Rev. Dec. 2013).

[20] *See* 25137-15 Regulation File, *supra* note 1, Attachment for Form 399 to Exhibit 2, "Economic and Fiscal Impact Statement (Form 399)," at 1-2.

[21] *Id.*, attachment titled "Summary of First Interested Parties Meeting; Regulation § 25137-15, Space Transportation" to Exhibit 1A, "Meeting Notice and Information, Roster, Regulation Language Proposed by Space X [sic], and Summary for July 9, 2015 Interested Parties Meeting," at 1.

[22] Reg. section 25137-15(c)(1).

[23] Reg. section 25137-15(b)(1).

[24] Reg. section 25137-15(b)(2).

[25] Reg. section 25137-15(c)(2).

[26] Reg. sections 25137-15(c)(3)(A) and (B).

[27] Reg. section 25137-15(e), example, provides a scenario in which a taxpayer earns $3.5 million from "space transportation activities" emanating from three contracts, and $500,000 of "other than space transportation activities," totaling $4 million of receipts. In that example, the taxpayer determines its sales factor from "space transportation activities," derived from receipts totaling $3.5 million. Once the taxpayer determines its sales factor, the full $4 million of business income is apportioned using receipts derived from "space transportation activities."

[28] The application of reg. section 25137-15(e) demonstrates how all business income of a space transportation company is apportioned using those regulations, despite reg. section 25137-15(c)(1) providing that the sales factor will generally be calculated in accordance with sections 25134 through 25137.

[29] Reg. section 25137-15(c)(3)(A).

[30] Reg. section 25137-15(c)(3)(A)4 and 5.

[31] Reg. section 25137-15(b)(6).

[32] Reg. section 25137-15(c)(3)(A)1.

[33] Reg. section 25137-15(c)(3)(A)2.

[34] Reg. section 25137-15(e) example.

California valued at $2.5 million, and the third contract is worth $1 million with a launch contribution of $62,000, the mileage factor is 1.771 percent ($62,000 divided by $3.5 million).[35] The departure factor is the ratio of launches in and out of California.[36] A taxpayer with one-out-of-four launches in California has a 25 percent departure factor.[37]

A taxpayer has a sales factor of 6.42 percent when a taxpayer has a mileage factor of 1.771 percent, weighted at 80 percent, and departure factor of 25 percent, weighted at 20 percent.[38]

III. Broad Definition of 'Space Transportation Activity' Does Not Reflect the Economic Reality

"Space Transportation Activity" is defined as the "movement or attempted movement of people or property."[39] A broad definition was used primarily for administrative ease[40] and is consistent with the rest of the regulation, which provides for a predominant activity test[41] to apportion all business income a space transportation company earns using the mileage and departure factors.

However, income from services generated from each launch contract is far more nuanced. The FTB's one-size-fits-all approach in determining what space transportation activities are does not necessarily reflect what the true economic realities of a space transportation company are, when the component parts of all the activities making up a launch contract are blurred.

The difficulty determining what a "space transportation activity" is can be gleaned from concepts found in the Internal Revenue Code. The IRC sources revenue based on residency rather than apportionment and provides special sourcing rules for space or ocean activities not located in a foreign country, the United States, or U.S. possessions.[42] Space or ocean activities do not include transportation income,[43] international communication income,[44] or natural resource income within a given jurisdiction recognized by the United States,[45] which are sourced differently.

Income from space or ocean activities are U.S.-source income if the income earned is by a U.S. person,[46] and foreign-source income if income earned is by a non-U.S. person.[47] Treas. reg. sections 1.863-8(b)(3)(ii)(A)-(D) provide rules delineating source income between sales and production activities, as well as allocating activities between space and ocean activities, and non-space and non-ocean activities. The regulations provide a non-exhaustive list of space activities.[48] If a transaction is characterized as a service, that service is treated as a space or ocean activity in its entirety when any part of the service is performed in space or international waters.[49]

For federal tax purposes, "transportation income" means any income derived from, or in connection with, the performance of services directly related to the use of a vessel or aircraft.[50] Rev. Proc. 91-12, 1991-1 C.B. 473, section 2.05, sets forth the classes of persons who could derive transportation income. Rev. Proc. 91-12 provides that transportation income is income derived from services performed onboard a vessel or aircraft when those services are performed by the operator (or person related to the operator within the meaning of IRC section 954(d)(3)) during the

[35] *Id.*

[36] Reg. section 25137-15(c)(3)(B).

