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Supplement to Expert Report

In the June 2, 2014 motion for summary judgment, Plaintiff has argued that there are 12 alternatives to C.R.S. § 39–21–112(3.5)(c) and (d) ("the Act") and 1 COLO. CODE REGS. § 201-1:39–21–112.3.5 (2010) ("the Regulations") that Colorado could employ to increase use tax revenue and promote use tax reporting on sales made by Colorado purchasers by out-of-state retailers.

I have been retained by the Office of the Colorado Attorney General, Counsel to the Defendant, Barbara Brohl, Executive Director of the Colorado Department of Revenue, to provide, in this Supplement to my May 16, 2014 report, my opinions on whether these 12 alternative measures, either individually or in combination, constitute a reasonable and adequate means of achieving the same local purpose as the Act and the Regulations. I specifically incorporate, by reference, the conclusions and opinions of my main report of May 16, 2014 in this Supplement.

The compensation that I am receiving for my services in writing this report is $200 per hour. My rate for testimony at trial or by deposition is $300 per hour. I have not testified at trial or by deposition in any other cases within the preceding four years.

In addition to the references provided in Appendix A of my main report, I have considered a number of additional reports, articles, papers, and data sources in forming my opinions. These information sources are listed in Supplement Appendix A.

My c.v. is provided in Supplement Appendix B.

The local purpose of the Act and the Regulations is to institute a third-party information reporting regime for Colorado purchases from vendors that do not collect sales tax in order to achieve a substantial degree of compliance with the use tax, thereby protecting the state's sales and use tax revenue base against continued erosion through unreported remote sales.

As noted by Plaintiff in the motion for summary judgment, all but 2 of the 12 proposed alternative measures have been employed in at least some states (including Colorado), often in combination. Despite these measures, however, use tax compliance among individual consumers remains astoundingly low. Consider, for instance, the following three findings from my main report (p. 15):

1. A survey of 22 states that included a use tax line item on the individual income tax return indicated a median use tax reporting rate of less than one percent in tax year 2009. A use tax line item on the individual income tax return is one of Plaintiff's 12 proposed alternative measures. Many of these 22 states had implemented some of the other proposed alternative measures as well.

2. The consensus opinion among experts consulted in a U.S. Government Accountability Office study in 2000 was that use tax compliance among individual purchasers was on the order of 0 to 5% (with the exception of motor vehicle purchases on which sales and use taxes are normally collected at the time of vehicle registration).

3. Estimates for the state of Illinois indicate that only 1.4% of state use taxes owed by Illinois households for their online purchases (excluding motor vehicles) was actually paid in fiscal years 2006 through 2010.

It is also instructive to consider recent evidence from California. This state has been aggressive in attempting to promote use tax compliance and has implemented 9 of the 12 alternative measures proposed in the motion for summary judgment, including:

1. a “corporate affiliate” / “related entity” nexus law;
2. a “click-through” affiliate nexus law;
3. a “state contracting” nexus law;
4. participation in the Streamlined Sales and Use Tax as an advisory state;
5. an aggressive program of audits of in-state businesses for use tax issues;
6. inclusion of a use tax line on the individual income tax return;
7. a “look-up” table for estimated consumer use tax liability;
8. enhanced consumer education measures; and
9. a sales and use tax amnesty program in 2005.

Nonetheless, the California Board of Equalization (BOE) estimates an overall use tax gap for individuals and businesses combined of over $1 billion per year for each of fiscal years 2012-13, 2013-14, and 2014-15.[1] Among household consumers, the BOE estimates that only $249 million out of $6,307 million in taxable remote purchases were reported in calendar year 2012, resulting in $492 million in unpaid use tax. So, despite all of the above measures to promote use tax compliance, the state estimates that California households report less than 4 percent ($249 million in taxable remote sales out of $6,307 million) of their use tax liability each year.[2] This represents an extremely poor level of tax compliance.

Two of the 12 proposed alternative measures have not been employed in any state: (1) online reporting and payment of the use tax as a condition for online filing of individual income tax returns; and (2) “due diligence” requirements for third-party tax practitioners to review specific client information on out-of-state purchases (including credit card statements) to assess potential use tax liability and to certify that they have complied with these new requirements. Not only are these measures untested, they have the potential for unintended consequences (such as discouraging electronic filing of tax returns and the usage of third-party tax professionals) that could adversely impact taxpayer compliance costs, tax administrative costs, and tax revenue.

Besides these two measures, the only other proposed alternative measure not implemented in California is a default calculation or entry of estimated consumer use tax due for taxpayers who

[1] http://www.boe.ca.gov/legdiv/pdf/e-commerce-08-21-13F.pdf, Table 1, p. 1.
[2] http://www.boe.ca.gov/legdiv/pdf/e-commerce-08-21-13F.pdf, Table 3, p. 7.

do not self-calculate and report use tax on their state income tax return, or certify that no tax is due.[3] As discussed later in this report, I am aware of only one state that has ever employed this measure (Maine), and that state dropped it back in tax year 1999 after receiving hundreds of complaints from upset taxpayers. Not only is such a measure heavy-handed, no evidence has been presented to demonstrate that it would produce any significant revenue.

As discussed in my main report, third-party information reporting requirements have a strong track record of promoting a high degree of voluntary compliance with tax obligations. Indeed, I anticipate that the transactional notice, annual purchase summary, and customer information report provisions of the Act and the Regulations would enable a sea-change in use tax compliance, particularly with regard to the taxation of remote household purchases. Specifically, I believe that these provisions would greatly enhance Colorado's ability to protect its sales and use tax revenue base from the significant and growing leakage it has been experiencing from untaxed remote consumer purchases.

The estimates provided in final fiscal note for HB 10-1193 support my opinion, as does the underlying spreadsheet analysis for the bill. In the motion for summary judgment, Plaintiff has observed that the estimated state revenue impact increased between the February 8, 2010 fiscal note and the final fiscal note in August 18, 2010 (SOF, ¶¶ 52–53, pp. 21-22). It is important to recognize that the earlier estimate was based on a very different version of the bill that did not include the transactional notice, annual purchase summary, and customer information report provisions. This is clear both from the discussion provided in the February 8 fiscal note and the underlying spreadsheet analysis. Thus, the earlier fiscal note has no relevance for the impact of the information reporting provisions at question in this case.

The final fiscal note for HB 10-1193 estimated that the third-party information reporting provisions of the bill would result in additional state sales and use tax revenue of 12.5 million in FY 2011-2012, the first full fiscal year following enactment. From the spreadsheet analysis, this represents 45% of the state share of the estimated sales and use tax gap associated with online household consumer purchases in 2010. The fiscal note indicates that 60% of the annual tax gap will be closed over time. This is consistent with the spreadsheet analysis, which shows the percentage rising from 45% in FY 2011-2012 to 60% in FY 2013-2014. In dollar terms, this represents an increase in annual revenue from $12.5 million in FY 2011-2012 to $22 million in FY 2013-2014.

The estimated state revenue impact in the fiscal note is plausible and consistent with my own view that the information reporting provisions under the Act and Regulations will, over a period of time, enable the state to achieve a substantial level of compliance with the use tax. It is important to recognize, however, that these estimates pertain only to the state portion of the tax gap. I would anticipate that compliance with use taxes at the local level would improve commensurately, especially given that the Colorado DOR plans to share information with local Colorado tax administrations. According to the fiscal note, the state share of the tax gap is 43.3%. Therefore, if 60% of the local tax gap also was closed, this would increase local tax

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[3] It should also be noted that, although California participates in an advisory capacity on the SSUTA, it has not actually joined the agreement. As discussed later in this report, it appears as though joining the SSUTA in Colorado's case may be prohibited by the state constitution.

revenues by $28.8 million based on the above FY 2013-2014 estimate of state revenue impact [$22 million times the ratio (1-0.433)/0.433)]. Thus the combined annual state and local revenue impact would amount to $50.8 million.

In the case of businesses, I have indicated in my main report (p. 15) that use tax compliance is fairly high, but not as high as sales tax compliance. For instance random audit evidence from the Washington State Department of Revenue indicates the use tax compliance rate among registered businesses in that state is 77%, compared to 99% for the sales tax. I have observed that the transactional notice, annual purchase summary, and customer information report provisions under the Act and the Regulations would provide the DOR and business taxpayers with additional tools to cost-effectively address some areas where there are gaps in compliance. These include helping businesses to overcome informational, organizational, and cost barriers to compliance; facilitating the cost-effective identification and targeting of nonfilers and non-registrants by the DOR; and providing documentation of unreported business purchases. These improvements in revenue from improved compliance and enforcement with respect to the business use tax would be in addition to the already very substantial revenue gains associated with the use tax on household purchases.

While the introduction or expansion of certain of the proposed alternative measures might play a supporting role in the transition to the new third-party information reporting regime designated by the Act and the Regulations, these alternative measures do not represent, either alone or in combination, a reasonable and adequate substitute for this regime. Whereas the third-party reporting regime created by the Act and the Regulations would provide Colorado with the means to collect a very substantial share of use tax on remote household purchases, the proposed alternatives would not. As noted above, household use tax compliance remains extremely poor nationwide even though many states have implemented at least some of the proposed alternative measures and some have implemented many. Below I provide a point-by-point discussion of the potential efficacy of each of the 12 alternative measures proposed in the motion for summary judgment.

Proposed Alternative 1: A "corporate affiliate" / "related entity" nexus law, as recently adopted by the General Assembly and numerous other states

The motion for summary judgment refers to HB 14-1269, which was signed by the Governor on June 6, 2014 and takes effect July 1, 2014.[4] I anticipate that this new law will have a very limited impact on the collection of sales and use tax revenue from out-of-state purchases by Colorado residents for the following reasons:

1. The prior law under Regulation 39-26-102.3 already contained substantive "corporate affiliate" / "related entity" nexus provisions. Despite these provisions, the use tax gap has remained a large and growing problem in Colorado.

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4 http://www.leg.state.co.us/Clics/CLICS2014A/csl.nsf/fsbillcont3/6E7335C939D8631287257C390066585A?Open&file=1269_enr.pdf.

2. While the new law clarifies and enumerates the specific types of activities that create a presumption of nexus, proponents of the bill were unable to demonstrate that there are any vendors that are required to collect and remit the Colorado sales tax under the new law that did not already have a sales tax collection requirement under the prior law.

3. The new law does not require large online retailers without a state business presence, such as Amazon, to collect and remit Colorado sales tax.

4. Use tax compliance continues to be a significant problem nationwide, including in states, such as California, that have enacted "corporate affiliate" / "related entity" nexus laws and various other measures to improve compliance.

Supporting Evidence

The motion for summary judgment fails to acknowledge that Colorado already had in place "corporate affiliate" / "related entity" nexus regulations prior to the enactment of HB 14-1269. Beginning on March 1, 2010, a presumption of nexus was established under HB 10-1193 when an out-of-state retailer is part of a controlled group of businesses with a component member that is a retailer with physical presence in Colorado.[5] Even prior to the 2010 law, C.R.S. 39-26-102(3)(a) contained a "warehouse nexus" provision similar to that enacted by Virginia in 2012[6] as well as various other states; and C.R.S. 39-26-102(3)(b)(I) contained a provision concerning the presumed nexus for out-of-state retailers that regularly or systematically make solicitations in Colorado through any means whatsoever, including advertising by catalogues, newspapers, radio, television, e-mail, or Internet.[7] Despite having had the above provisions in place for a number of years, Colorado continues to experience a large and growing use tax gap.

The new law clarifies and enumerates the specific types of activities that create a presumption of nexus with regard to sales taxation. The April 7, 2014 Colorado Legislative Council Fiscal Note for HB 14-1269 hypothesizes two possible ways that this may increase state sales and use tax revenue. The first hypothesis is that the rebuttable presumption of physical presence for sales tax purposes may make it easier for the DOR to reach audit settlements with some out-of-state

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[5] http://www.leg.state.co.us/CLICS/CLICS2010A/csl.nsf/fsbillcont3/B30F574193882B4B872576A80026BE0C?Open&file=1193_enr.pdf.

[6] http://lis.virginia.gov/cgi-bin/legp604.exe?121+sum+SB597.

[7] Regulation 39-26-102.3 (http://www.colorado.gov/cs/Satellite%3Fblobcol%3Durldata%26blobheader%3Dapplication%252Fpdf%26blobkey%3Did%26blobtable%3DMungoBlobs%26blobwhere%3D1251642812095%26ssbinary%3Dtrue) describes these provisions. The final HB 10-1193 bill referenced in footnote 4 above shows that these provisions were in place prior to the 2010 law.

vendors that appear to have nexus.[8] However, the fiscal note clearly states: "Until the results of such audits are known, it is impossible to quantify any additional revenue from this source."

The second hypothesis put forth in the fiscal note is that the enumeration of the types of business activities that establish a physical presence for sales tax purposes may cause some out-of-state businesses to begin collecting and remitting Colorado sales taxes. However, the fiscal note clearly states: "Until the precise business relationships between in-state companies and out-of-state retailers is known, it is impossible to estimate the potential increase in sales tax revenue."

Since it was deemed impossible to estimate the potential increase in sales tax revenue through either of the hypothesized channels, the revenue changes for fiscal years 2014-15 and 2015-16 were listed as "indeterminate".

The following paragraph is included in the "State Revenue" section of the fiscal note:

> "Legislative Council Staff estimated a total of $67.7 million in uncollected sales taxes that may be affected by this bill. The $67.7 million in sales taxes represents a maximum amount of General Fund revenue that may be collected. The actual amount will depend on the business practices of retailers that are currently not collecting Colorado sales taxes and how they react to the compliance activities of the Department of Revenue."

On June 19, 2014, I spoke by telephone with the analyst responsible for the fiscal note, Larson Silbaugh, and reviewed his spreadsheet analysis. It is clear from our discussion and my review of the spreadsheet analysis that the $67.7 million figure in the above paragraph refers to the state's estimated share of the overall sales and use tax gap from online sales by large out-of-state retailers (with over $25 million in annual sales).[9] In other words, it is an estimate of the magnitude of the state's use tax gap problem associated with such sales, not of the expected additional revenue collections under the new law. In fact, Mr. Larson informed me that he was unable to obtain any evidence concerning out-of-state vendors that would be required to begin collecting Colorado sales taxes under the new law. Mr. Silbaugh indicated that, given the absence of relevant information, he was not comfortable estimating the revenue effect of the new law. He confirmed that this was the reason that that the projected revenue change was listed as indeterminate and that the fiscal note stated it was impossible to estimate the potential increase in revenue associated with the bill.

During the February 26, 2014 House Finance Committee Meeting, supporters of HB 14-1269 promoted the new law, not for the revenue it could bring in, but rather as a fairness measure for local businesses. In a statement acknowledging concerns raised during the meeting that the bill

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[8] However, it should be noted that the existing law already included a rebuttable presumption of nexus for out-of-state retailers from a controlled group with a Colorado resident member.

[9] Bruce, Fox, and Luna (2009) estimated that the state and local sales and use tax gap from online sales to Colorado residents was $172.7 million in 2012. Legislative Council staff estimated that the state share of this gap was $70.9 million. Using Census data, the state gap was projected to rise to $88.7 million in fiscal year 2014-15. Of this $88.7 million, $67.7 million was attributed in the estimates to large retailers.

may not bring in any significant new revenue, Representative Lois Court, a co-author of the bill, emphasized: "Down here, we take baby steps frequently, not giant leaps.[10] Indeed, state officials were unable to identify or verify the existence of any vendors that would be required to collect sales tax under the proposed legislation that were not already collecting it.[11] On the other hand, Representative Court acknowledged that large online retailers with no warehouse or in-store distribution sites in Colorado, such as Amazon, would continue to have no sales tax collection responsibilities under Colorado law.[12] After the hearing, Representative Court is quoted as stating: "For this bill, it's a baby step to try to level the playing field."[13]

Proposed Alternative 2: A "click through" affiliate nexus law, as adopted by numerous other states

I do not anticipate that a "click through" affiliate nexus law would result in substantial additional sales and use tax revenue for Colorado; potentially, it might even lead to reduced overall revenue collections. My reasoning is as follows:

1. Hundreds of out-of-state vendors have terminated affiliate arrangements in states that have enacted or considered enacting click-through nexus provisions.
   When this occurs, not only is no additional sales tax revenue collected from these vendors, these affiliate job losses result in decreased tax revenue for the states. Several states that have passed click through nexus statutes appear to have experience only very small or even negative revenue changes once these job losses are taken into account.

2. Although New York and California have estimated fairly large amounts of tax revenue associated with their click through nexus statutes, much of this revenue comes from a small number of large online vendors, including Amazon. Amazon dropped its Colorado affiliates in 2010, so it would not be required to collect sales taxes under a click-through nexus law. Other online vendors with affiliates would be likely to follow suit if a click-through nexus provision were enacted in Colorado, as many have done in other states passing such laws.