[37] Reg. section 25137-15(e) example.

[38] *Id.*

[39] Reg. section 25137-15(b)(2).

[40] 25137-15 Regulation File, *supra* note 1, Exhibit 4, "Initial Statement of Reasons," at 1, provides that "the purpose of the proposed regulation at CCR section 25137-15 is to prescribe an apportionment formula for taxpayers engaged in the space transportation industry business, which will provide those taxpayers clarity in connection with how to determine the amount of business income subject to tax by this state."

[41] Reg. section 25137-15(b)(1).

[42] IRC section 863(d)(2)(A).

[43] IRC section 863(d)(2)(B)(i).

[44] IRC section 863(d)(2)(B)(ii).

[45] IRC section 863(d)(2)(B)(iii).

[46] IRC section 863(d)(1)(A).

[47] IRC section 863(d)(1)(B).

[48] Treas. reg. section 1.863-8(d)(1)(i).

[49] Treas. reg. section 1.863-8(d)(1)(ii)(A).

[50] IRC section 863(c)(3)(B).

transportation of passengers or property aboard vessels or aircraft.

Transportation income related to aircraft is further divided between income from services performed onboard and off-board an aircraft.[51] Onboard services are those performed by an operator (or related party as defined under IRC section 954(d)(3)) on the aircraft in the course of transportation of the property, such as cargo handling. Off-board services are services performed off the aircraft and incidental to the operation of such aircraft. Examples are terminal services, such as loading and unloading, and other cargo-handling services. Activities indirectly related to carriage are not considered transportation income.

Treasury regulations further provide discretionary authority regarding uncertain circumstances. A single transaction can be bifurcated, or multiple transactions can be combined to determine what a space or non-space activity is.[52] Taxpayers may also segregate activities between space or non-space activities, or not treat an activity as a space or ocean activity if the activities performed in space are de minimis.[53]

Reg. section 25137-15 does not distinguish the types of services used for a launch, how such activities should be classified or when such services take place during the launch process, such as onboard and off-board services,[54] even when the initial regulations, as drafted by SpaceX, tried to differentiate such component parts.[55]

A launch contract described under reg. section 25137-15(b)(2) may include the sale, launch, maintenance, and surveillance of a satellite, taking years to complete. It remains unclear, for instance, whether a launch service provider should include the sale of a rocket as the sale of tangible personal property[56] or an ancillary part of the ultimate service provided by the space transportation company?[57]

IV. COP That Does Not Measure COP

The FTB's COP application to apportion income from space transportation activities when it weighs every mile equally for apportionment purposes is not consistent with the FTB's COP application in other industries. Furthermore, the FTB failed to consider alternatives provided by the public that could adequately reflect the true income-producing activities of a space transportation company, as used by a COP method.

For tax years starting January 1, 2011, California began sourcing receipts from other-than-tangible personal property by using market-based receipts rather than historic COP rules.[58] The FTB bucked the market-based receipts trend for space transportation companies because the FTB deemed it difficult to apply the "benefit of a

[51] Rev. Proc. 91-12, 1991-1 C.B. 473; *see also* IRS LTR 9042057 (Oct. 19, 1990).

[52] Treas. reg. 1.863-8(d)(1)(i).

[53] Treas. reg. 1.863-8(d)(2)(ii)(B).

[54] Christopher Kelly, "Taxing Space and Ocean Activities," *Tax Notes*, Nov. 16, 1987, p. 735, 738, provides examples of the difficulty of classifying space activities for purposes of IRC section 863.

[55] The initial draft language for reg. section 25137-15 tried to distinguish the multiple components making up space transportation activities. The final regulations do not. The initial draft language that was provided by SpaceX defined "launch-related research and development" and "launch-related revenue." 25137-15 Regulation File, *supra* note 1, Attachment titled "Regulation 25137-15" to Exhibit 1A "Meeting Notice and Information, Roster, Regulation Language Proposed by Space X [sic], and Summary for July 9, 2015 Interested Parties Meeting," at 1-2 (2015). This language remained in the initial amendments. 25137-15 Regulation File, *supra* note 1, Attachment titled "April 13, 2016 Draft Language: Possible Proposed Regulation 25137-15" to Exhibit 1B, "Meeting Notice and Information, Roster, Draft Language, and Summary for April 13, 2016 Interested Parties Meeting," at 1 (2016).