3. Click through nexus provisions have no impact whatsoever on sales and use tax compliance with respect to purchases from the vast majority of remote vendors.

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[10] Transcribed from the discussion beginning at about the 1:38:34 mark of the recording of the committee meeting: http://coloradoga.granicus.com/MediaPlayer.php?view_id=19&clip_id=5219.

[11] See http://www.bizjournals.com/denver/blog/capitol_business/2014/04/colorado-online-retailer-tax-bill-faces-partisan.html?page=all as well as the recording of the committee meeting referenced in footnote 9.

[12] Refer to http://www.bizjournals.com/denver/blog/capitol_business/2014/02/amazon-tax-internet-retailer.html?page=all as well as the recording of the committee meeting referenced in footnote 9.

[13] http://www.bizjournals.com/denver/blog/capitol_business/2014/02/amazon-tax-internet-retailer.html?page=all.

4. Legal uncertainty continues to surround click-through nexus provisions.

Supporting Evidence

Hundreds of out-of-state vendors have terminated affiliate arrangements in states that have enacted or considered enacting click-through nexus provisions.[14] When this occurs, not only is no additional sales tax revenue collected from these vendors, but the affiliate job losses result in a loss of tax revenue for the states. On p. 27 of the motion for summary judgment, Plaintiff refers to an exhibit (Alternatives, Tab 6) that attributes an estimated $39 million in revenue to North-Carolina's click through nexus law, which took effect in 2009. What Plaintiff does not mention is that the Bloomberg BNA article associated with this exhibit cites observers who have reported that the state "most likely lost revenue overall because many retailers cut ties with affiliate marketers in the state."[15]

Similarly, in Rhode Island, the revenue-analysis office head reported that the state had collected no revenue from its click through nexus law in the first six months. At the same time, a trade group expressed concerns about income tax revenue and job losses associated with the termination of online retailer affiliates in the state.[16]

Illinois estimated that it would collect an additional $150 million per year in sales and use taxes as a result of its click through nexus law. However, the law actually generated only $3.8 million between July 2011 and January 2012, putting it on pace to generate only $6.4 million for the full fiscal year. When asked for evidence that the tax had "picked up steam", the Revenue Department reported that the agency was no longer tracking the law's performance. Offsetting these meager revenue gains was the unmeasured revenue loss from the termination of Amazon and Overstock affiliates and the relocation of Illinois businesses, such as CouponCabin and FatWallet, to other states.[17]

Although Amazon and some other online retailers have kept affiliates or opened warehouses in California and New York to maintain market share in these large states, they have dropped affiliates in many smaller states to avoid click through nexus laws. Amazon reportedly dropped affiliates in 13 states in response to nexus laws as of November 2013.[18] A provision in the special terms of the Overstock affiliate agreement explicitly excludes participation in any states where the agreement establishes a presumption of nexus, including New York, North Carolina, Rhode Island, Illinois, Arkansas, and Connecticut:

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[14] http://performancemarketingassociation.com/advocacy/legislation/the-advertising-tax.

[15] http://www.bna.com/states-see-little-revenue-from-online-sales-tax-laws-keep-pressure-on-congress/.

[16] http://taxfoundation.org/article/amazon-tax-laws-signal-business-unfriendliness-and-will-worsen-short-term-budget-problems.

[17] http://articles.chicagotribune.com/2013-04-04/opinion/ct-oped-0404-amazon-20130404_1_amazon-tax-tax-fairness-illinois-department.

[18] http://solospark.com/amazon-nexus-laws-affiliate-marketing/.

> "Publisher understands that Company will not enter into this Agreement with a Publisher who has a physical presence in (including but not limited to a satellite office), is domiciled in, is located in or is a resident of a state in which the law of such state deems Company to have nexus for sales/use tax purposes by virtue of entering into this Agreement (i.e., New York, North Carolina, Rhode Island, Illinois, Arkansas and Connecticut). As such, Publisher represents, warrants and certifies that it does not have a physical presence in, is not domiciled in, is not located in and is not a resident of and will not during the Term of this Agreement have a physical presence in, become domiciled in, be located in or become a resident of a state which has such a law."[19]

Click through nexus laws typically cause only a relatively small number of online vendors to collect sales tax. For instance, in California, only about 45 vendors reportedly registered to collect sales tax as a result of the state's nexus legislation.[20] In the case of New York, the corresponding figure is reported as "more than 30".[21] The ability to collect substantial revenue thus hinges on willingness of a relatively small number of large vendors, such as Amazon, to participate. Amazon's participation is especially significant, because this vendor accounts for more online sales (and hence, potential sales and use tax revenue) than the next 12 largest online retailers combined.[22] In fact, this understates Amazon's importance, because many of the other 12 already collect taxes on their online sales; indeed, most do so in Colorado.[23] Amazon dropped its Colorado affiliates following enactment of HB 10-1193 in 2010,[24] meaning that a click through nexus provision would not apply to what is far and away the most important online vendor from a revenue perspective. Based on the experience of other states, other large online retailers are likely to follow Amazon's lead and cancel their affiliates if a click through nexus provision is enacted in the state.[25]

[19] The special terms of the agreement were accessed via: https://signup.cj.com/member/brandedPublisherSignUp.do?air_refmerchantid=2626374.

[20] http://www.bna.com/states-see-little-revenue-from-online-sales-tax-laws-keep-pressure-on-congress/.

[21] http://www.tax.ny.gov/pdf/stats/policy_special/a_new_way_forward_for_remote_vendor_sales_tax_collection.pdf.

[22] http://online.wsj.com/news/articles/SB10001424127887324906304579039101568397122.

[23] I have verified this through an Internet search of whether the top 13 vendors identified on the following site charge Colorado sales tax on their online sales: http://online.wsj.com/news/interactive/WEBFAILB050214?ref=SB1000142405270230341710457954408030883796 4.

[24] http://blogs.denverpost.com/thespot/2010/03/08/amazon-fires-colorado-affiliates-in-protest/6554/.

[25] Indeed, Overstock threatened to cancel its Colorado affiliates when the state was considering passing a click through affiliate nexus law back in 2010. See http://www.amnavigator.com/blog/2010/01/27/overstock-com-set-to-terminate-colorado-affiliates/.

Since relatively few vendors collect sales or use tax as a result of click through nexus statutes, these laws have no impact whatsoever on sales and use tax compliance with respect to consumer purchases from the vast majority of remote vendors.

There is also a cloud of legal uncertainty regarding click through nexus provisions. As noted by Plaintiff in the motion to for summary judgment (p. 27), New York's law was recently upheld by the New York Court of Appeals. However, the Supreme Court of Illinois has found that the Illinois law is expressly preempted by the federal Internet Freedom Tax Act.[26] Thus, the passage of a click through nexus statute in Colorado would have the potential to result in a lengthy and costly litigation.

Proposed Alternative Measure 3: A statutory requirement that retailers must register to collect use tax on all their sales to in-state consumers as a condition of entering into contracts for the sales of goods or services to state agencies ("state contracting" nexus law), as adopted by numerous other states

I do not anticipate that this measure would have a substantial impact on the sales and use tax gap in Colorado for the following reasons:

1. The great majority of contractors selling goods and services to state agencies appear to be based in Colorado, so they are already required to collect and remit Colorado sales tax.
2. Some of the contractors that are based in other states are already registered to collect the Colorado sales or use tax, while others appear not to be involved in the sale of taxable goods and services to Colorado consumers.
3. Among those contractors who would be newly required to collect sales tax by such legislation, some might simply choose not to avoid the requirement by not doing any business with the state.
4. This measure would have no impact whatsoever with regard to sales and use tax compliance on purchases from any out-of-state vendors that do not sell goods or services to state agencies.

Supporting Evidence

Plaintiff has provided no evidence that this measure has generated any significant revenue in any of the small number states that have a state contractor nexus statute, nor have I been able to locate any evidence. In order to get some insight into the likely impact of such a provision in Colorado, I asked the DOR to do some analysis of the vendors with price agreements in place with the State Purchasing Office. Although price agreements are a major vehicle for the sale of goods and services to state agencies in Colorado, they are not the only vehicle. Some purchase arrangements are made through requests for proposals, sole source contracts, or

[26] http://www.aicpa.org/interestareas/tax/newsandpublications/taxnews/pages/20131021.aspx.

other processes. Nonetheless, an analysis of price agreements should provide at least some insight into the potential impact of a state contractor nexus provision. At my request, the DOR examined the 172 vendors with pricing agreements listed on the ColoradoBids website (https://www.bidscolorado.com/co/portal.nsf/xpPriceAgreementsByCategory.xsp) to determine the following:

1. The number of vendors with either a Colorado contact phone number (which would seem indicative of a physical presence in Colorado).
2. Among those vendors not listing a Colorado contact phone number, the number that have an active Colorado DOR sales tax registration.
3. Among those vendors not in either of the above 2 categories, the number that appear unlikely to have any Colorado taxable sales; for instance, a vendor who provides language translation services.

The results of this analysis indicate that 149 of the 172 vendors fall into one of the above 3 categories, meaning that they were physically present in Colorado, were actively registered for the sales tax, or were unlikely to have any Colorado taxable sales. Based on this available evidence, it seems likely that a state contractor nexus provision would impact only a relatively small number of vendors, some of which may choose to no longer do business with the state. Since this measure would have no impact whatsoever on the sales and use tax gap associated with remote purchases from vendors who do not make sales to state agencies, it seems highly unlikely that such a provision would have much impact on the overall level of sales and use tax compliance in Colorado.

Proposed Alternative Measure 4: Joining the Streamlined Sales and Use Tax Agreement, a multi-state sales/use tax simplification project

I do not consider this proposal a viable alternative, because:

1. Joining this agreement would appear to be a violation of Article 20 of the Colorado Constitution and also, potentially, Article 5.

2. Even if participation in the SSUTA were constitutionally permissible, joining the agreement would undermine the autonomy of home rule jurisdictions and potentially destabilize their major revenue source.

3. The SSUTA has had only very limited success in reducing the sales and use tax gap.

4. Given all of the above concerns, it is not surprising that Colorado and 20 other states (including all 5 of the most populous states [California, Texas, New York, Florida, and Illinois] and all 5 of the states other than Colorado with home rule jurisdictions

empowered to administer their own tax systems [Alabama, Alaska, Arizona, Idaho, and Louisiana] have elected not to join the SSUTA.

Supporting Evidence

Joining this agreement would appear to be a violation of Article 20 of the Colorado Constitution and also, potentially, Article V. Under the Streamlined Sales and Use Tax Agreement (SSUTA), only the state has the power to administer sales and use taxes. Therefore, joining this agreement would appear to be a violation of Article 20 of the Colorado Constitution, which grants home rule municipalities the right to administer their own sales and use taxes under their charters. Furthermore, the agreement's delegation of broad powers to the Streamlined Sales Tax Governing Board, relating to tax administration and tax interpretation, may conflict with Article 5, Section 35 of the Colorado Constitution, which prohibits the general assembly from delegating any power to levy taxes or perform any municipal function whatsoever to any special commission, private corporation, or association.[27]

Even if participation in the SSUTA were Constitutional, the agreement would require a uniform sales and use tax base throughout the state and severely limit the local tax rate structure. This would undermine the autonomy of home rule jurisdictions and threaten the stability of their major revenue source. Participation would also require the state government to sacrifice much of its own autonomy in levying and administering sales and use taxes.

The SSUTA has had only very limited success in reducing the sales and use tax gap. Between Oct. 1, 2005 and Dec. 31, 2012, $1.3 billion in sales tax reportedly has been collected by retailers registered with the streamlined project, which averages to about $179 million per year for all of the 24 full and associate member states combined.[28] This is a relatively small amount of revenue, especially when one considers that some of these retailers would have collected and remitted sales taxes for member states even in the absence of the Streamlined Sales and Use Tax Program. Even without deducting for taxes that would have been collected in any case, the combined $1.3 billion in sales tax collected over this 7¼ year period represents only 2% of the $66.7 billion estimated sales and tax gap from online sales in the 24 full and associate member states over the 6 year period from 2007 through 2012.[29]

Given all of the above concerns, it is not surprising that Colorado and 20 other states (including all 5 of the most populous states [California, Texas, New York, Florida, and Illinois] and all 5 of the states other than Colorado with home rule jurisdictions empowered to administer their own tax systems [Alabama, Alaska, Arizona, Idaho, and Louisiana] have elected not to join the

[27] http://www.streamlinedsalestax.org/uploads/downloads/Archive/SSUTA/SSUTA_As_Amended_10-30-13.pdf.
[28] http://www.bna.com/states-see-little-revenue-from-online-sales-tax-laws-keep-pressure-on-congress/.
[29] Cumulative tax gap for the 24 states calculated from Bruce, Fox, Luna (2009).

SSUTA. In the motion for summary judgment, Plaintiff suggests (p. 28 and SOF, ¶ 27, p. 17) that Colorado is the only state not participating in the SSUTA. There are 23 full member states that participate fully in the organization and 1 associate member (Tennessee) that participates on a somewhat more limited basis. The remaining sales tax states, with the exception of Colorado, participate in the organization solely in an "ex officio" advisory capacity with no voting rights. Since such advisory member states have no access to any information from the organization regarding vendors that are registered with the SSUTA, Colorado would not benefit in any way from a revenue perspective by participating in an advisory capacity.

Proposed Alternative Measure 5: An aggressive program of audits of in-state businesses for unreported use tax on purchases from out-of-state vendors, as has been implemented by other state revenue departments

No state has been able to audit its way out of the use tax gap problem, for the following reasons:

1. Audits are a costly, time-consuming, and intrusive tool for enforcing compliance. Consequently, they are used sparingly.

2. When state and local audits of in-state businesses are taken into account, Colorado already has a reasonably aggressive audit regime.

3. As the audit rate is increased, the revenue generated from additional enforcement efforts are subject to diminishing returns.

4. Whereas use tax compliance is already fairly high among businesses, it is extremely poor among household consumers. Audits of in-state businesses do nothing whatsoever to improve use tax compliance among household consumers.

Supporting Evidence

Audits are a costly, time consuming, and intrusive tool for enforcing tax compliance. It is therefore a tool that tax administrations employ sparingly. Even in states with rather aggressive audit programs, such as California, the sales and use tax audit rate is only about 1%.[30]

Colorado is one of only 6 states with home rule jurisdictions that can levy their own sales and use tax. In Colorado, both the DOR and the home rule tax departments undertake sales and use tax audits to collect unpaid revenue and deter noncompliance. Recent statistics provided by the DOR indicate that audits for sales, use, and excise taxes accounted for approximately 1.3% of all state sales, use, and excise revenues. I was informed during a telephone conversation with Bruce Moore, the Director of Tax Compliance, Denver Treasury Office, that the Denver performs sales

[30] http://www.boe.ca.gov/meetings/pdf/2014/032514_P3_Audit_Program_Update.pdf.

and use tax audits of approximately 2% of all business accounts and 5% of all accounts with a reported tax liability of $25,000 or greater.[31] He also informed me that the other home rule jurisdictions also have significant sales and use tax programs. Mr. Moore also informed me that sales and use tax audits generally cover the 3 prior tax periods. Chris Muntean of the DOR has informed me that the same is true of state level audits.[32] Thus, the audit rate at each level of government is effectively 3 times as high as the nominal rate. When viewed together, then, the state and local audit coverage therefore seems reasonably aggressive.

Like other states, Colorado employs risk-based audit strategies to focus a high share resources on businesses that are likely to be significantly underreporting their taxes. As a result of risk-based audit selection, audits tend to be subject to diminishing returns, meaning that additional audits will tend to be less productive of revenue than existing audits.

As noted previously, the third-party reporting provisions under HB 10-1193 would facilitate business use tax enforcement by facilitating the cost-effective identification and targeting of nonfilers and non-registrants by the DOR and providing documentation of unreported business purchases.

Also as discussed previously, use tax compliance tends to be fairly high overall among businesses (77% based on the Washington DOR study). In contrast, use tax compliance among household consumers is very weak. Business sales and use tax audits do nothing to address the household consumer use tax problem.

Proposed Alternative Measures 6 and 7: Inclusion of a use tax line on the state individual income tax return, as has been implemented by over 25 other states; and a "look-up table" for estimated consumer use tax liability to be reported with the payment of state income tax, as has been implemented by other states

These proposed alternatives are discussed in my main report, pp. 18-19. My conclusion from that discussion is that the inclusion of a use tax line item on the individual income tax return may result in a modest improvement, but that use tax compliance overall among household consumers will remain extremely poor.