[56] MATM section 7535 "Sales of Tangible Personal Property to the U.S. Government" (Revised Dec. 2013), provides an example of how the FTB sources the sale of missiles to the U.S. government that raises the issue of whether a taxpayer constructing rockets and providing launch services to the U.S. government should treat the rocket as a sale of tangible personal property or a service.

[57] Cal. Rev. & Tax. Code section 242, which was enacted in 2014, provides an exemption for property used in space flight. The legislative history pertaining to section 242 discusses the issue of whether a "space rocket" is qualified property as the rockets themselves are not sold.

Assembly Committee on Revenue and Taxation, Bill Analysis of Assembly Bill No. 777, California 2013-2014 Regular Session, at 5, provides: "In order to qualify under the inventory exemption, a space rocket would have to be sold or leased in the regular course of business. However, it is unclear if SpaceX sells or leases the rockets it manufactures. It appears that SpaceX, instead, provides a service, (that is, delivering items into space). SpaceX might argue that although it does not sell the rockets, the service provided amounts to a sale since portions of the rockets are destroyed on re-entry."

[58] For tax years starting January 1, 2011, section 25128.5 provided an irrevocable annual election for corporate taxpayers to use a single-sales-factor and market sourcing. Taxpayers were required to use the double-weighted sales factor and COP without the election. For tax years starting January 1, 2013, section 25128.7 provided that taxpayers generally use a single sales factor, and source other-than-tangible property using market-based receipts.

service [] received" concept.[59] The FTB tried to promulgate regulations consistent with COP ratios similar to the airline, railroad, and trucking industries.[60]

Air transportation companies determine their sales factor based on a combination of two ratios: time factor; and arrivals and departures factor. The time factor measures the air time of a taxpayer's aircraft spent in California (block to block) compared with the total air time of such aircraft everywhere (block to block). The ratios are divided by aircraft model, weighted at 80 percent.[61] The arrivals and departures factor ratio compares the number of arrivals and departures in California, compared to the total arrivals and departures everywhere by aircraft model, weighted at 20 percent.[62]

The FTB significantly departed from apportioning space transportation activities in a similar manner to the airline industry when it used a mileage factor rather than a time factor. The mileage factor weighs every mile equally for apportionment purposes. It is also analogous to the "interstate ratio" used in apportioning receipts from trucking[63] and railroad companies.[64]

Applying a mileage ratio does not reflect a space transportation company's COP, as every mile traveled should not be treated equally for apportionment purposes. This principle was recognized in *Luckenbach Steamship Co. v. Franchise Tax Board*.[65] *Luckenbach* ruled that California should use "port days" rather than "voyage" days for purposes of apportioning sales from commercial fishing activities. The California Court of Appeal explained that the port day method, which attributes a greater part of the income-producing activity of vessels occurs at ports rather than at sea, more clearly reflected the taxpayer's activities than the voyage day method, which attributed mileage evenly to every location that a vessel traveled.[66]

The principle that not every mile traveled should be treated equally was recognized by the FTB, which used "flight time" to apportion airline industry receipts. The rationale was

[59]25137-15 Regulation File, *supra* note 1, Exhibit 4, "Initial Statement of Reasons," at 2, provides that "generally, the standard apportionment rules now require the location of a service for apportionment purposes to be determined according to where the location of the benefit of a service is received. In cases in which goods or property are transported into space, it is unclear where the benefit of such services is located."

[60]25137-15 Regulation File, *supra* note 1, Attachment titled "Summary of First Interested Parties Meeting; Regulation § 25137-15, Space Transportation" to Exhibit 1A, "Meeting Notice and Information, Roster, Regulation Language Proposed by Space X [sic], and Summary for July 9, 2015 Interested Parties Meeting," at 1, provides: "In response to participants' comments that special transportation industry regulations were a good starting point, staff asked participants if they had any particular regulation in mind. In response participants mentioned the trucking industry regulation, California Code of Regulations, title 18, section 25137-11, as a good starting point."

[61]Reg. section 25137-7(b)(3)(A)(i).

[62]Reg. section 25137-7(b)(3)(A)(ii).

[63]The sales factor for purposes of measuring Allocation and Apportionment of Trucking Companies provides that receipts originating and terminating in California are assigned to California (reg. section 25137-11(c)(4)(A)), and receipts pertaining to shipments passing through, into, or out of California use an interstate ratio (reg. section 25137-11(c)(4)(B)). The "interstate ratio" divides the total number of miles that mobile property travel through California, over the total number of miles traveled everywhere else. (Reg. section 25137-11(b)(5) and example).

[64]Reg. section 25137-9(a)(3) provides that railroad companies must apportion their business income using a special regulation. The sales factor is computed the same as a general business corporation's sales factor, except all per diem and mileage charges collected by the taxpayer are excluded. Also, the sales-factor numerator includes the sum of all receipts from shipments that both originate and terminate in California and that portion of the receipts from each interstate shipment in the ratio of the miles traveled on the taxpayer's lines in California to the total miles traveled on the taxpayer's lines from the point of origin to the destination. Both freight and passenger receipts are determined in this manner.

[65]*Luckenbach Steamship Co. v. Franchise Tax Board*, 219 Cal. App. 2d 710 (Ct. App. 1963).

[66]MATM section 7815 "Vessels Such as Tug Boats and Barges" (Rev. Dec. 2013).

that air time reflected ground time, which is integral for flight performance.[67] Ground services are far more important regarding space transportation activities than the airline industry, let alone trucking or railroad companies, given how new the space transportation industry is, and the amount of testing and other services required to be performed at spaceports in order to carry on successful flight missions.

One potential metric that could have more accurately reflected a space transportation company's income-producing activities in California is the ratio of fuel consumed within the first 62 miles of a launch.[68] The rationale is that most of the work taking place during a launch occurs when the launch vehicle is trying to escape the Earth's gravitational pull. Rocket fuel accounts for 85-90 percent of a launch vehicle's payload.[69] Jet fuel use highly correlates to an airplane's activity within a state.[70] Fuel usage is integral for a launch vehicle to reach the required delta velocity, which is the speed required for a launch vehicle to escape Earth's gravitational pull.[71] Such a ratio might equalize the differentials between different orbits when satellites are released.

However, the FTB was quick to shoot down COP proposals centered on delta velocity,[72] with a high correlation to fuel usage, because it might require calculus.[73]

V. Marked Departure From Prior Regulations When Gross Receipts Test Is Used to Apportion All Income, Rather Than Bifurcation

California's space transportation company regulations treat business income not generated from transportation activities differently from other transportation companies. The FTB used its quasi-legislative function to treat taxpayers similarly situated differently, indefinitely. Even the California Legislature imposed sunset provisions regarding property tax exemptions granted to the space industry.

California's space transportation company regulations differ from other transportation companies by using a "predominant activity" test. If more than 50 percent of a taxpayer's gross receipts are from space transportation activities, then all business income generated by that taxpayer are apportioned using the sales factor calculated under reg. section 25137-15, regardless of whether such business income was generated from a space transportation activity or not.[74]

[67]Regs. 25137-7 and 25101.3, Airlines, Office of Administrative Law File Number #2010-0204-01(S), Attachment titled "F. Air Transportation Association, David N. West, Taxation Coordinator" (1968) to Appendix I to Exhibit 15, "A Final Report of the Assembly Committee on Revenue and Taxation," at 59 (2010), provides that "plane hours is considered the most useful factor, and is perhaps the only factor that produces both the elements of quantity and use which can be used in allocating the mobile property. System plane hours (assuming no acquisitions or dispositions of aircraft during the year) is the number of planes times 24 (hours) times 365 (days). Plane hours in a given state will include hours aloft and all hours on the ground. Use of plane hours required weighting to reflect the variation in their relative capacity and value. Or as is the case in California, plane hours or equivalent aircraft units are developed directly from the published schedule of the company. This procedure has the additional advantage of easily establishing the relative quantities of different aircraft types at the same time providing a ready source for audit verification."

[68]Sixty-two miles was used to be consistent with reg. section 25137-15(b)(7).

[69]Wei Shyy, "Space: The Next Generation," University of Florida, *Explore Magazine* (Fall 2002), provides that about 84 percent of a shuttle's payload is fuel.