It is also important to recognize that the use of a lookup table changes the character of the tax. Since the estimated use tax liability provided in the lookup table is based on income rather than actual taxable out-of-state purchases, the use of these tables shifts the tax away from a tax on consumption and towards a tax on income. As a consequence, the comparability between the sales tax and the use tax is broken. Thus, any improvement in compliance comes at the expense of a change in the fundamental purpose of the tax.

[31] Telephone conversation on June 20, 2014.
[32] Telephone conversation on June 20, 2014.

Proposed Alternative Measure 8: A default calculation or entry of estimated use tax due for taxpayers that do not self-calculate and report use tax on their state income tax return, or certify that no use tax is due

This alternative measure is not currently used in any state, although Maine once followed this practice. In my opinion, this is a heavy-handed approach that works against a tax administration's objective of building goodwill with its taxpayers. Furthermore, it is unlikely to generate significant revenue. My reasoning is as follows:

1. To my knowledge, Maine is the only state to have practiced this heavy-handed tactic, which it stopped using back in tax year 1999.

2. Such a measure effectively imposes a penalty on taxpayers who neglect the use tax line item, regardless of whether the omission was intentional or accidental.

3. This measure is unlikely to generate much revenue, because taxpayers can always write in a zero on the use tax line item.

4. Such a measure could backfire by damaging the trust between the taxpayer and the tax agency. This could lead taxpayers to be less compliant with regard to other line items on their return.

Supporting Evidence

To my knowledge, Maine is the only state to have used this practice. It led to hundreds of complaints from taxpayers who were upset after receiving an unexpected use tax adjustment on their tax bills.[33] As a result of these complaints, the state discontinued the practice as of tax year 1999.[34] As a general rule, tax administrations strive to collect the right amount of tax from each taxpayer, neither too much nor too little. Automatically billing a taxpayer for the use tax without exploring whether the taxpayer actually has any liability is a violation of this principle. Such an approach is heavy-handed and effectively penalizes taxpayers for what might simply be an honest mistake.

Such a measure is unlikely to generate much revenue, because taxpayers can always write in a zero on the use tax line item to avoid the default tax calculation. As discussed on p. 19 of my main report, there is no clear evidence that taxpayers are more compliant in states that explicitly require taxpayers to enter a zero to designate no tax liability (albeit with no default tax calculation for failing to do so) achieve a higher level of voluntary compliance than states that do not.

Ultimately, this proposed measure is likely to be damaging to the trust between taxpayers and the tax administration, which could potentially result in a deterioration in voluntary compliance.

[33] http://www.state.me.us/newsletter/backissues/Feb2000/implementing_maine_use_tax_chang.htm.

[34] http://www.maine.gov/revenue/forms/1040/1999/1040inst.pdf.

Proposed Alternative Measure 9: Leveraging the state's popular electronic filing system for income tax ("efile") to provide notification of use tax reporting obligations and require online reporting and payment of the use tax as a condition of completing the online filing of the tax return

This proposal fails to recognize that states want to encourage, not discourage, participation in electronic filing, because electronically filed returns are less costly to process and have fewer errors than paper returns. By imposing additional requirements on electronic returns that can be avoided through paper filing, this measure could have the unintended consequence of reducing the rate of electronic filing, thereby driving up administrative costs and taxpayer reporting errors. It should also be noted that this measure has not been employed by any state, so there is no evidence to support Plaintiff's suggestion that the measure would improve use tax compliance.

Proposed Alternative Measure 10: Enhanced consumer education measures, many of which have been implemented by other states, including, but not limited to: a. Website notices; b. Online videos; c. Local media spots; and d. Targeted mailings.

This proposed alternative is discussed on p. 20 of my main report. The evidence from that discussion suggests that such measures can have modest, but often only temporary, positive effects on use tax compliance.

Proposed Alternative Measure 11: Due diligence certification by tax preparation professionals that they have requested information from their clients regarding purchases from out-of-state retailers, including review of credit card statements, similar to the certification required on certain IRS forms

To my knowledge, this measure has not been used to promote use tax compliance in any state. It is therefore untested and unproven. In my opinion, the proposed due diligence requirements would not raise significant revenue and may even backfire. My reasoning is as follows:

1. I am not aware of any evidence that the IRS requirements have led to improved compliance with the Earned Income Credit, but this credit is very different than the use tax in any case.

2. Compliance may not improve significantly as a result of the measure, since taxpayers may simply inform the tax practitioner that they have not made any taxable remote purchases.

3. Taxpayers may switch from using tax practitioners to preparing their own returns, which might exacerbate compliance problems beyond the use tax line item.

4. The relationship between the DOR and tax practitioners may be damaged by the imposition of such requirements, ultimately resulting in higher administrative costs and greater compliance problems.

Supporting Evidence

I am not aware of any evidence that the IRS requirements have led to improved compliance with the Earned Income Credit. Also, the average value of this credit for a family with children was $2,905. It is easier to justify due diligence requirements for a tax credit of that amount than for an average use tax liability of less than $100.

Presumably, tax practitioners would satisfy their requirements if they asked about out-of-state purchases and received a negative response, after which they signed a form acknowledging this exchange. It seems likely that this same scenario already occurs frequently in tax preparer offices, with the exception that the preparer does not sign a certification form. If so, there is little reason to expect that use tax compliance will improve as a result of the new requirements.

On the other hand, if taxpayers find that the requirements result in preparers insisting on recording use tax liabilities (and, presumably, charging additional amounts for the extra time involved in meeting their due diligence requirements), this may drive taxpayers to prepare their own returns. Ultimately, this may result in more reporting errors on the return and lower tax revenue.

The DOR relies on tax practitioners to assist with the education of taxpayers and the filing of reasonably accurate returns. The introduction of these due diligence requirements could prove damaging to the relationship between the DOR and the practitioners, ultimately resulting in less cooperation, costlier administration, and more compliance problems.

Proposed Alternative Measure 12: Expanded and well-advertised tax amnesties (*e.g.*, waiver of interest and penalties) specifically directed at past due use tax amounts owed by businesses and consumers.

Tax amnesties are discussed on p. 20 of my report. Amnesties are not a long-term solution to the use tax gap problem, because:

1. They tend to be detrimental to voluntary compliance.

2. The damage to voluntary compliance tends to be exacerbated when tax amnesties are used repeatedly.

3. Colorado has held 3 broad-based tax amnesties, in 1985, 2003 and 2011. In light of the above findings, Plaintiff's proposal to hold yet further amnesties seems counterproductive.

Supporting Evidence

Two consistent findings from tax amnesty research are that: (1) tax amnesties tend to generate short-term revenue gains at the expense of long-term revenue losses; and (2) the adverse long-term revenue effects tend to be exacerbated when amnesties are offered repeatedly, often while short-term revenue gains become diminished. With regard to the first point, Mikesell and Ross (2012) analyze 30 U.S. state amnesty programs held over a period of 30 years and conclude:

> "…the historical record has demonstrated amnesty recoveries are seldom large enough to make any dramatic impact on state finances, even compared to non-traditional slack revenue sources such as rainy day funds or lotteries. Even among the early amnesties, which were more interested in long-term compliance and tax administration, the preponderance of evidence suggests that amnesties represent only a temporary revenue shock, not a continuing fiscal base"[35]

Similarly, Ross (2012) reports:

> "Once a segue to improving tax compliance and administration, recent fiscal stress in state budgets has caused policymakers to turn to sporadic offerings of tax amnesty to boost their coffers without raising taxes. Most of these revenue recoveries, however, have been illusionary and likely result in further long-run revenue losses – and often come at the expense of compromising the existing enforcement efforts."[36]

With regard to the second point about repeated amnesties, LeBorgne and Baer (2012) draw the following conclusion based on a review of the tax amnesty literature and an analysis of tax amnesties in the U.S. and around the world:

> "Evidence shows, and theory also predicts, that repeated stand-alone amnesties can lead to an erosion of the gross revenue collected from each successive amnesty, and may also negatively affect overall compliance. Whenever a tax administration's weaknesses are not addressed as part of tax amnesty program, the use of a tax amnesty as a regular tool to collect revenue is likely to have serious consequences both for future compliance and the long-term effectiveness of the tax administration."[37]

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[35] http://ntj.tax.org/wwtax/ntjrec.nsf/009a9a91c225e83d852567ed006212d8/a13a0285caa1f19885257a6f0054c41b/$FILE/A02_Mikesell.pdf.

[36] http://www.indiana.edu/~spea/faculty/policy_briefs/ross_good_tax_policy.pdf.

[37] Le Borgne, Erik and Katherine Baer (2008) *Tax Amnesties: Theories, Trends, and Some Alternatives*, Washington, D.C.: International Monetary Fund, pp. 56-57.

Similarly, based on a detailed longitudinal econometric analysis of the tax revenue experiences of 27 states that have offered amnesties for a second or a third time and 23 that have not done so, Luitel and Sobel (2007) conclude:

> "Repeated broad-based amnesties fail to produce even additional short-run revenue, while creating significant long-run revenue losses due to reduced compliance that grow as additional amnesties are offered. Based on our results we suggest that states avoid using tax amnesties on a repeated basis, and even the first offering is not clearly a revenue enhancement once the long run compliance effects are considered."[38]

Colorado has held 3 different broad-based tax amnesties, in 1985, 2003, and 2011.[39] Among the two more recent amnesties, Plaintiff has noted that the 2003 amnesty resulted in use tax collections of over $6.4 million, while the 2011 amnesty resulted in use tax collections of $2.5 million. Plaintiff seems to imply that the more recent amnesty raised less short-term revenue, because the amnesty period was only six weeks and the amnesty was not targeted specifically towards use tax. In fact, however, the 2003 amnesty was also broad-based (covering all taxes) and the amnesty period was even shorter (30 days). A more reasonable conclusion, based on the above research findings is that repeated usage of amnesties has led to an erosion in short-term revenue gains.

Plaintiff has also misinterpreted the evidence from Maine. On p. 35 of the motion for summary judgment, Plaintiff asserts: "Maine's 2006 amnesty, coupled with other use tax compliance measures, appears to have helped raise long term use tax reporting rates." As discussed in my main report (p. 20), however, the rise in use tax reporting rates was actually both modest and temporary; by 2010, the use tax reporting rate was actually slightly lower than it was prior to the 2006 amnesty and outreach program. Further, when Maine held a second use tax amnesty and outreach initiative in 2012, it reportedly failed to raise much revenue. This again illustrates how even the short-run revenue benefits of a tax amnesty are diminished through repeated application. When coupled with the above research findings that amnesties are damaging to long-term voluntary compliance, it is clear that Plaintiff's proposal for Colorado to hold yet another tax amnesty is unwarranted.

[38] http://www.stcloudstate.edu/economics/documents/taxamnesty.pdf.

[39] For a listing of amnesties held by different states, refer to: http://www.taxadmin.org/fta/rate/amnesty1.pdf.

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Supplement Appendix B: Curriculum Vitae of Brian Erard

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CITIZENSHIP: U.S.A.

EDUCATION

Ph.D., Economics, University of Michigan, 1990.
M.A., Statistics, University of Michigan, 1986.
M.A., Economics, University of Michigan, 1984.
B.A., Economics (with Honors), University of Notre Dame, 1982.

EMPLOYMENT HISTORY

Current Position

***Owner/Manager of B. Erard and Associates* –** a consulting business specializing in tax policy research, economic modeling, and statistical analysis since 1998.

Academic Appointments

Visiting Professor, University of Michigan Business School, 1998-1999 academic year

***Research Fellow*,** Office of Tax Policy Research**,** University of Michigan, 1998-1999 academic year

A*ssociate Professor (with Tenure) and Economics Ph.D. Program Director*, Department of Economics, Carleton University, July 1992 – June 1999

Assistant Professor, Department of Economics, University of Toronto, July 1990 – June 1992

<u>Other Employment</u>

Economist, Compliance Analysis Group, Internal Revenue Service, July 1988 – June 1990

Economist, Policy Economics Group (now known as the Barent's Group – A subsidiary of KPMG Consulting), Summers 1985, 1986

RESEARCH AREAS

Tax Policy, Tax Administration, Econometrics/Applied Statistics

TEACHING EXPERIENCE

Graduate Courses: Taxation, Public Expenditures, Applied Regression Analysis

Undergraduate Courses: Quantitative Methods, Taxation, Public Expenditures/ Benefit Cost Analysis, Introductory Microeconomics, Advanced Microeconomics

PROFESSIONAL HONORS AND RESEARCH AWARDS

Research cited in the *New York Times* and the *Wall Street Journal*

Invited to testify before the U.S. Senate Finance Committee at its hearing on "Best Practices in Tax Administration: A Look Across the Globe", April 12, 2011

Served as a keynote speaker, 2010 International Institute of Public Finance Annual Congress in Uppsala, Sweden.

Served as a distinguished invited guest speaker, Taiwan Ministry of Finance, 2008

Served as keynote speaker for Organization for Economic Cooperation and Development (OECD) conference on *Tax Compliance Measurement and Program Evaluation*, Ottawa, May 24-26, 2005

Winner (with co-author Jonathan S. Feinstein) of the International Institute of Public Finance (IIPF) Award for the Best Conference Paper Presented at the Annual World Congress ($2,500 DM), Berlin, August 23-26, 1993

PROFESSIONAL HONORS AND RESEARCH AWARDS, CONT.

Recognized as a *Top Undergraduate Economics Instructor*, University of Toronto, for course in Quantitative Methods, 1992

Finalist, National Tax Association–Tax Institute of America Dissertation Contest, 1990

SCHOLARLY PUBLICATIONS

Articles in Refereed Journals

"Participation and Compliance with the Earned Income Credit" (with Marsha Blumenthal and Chih-Chin Ho), *National Tax Journal*, 2005, Volume 58(2), 189 – 213.
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“Pre-Completed Income Tax Returns: Evidence from the California ReadyReturn Program”, *National Tax Association Proceedings from the 103rd Annual Conference in Chicago, IL, pp. 163–170, 2010.* *http://www.ntanet.org/images/stories/pdf/proceedings/10/24.pdf*

“Econometric Simulation of the Income Tax Compliance Process for Small Businesses” (with George Contos and Scott Stilmar), *Proceedings of the 2009 Winter Simulation Conference,* pp. 2902–2914, 2009. http://www.informs-sim.org/wsc09papers/281.pdf

“Towards a Framework for Tax Gap Estimation and Microsimulation Analysis of Tax Noncompliance”, *Proceedings of the 97th Annual Conference on Taxation*, National Tax Association, Minneapolis, Nov. 11-13, 2004, pp. 47–52.

“Mapping the Compliance Continuum”, in *Taxing the Hard-to-Tax: Lessons From Theory and Practice*, ed. James Alm, Jorge Martinez-Vazquez, and Sally Wallace, Amsterdam: Elsevier, 2004. http://aysps.gsu.edu/isp/files/ispwp0319.pdf

“Developing an Econometric Model for Measuring Tax Compliance Using Operational Audit Data” (with Chih-Chin Ho), *2002 American Statistical Association Conference Proceedings. http://www.irs.gov/pub/irs-soi/ho.pdf*

"The Income Tax Compliance Burden on Canadian Big Business”, in *Taxation Compliance Costs: A Festschrift for Cedric Sandford*, ed. by C. Evans, J. Pope, and J. Hasseldine, Sydney: Prospect Media Pty Ltd, pp. 317–335, 2001. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.197.6214&rep=rep1&type=pdf

“The Magnitude and Determinants of Federal Estate Tax Noncompliance” (with Martha Eller and Chih-Chin Ho), in *Rethinking Estate and Gift Taxation*, ed. William G. Gale, James R. Hines, Jr., and Joel Slemrod, Washington, DC: The Brookings Institution, pp. 375 – 410, 2001. http://epe.lac-bac.gc.ca/100/200/301/finance/working_paper_tcbt-e/1997/1997-06/wp97-6e.pdf

“Review of Alternative Approaches to Audit Selection”, in *Methods and Modeling Tools in Tax Administration*, ed. Dmitri Chernik and Jorge Martinez, Moscow: Unity Publishing, 2000.

"The Relationship Between State and Federal Tax Audits", (with James Alm and Jonathan S. Feinstein), in Empirical Foundations of Household Taxation, edited by Martin Feldstein and James Poterba, Chicago: University of Chicago Press, pp. 235–277, 1996.

Chapters in Edited Books and Published Conference Proceedings, Cont.

"Towards Building a Profile of an Income Tax Nonfiler: First Snapshots of a Ghost", (with Chih-Chin Ho of IRS), National Tax Association, Proceedings of the Eighty-Eighth Annual Conference, pp. 155–159, 1996.

"The Influence of Tax Audits on Reporting Behavior", in Why People Pay Taxes: Compliance and Enforcement, ed. Joel Slemrod, Ann Arbor: University of Michigan Press, 1992, pp. 95–114.