[70]California Board of Equalization, "Aircraft Representative Period, Issue Paper Number 17-005" (2017), at 3, provides: "The staff believes that using Jet Fuel Sales as a proxy for aircraft activity is reasonable since deliveries of fuel, on average, should coincide with aircraft activity. The Jet Fuel Study assumes that (1) Jet Fuel Sales are closely related to aircraft activity in California, and (2) California jet fuel prices are closely related to worldwide crude oil prices."

[71]Brian Koberlein, "Why It Takes a Big Rocket to Reach Mars," *Forbes*, Oct. 11, 2016.

[72]25137-15 Regulation File, *supra* note 1, Exhibit 6, "Public Comments," at 1, provides a method based on delta velocity.

[73]*Id.*, Exhibit 8, "Final Statement of Reasons," at 2, provides that the proposal using delta velocity should b rejected because "calculating delta velocity requires calculus, which will cause an undue burden on practitioners."

[74]During the regulatory process, the FTB initially limited the application of reg. section 25137-15 to calculating the receipts from specific space transportation activities. 25137-15 Regulation File, *supra* note 1, Attachment titled "Regulation 25137-15" to Exhibit 1A, "Meeting Notice and Information, Roster, Regulation Language Proposed by Space X [sic], and Summary for July 9, 2015, Interested Parties Meeting," at 9 (2015), provided that "gross receipts from launch-related revenues to be included in sales factor numerator" in the tax year would not include "business income from other than space transportation activities" in which the sales factor was calculated as follows: "0.0642 x $3,500,000 = $224,599.20."

The regulatory process oversaw reg. section 25137-15(e) example's application of Space Transportation Sales Factor applying to all business income earned by a space transportation company. 25137-15 Regulation File, *supra* note 1, Attachment titled "April 13, 2016 Draft Language: Possible Proposed Regulation 25137-15" to Exhibit 1B, "Meeting Notice and Information, Roster, Draft Language, and Summary for April 13, 2016, Interested Parties Meeting," at 3, (2016) was amended so that gross receipts included in the sale factor would include business income from other than space transportation activities." The sales factor was calculated as follows: "0.0642 x $4,000,000 = $256,800."

Other transportation companies apportion business income from non-transportation activities based on the standard apportionment rules. The following example demonstrates this difference.

The assumption is that space transportation company sales factor and the interstate ratio is the same for Company X, a space transportation company, and Company Y, a trucking company, at 6.42 percent. Both companies have total transportation receipts of $3.5 million, and other business income receipts of $500,000 from the sale of equipment used in their respective businesses, totaling $4 million of receipts. All sales from equipment are made in California.

Under reg. section 25137-15, the space transportation company would have a sales factor numerator of $256,800 and sales-factor denominator of $4 million. The sales factor would be 6.42 percent.[75]

Under reg. section 25137-11(c)(1), receipts are bifurcated between trucking and non-trucking activities. Receipts in the sales-factor numerator from trucking activities would total $224,700 (6.42 percent x $3.5 million)[76] and receipts in the sales-factor numerator from equipment would total $500,000.[77] The sales factor for the trucking company would be 18.117 percent.[78]

Table 1.

Transportation Activity Sales Factor	Interstate Ratio/Space Transportation Sales Factor	6.42%
	Total transportation receipts	$3,500,000
	Other business receipts	$500,000
	Assume other business receipts are equipment sales used in the business assignable to California	100%
	Total receipts	$4,000,000
Space Transportation	Sales-factor numerator	$256,800
	Sales-factor denominator	$4,000,000
Sales Factor		6.42%
Trucking	Sales-factor numerator	$224,700
		$500,000
		$724,700
	Sales-factor denominator	$4,000,000
Sales Factor		18.1175%

The example (as illustrated in Table 1) demonstrates how the sales factor between space transportation and trucking companies can vary greatly based on how other business receipts are in the sales factor. Although, in the above example, the trucking company could request variance by arguing that reg. section 25137-11 does not fairly represent the extent of its activities in California,[79] I am sure taxpayers are lining up to request a variance prescribed under FTB Notice 2018-02 given the FTB's backlog in administering cases.[80]

[75] Reg. section 25137-15(e), example.

[76] Reg. section 25137-11(c)(4)(B).

[77] Reg. section 25134(a)(1)(F).

[78] *Appeal of Fluor Corp.*, 95-SBE-016, Aug. 31, 1995, provides that a party may request variance from one of the special industry regulations if the application of that regulation does not *fairly represent the extent of the taxpayer's activities in the state*.

[79] *Id.*

[80] Dave Roberts, "CA Tax Board Delays Refunding Taxpayers' Money," *Cal. Pol. Rev.*, Dec. 11, 2014.

The FTB rationalized that its departure from the standard apportionment provisions was so that space transportation companies have clarity,[81] and to encourage growth in the space transportation industry.[82] The FTB's decision to treat taxpayers differently extends indefinitely, even when the Legislature imposed sunset provisions regarding property tax exemptions it granted the space industry.

In 2014 the California Legislature enacted an exemption from property tax pertaining to some qualified space flight property for the 2014 through 2024 tax years.[83] The exemption is available for personal property that has space flight capacity, including orbital space facilities, space propulsion systems, space vehicles, launch vehicles, satellites, or space stations of any kind and any components thereof, regardless of whether the property is to be ultimately returned to California.[84] "Space flight" means any flight designed for suborbital, orbital, or interplanetary travel by a space vehicle, satellite, space facility, or space station of any kind.[85] The space flight property tax exemption is limited to taxpayers that have a primary business purpose in space flight activities.[86]

Regarding section 242, the Legislature debated whether rockets were inventory for purposes of the property exemption.[87] Although the issue was ultimately deemed irrelevant, the discussion focused on whether rockets themselves were reusable.[88] The Legislature was hesitant to provide an exemption to one industry, as opposed to other industries,[89] and ensured that the exemptions provided have sunset provisions.[90] However, the FTB promulgated its regulations without sunset provisions, for a rapidly changing industry.

The rhetorical question that comes to mind is: Why should FTB staff, who have not been elected by the people of California, get to decide which industry should have clearer rules, or deem one industry more worthy of growth?

VI. Conclusion

Regulation section 25137-15 is a step in the right direction by the FTB trying to ensure clarity for taxpayers. However, further work is needed regarding understanding the nuances peculiar to the space transportation industry, to treat all firms that deliver cargo for money equally, and to eventually apportion income using a market-based receipts concept. ■

[81] 25137-15 Regulation File, *supra* note 1, Exhibit 3, "Notice of Proposed Rulemaking/Public Hearing — Published April 21, 2017," at 3 (2017), provides: "Promulgating this regulation will allow space transportation companies to determine their tax liabilities with much higher degrees of certainty, reducing the need for both audits and disputes that might follow. Reducing uncertain tax positions will have an immediate benefit to taxpayers who will no longer have to anticipate the financial and practical repercussions of reporting their incomes according to uncertain or untested applications of UDITPA."

[82] 25137-15 Regulation File, *supra* note 1, Exhibit 4, "Initial Statement of Reasons," at 4.

[83] Section 242(a).

[84] Section 242(b)(1)(A).

[85] Section 242(b)(2).

[86] Section 242(f).

[87] Senate Governance and Finance Committee, Bill Analysis of Assembly Bill No. 777, California 2013-2014 Regular Session, at 5, provides that "SpaceX and the Assessor disagree regarding whether today's rockets that are consumed as part of delivery are either taxable business supplies or tax exempt business inventories, but if the firm can make reusable rockets, they look more like taxable cargo delivery vehicles."

[88] Assembly Committee on Revenue and Taxation, *supra* note 57, at 5, provides that "to qualify under the inventory exemption, a space rocket would have to be sold or leased in the regular course of business. However, it is unclear if SpaceX sells or leases the rockets it manufactures. It appears that SpaceX, instead, provides a service, (that is, delivering items into space). SpaceX might argue that although it does not sell the rockets, the service provided amounts to a sale since portions of the rockets are destroyed on re-entry."

[89] Senate Governance and Finance Committee, *supra* note 87, at 4, provides: "Each firm factors the costs of taxes when bidding for jobs, just as SpaceX's costs of its taxes should be embedded within the price it charges to NASA and other firms for its services. While SpaceX is clearly doing innovative things, what are the reasons to exempt SpaceX's delivery vehicles, but not the others: All these firms basically deliver cargo for money; only the vehicles and routes are different."

[90] Section 242(g).