"The Compliance Costs of a Separate Personal Income Tax for Ontario: Simulations for 1991", (with Francois Vaillancourt), in Taxation in a Subnational Jurisdiction, ed. Allan Maslove, Toronto: University of Toronto Press, 1993, pp. 137–170.

Book Reviews

"Tax Compliance and Tax Morale: A Theoretical and Empirical Analysis", by Benno Torgler, *Journal of Economic Literature*, pp. 28-30, March 2009.

Working Papers

“The General Deterrent Effect of Tax Audits: An Econometric Framework for Analysis”

"The Income Tax Compliance Burden on Small and Medium-sized Canadian Businesses", Technical Committee on Business Taxation Working Paper 97-12, 1997

“A Critical Review of the Empirical Research on Canadian Tax Compliance”, Technical Committee on Business Taxation Working Paper 97-6, 1997

"Bibliography on Tax Compliance and the Underground Economy", 1996

"The Income Tax Compliance Cost of Canadian Big Business," Technical Committee on Business Taxation Working Paper 97-2, 1997

OTHER PROFESSIONAL ACTIVITIES

Editorial Responsibilities

Member of Board of Referees, *Encyclopedia of Law and Economics*

Member of the Editorial Advisory Board of the *National Tax Journal*, 1995 through 1998.

Academic Referee Work

Referee for The Accounting Review, Canadian Journal of Economics, Canadian Public Policy, Economic Design, European Economic Review, European Journal of Political Economy, Industry Canada, International Tax and Public Finance, Journal of Accounting Research, Journal of Development Economics, Journal of Econometrics, Journal of Public Economics, National Tax Journal, Public Finance Review, and Review of Economics and Statistics

Conference Presentations

Discussant Comments on "IRS Enforcement and State Corporation Income Tax Revenues" by Margot Howard, Internal Revenue Service-Tax Policy Center Research Conference on *Tax Administration at the Centennial,* Jr, 2013.

Discussant Comments on "The Effect of Public Disclosure on Reported Taxable Income: Evidence from Japan and Norway" by Joel Slemrod, National Tax Association Spring Symposium, May 16, 2013.

"Advances in Nonfiling Measures (with Mark Payne and Alan Plumley), Internal Revenue Service - Tax Policy Center Research Conference, June 21, 2012.

"The Individual Income Tax Reporting Gap: What We See and What We Don't" (with Jonathan Feinstein), Internal Revenue Service - Tax Policy Center Research Conference, June 22, 2011.

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"Predicting Aggregate Taxpayer Compliance Behavior" (with Alan Plumley and Derek Snaidauf), Internal Revenue Service - Tax Policy Center Research Conference, June 22, 2011.

Conference Presentations, Cont.

“Pre-Completed Tax Returns: The California Experience”, National Tax Association Annual Conference, November 20, 2010.

Discussant Comments on “How Does Behavioral Economics Inform Tax Policy?,” with papers by James Alm, Raj Chetty, and Joel Slemrod, National Tax Association Spring Symposium, May 13, 2010.

Discussant Comments on "Mobility, Competition and the Distributional Effects of Tax Evasion" by *James Alm* and *Edward Sennoga*, University of Tennessee Center for Business and Economic Research Conference on "Mobility and Tax Policy: Do Yesterday's Taxes Fit Tomorrow's Economy?," Knoxville, October 2-3, 2008.

“Econometric Models for Multi-Stage Audit Processes: An Application to the IRS National Research Program”, Andrew Young School of Policy Studies Conference on Tax Compliance and Evasion, Georgia State University, Atlanta, GA, October 1-2, 2007.

Invited panel member. “Joint Forum on Tax Compliance: Options for Improvement and Their Budgetary Potential”, arranged by the Congressional Budget Office, U.S.

Government Accountability Office, and Joint Committee on Taxation, September 6, 2007.

“Estate and Gift Taxation in Taiwan: An Analysis of the Current System and Some Proposals for Reform” (with Chih-Chin Ho), National Bureau of Economic Research (NBER) East Asian Seminar on Economics, Manila, Phillipines, June 23-25, 2006.

“The General Deterrent Effect of Tax Audits: A Preliminary Micro-Econometric Analysis” (with Edward Emblom and Chih-Chin Ho), Internal Revenue Service Research Conference, Washington, DC, June 14-15, 2006.

“The General Deterrent Effect of Tax Audits: An Econometric Framework for Analysis”, 2005 Taipei Conference on Taxation: Theory, Policy, and Administration, Institute of Economics, Academia Sinica, Taipei, Taiwan, December 29-30, 2005.

Conference Presentations, Cont.

"Estimating the Informal Supplier Tax Gap" (with James Alm), 2005 IRS Research Conference, June 7, 2005. http://www.irs.gov/pub/irs-soi/05almerard.pdf

"Comments on *Corporate Tax Noncompliance* by Michelle Hanlon, Lillian Mills, and Joel Slemrod", Conference on Taxing Corporate Income in the 21st Century, sponsored by Office of Tax Policy Research, University of Michigan, and Burch Center of University of California, Berkeley, Ann Arbor, Michigan, May 5-6, 2005.

"Towards a Framework for Tax Gap Estimation and Microsimulation Analysis of Tax Noncompliance", 97th Annual Conference of the National Tax Association, November 11-13, 2004.

"Mapping the Compliance Continuum", conference on "The Hard to Tax: International Perspective," Andrew Young School of Policy Studies, International Tax Program, Georgia State University, Stone Mountain Park, May 15-16, 2003.

"Compliance Measurement and Workload Selection with Operational Audit Data", Internal Revenue Service Research Conference, George Washington University, Washington, DC, June 11-12, 2002. http://www.irs.gov/pub/irs-soi/compmewo.pdf

"Statistical Models of Non-Compliance for Use with Operational Audit Data", Federation of Tax Administrators Compliance and Education Workshop, San Antonio, March 3-5, 2002.

"The Income Tax Compliance Burden on Canadian Big Business", International Tax Compliance Cost Symposium, Sydney, Australia, April 26-27, 2000.

"The Magnitude and Determinants of Federal Estate Tax Noncompliance", Brookings Institution – University of Michigan Office of Tax Policy Research Conference on
"Rethinking Estate and Gift Taxation", Washington, D.C., May 4-5, 2000.

"Participation and Compliance with the Earned Income Tax Credit", Annual Meeting of the National Tax Association, Santa Fe, November 9-11, 2000.

Invited Lectures

"Measuring the Tax Gap", delivered the inaugural series of Masterclass lectures for the Tax Administration Research Center (TARC), United Kingdom, November 21-22.
http://tarc.exeter.ac.uk/media/universityofexeter/businessschool/documents/centres/tarc/Erard_Measuring_the_Tax_Gap.pptx

"Measuring, Explaining, and Controlling Tax Evasion", invited lecture delivered at Georgia State University International Center for Public Policy Summer Training Program on Tax Policy, Fiscal Analysis, and Revenue Forecasting, August 7, 2013.

"Tax Administration and Compliance in Montana", contract with the Montana Department of Revenue to deliver a two-day seminar exploring ways to improve the administration of Montana taxes. Delivered jointly with Professor Joel Slemrod (University of Michigan Office of Tax Policy Research) and Professor Joseph Bankman (Stanford University Law School), August 9-10, 2010.

"Quantitative Techniques in Public Economics: Causal Inference", invited lecture delivered at Georgia State University Summer School in Public Economics, July 8, 2008.

"Alternative Methods for Centralized Case Examination Selection", delivered to Financial Data Center, Ministry of Finance, Taiwan, March 11, 2008.

"Burgeoning Challenges in Tax Administration", delivered to Training Institute, Ministry of Finance, Taiwan, March 12, 2008.

"Econometric Models of Multi-Stage Audit Processes", delivered to Department of Economics, National Taiwan University, March 13, 2008.

Consulting Engagements

Consultation on Tax Gap Measurement with Australian Tax Office (ATO), contract to participate as a member of an expert advisory group to critically evaluate and provide guidance on alternative options for measuring the federal tax gap in Australia. Work in progress.

Development of Causal Inference Models, task order with the Internal Revenue Service to provide advice on the use of causal inference models for developing counter-factual predictions of taxpayer behavior. As part of this work, I developed a novel microeconometric methodology for evaluating the determinants of taxpayer filing compliance using a combination of publicly available survey data on the general population (which does not identify tax filing status) and information from filed tax returns compiled by the IRS (which is restricted to taxpayers who actually filed a return). Project completed, April 2014.

Consultation on Tax Gap Measurement with Canadian Parliamentary Budget Office, provided expert advice and recommendations concerning estimation of the magnitude of the tax gap in Canada. Work completed, March 2014.

Development of Estimates of Taxpayer Underreporting, task order with the Internal Revenue Service to develop new estimates of line item taxpayer underreporting with respect to the individual income tax by adapting detection controlled estimation methods for use with National Research Program audit results for tax years 2006 through 2008. Project completed, February 2014.

Consultation on Tax Gap Measurement with Her Majesty's Revenue and Customs (HMRC), United Kingdom, met in person with the HMRC tax gap group and provided expert advice on a range of compliance measurement issues. Work completed, November 2013.

Development of Health Insurance Micro-Simulation Model, subcontracts with IBM to develop a rich micro-simulation model of health insurance cover to assist the Internal Revenue Service with workload planning relating to its responsibilities under the Affordable Care Act. Project completed, December 2013.

General Deterrence Modeling, multi-year project with IBM to develop and implement a longitudinal econometric framework for measuring the direct and indirect impacts of tax administration enforcement and service activities on taxpayer compliance for the Internal Revenue Service. Work completed December 2012.

Consulting Engagements, Cont.

Development of Models of Consumer Choice for Compliance Research, task order with the Internal Revenue Service to advise the Office of Research on the use of consumer choice models to model the determinants of tax preparation mode. Project completed, September 2012.

Refinement of Detection Controlled Estimation Methodology, multi-year project with the Internal Revenue Service to refine the Detection Controlled Methodology for estimating noncompliance by line item on tax returns for use with existing and future NRP audit data. Work completed August 2012.

Profile of Canada's Fishing Industry Labour Force*,* contract with Fisheries and Oceans Canada to assist with validation of the methodology underlying its report profiling Canada's Fishing Industry Labour Force from 1994-2006 based on information obtained from tax records. Project completed March 2010.

Analysis of the California ReadyReturn Program, project commissioned by the Frasier Institute to review and analyze the performance of the California ReadyReturn program in providing California taxpayers with the opportunity to receive and file a pre-completed income tax return. Project completed September 2009.

Measuring Compliance with the "Nanny Tax", contract with a corporate client to develop and implement a statistical methodology to estimate the degree to which household employers comply with their federal requirements to report and remit Social Security, Medicare, and unemployment taxes on behalf of their domestic employees. Project completed, August 2009.

Sensitivity Analysis of Detection Controlled Estimation Methodology, task order from the Internal Revenue Service to perform a sensitivity analysis of the Detection Controlled Estimation Methodology for estimating noncompliance for certain income line items of the individual income tax return. Project completed May 2009.

Small Business Tax Compliance Burden Estimation, subcontract from IBM to provide expert assistance relating to the design of an econometric framework for predicting the magnitude of the burden experienced by small businesses in complying with their federal tax filing and reporting obligations. Work completed January 2009.

Consulting Engagements, Cont.

Indirect Effects of IRS Service and Enforcement Activities, subcontract from IBM to review the literature on the impact of service and enforcement activities on tax compliance, help to facilitate a conference on best practices for measuring this impact, and assist with drafting a report with recommendations for implementing these practices. This work is meant to serve as a guide for the Internal Revenue Service in its allocation of resources associated with a large multi-year investment initiative to study the indirect effects of its activities on compliance. Project completed December 2008.

Combining Operational and Random Audits, task order from the Internal Revenue Service to develop and apply a statistical methodology to integrate data from operational audits and random audits to measure noncompliance characteristics in the general taxpayer population. Project completed October 2008.

Line Item Estimation of Individual Income Tax Noncompliance, task order from the Internal Revenue Service to extend the detection controlled estimation methodology to permit estimation of reporting noncompliance for separate income items on the individual income tax return using NRP data. Project completed 2007.

Detection Controlled Estimation, task order from the Internal Revenue Service to develop and estimate an econometric model to assess the magnitude of undetected noncompliance on returns examined under the *National Research Program (NRP)*, a large-scale random audit study of noncompliance on individual income tax returns. The results of this project were used in development of the official IRS estimates of the income tax gap – the difference between taxes owed and taxes voluntarily reported and paid. Project completed July 2006.

Compliance Burden of Retail Sales Tax, subcontract with PricewaterhouseCoopers to participate in the development of a survey instrument and to undertake an econometric analysis of survey results pertaining to a large scale nationwide analysis of the compliance burden of retailers in administering state retail sales taxes. The work is being undertaken as part of the Streamlined Sales Tax Project. The survey instrument was completed in November 2004 and administered in 2005. The final report containing our econometric analysis of the survey results was completed in June 2007.

Consulting Engagements, Cont.

OECD Conference Keynote Speaker and Conference Facilitator, contract with the Canada Revenue Agency to present the keynote address at an Organization for Economic Cooperation and Development (OECD) conference on *Tax Compliance Measurement and Program Evaluation* held in Ottawa, Canada; facilitated discussions over the three days of the conference (May 24-26); and assist in drafting the Workshop report. Final report completed in September 2005. The workshop included representatives from the following countries: Australia, Canada, France, Japan, Netherlands, New Zealand, Sweden, the United Kingdom and the United States.

Departmental Performance Report, contract with the Canada Border Services Agency to provide expert assistance with respect to the development of the Agency's first Departmental Performance Report, including: providing guidance on how to link performance results to key expected outcomes and anticipated results (particularly with respect to compliance and enforcement); assistance in the development and interpretation of key performance measures; review of draft reports to ensure proper tone, emphasis, and linkages; assistance with rewriting and re-organizing the report to enhance clarity and impact. Completed 2005.

Assessing the Informal Supplier Tax Gap*,* contract with the Internal Revenue Service (James Alm, co-researcher) to develop estimates of the extent to which informal suppliers comply with U.S. federal income tax regulations. Final report completed September 2004.

Corporate Tax Gap Estimation, contract with the Internal Revenue Service to develop an econometric methodology for estimating the income tax gap for small and medium sized corporations. Completed July 2004.

Trade Reporting Compliance, contract with the former Canada Customs and Revenue Agency to develop estimates of the degree to which importers comply with valuation, classification, origin, and duty payment requirements. Completed March 2004.

Post-release Verification Program Evaluation, contract with the former Canada Customs and Revenue Agency to perform a thorough review of the Canadian post-release verification program with a view towards improving efficiency and performance in measuring and promoting compliance with trade reporting requirements. Completed March 2004.

Consulting Engagements, Cont.

Development of Performance Indicators, contract with the former Canada Customs and Revenue Agency (CCRA) to assist in the development and construction of performance measures, conduct statistical analysis to measure program performance, assist in the creation of CCRA business plans and performance reports. Work completed December 2003.

Refinement of Alternative Tax Scoring Methodologies, contract with the Internal Revenue Service to refine and perform additional testing of the alternative tax scoring methodologies for audit selection developed under an earlier contract. See below under "Alternative Tax Scoring Methodologies". Final report completed July 2003.

Assessment of the Benefits of New Random Audit Data for Workload Selection, contract with the Internal Revenue Service to empirically evaluate how well IRS workload selection criteria developed based on random audit samples from one tax year perform over a series of subsequent years, and to assess from these results how frequently random audit samples should be updated to maintain the efficacy of the audit programs. Final report completed June 2002.

Development of a Framework for Tax Gap Estimation**,** contract with the Internal Revenue Service to develop and test an econometric framework for the estimation of the federal income tax reporting gap using operational audit data. Final report completed November 2001.

Canada Customs and Revenue Agency Annual Report**,** contract with the former Canada Customs and Revenue Agency to provide expert advice on the development of a conceptual framework for measuring and reporting on the Agency's performance against the objectives set out in its Corporation Business Plan, and to assist in drafting major portions of the Annual Report covering the Agency's performance in delivering tax services and benefit programs. Work completed, September 2001.

Earned Income Tax Credit Participation Study, contract with the Internal Revenue Service to develop an estimate of the degree of program take-up within the federal Earned Income Tax Credit program in tax year 1996, taking into account the compliance burden associated with program participation. The contract also a called for the development of profiles of eligible households that do and do not participate. Project Completed in February 2001. A follow-up project extending the results to tax year 1997 was completed in October 2001.

Consulting Engagements, Cont.

Magnitude and Determinants of Estate Tax Noncompliance, econometric analysis of the magnitude and determinants of estate tax underreporting. I co-presented the results of this research with IRS researchers at a Brookings Institution Conference in May 2000. The underlying statistical methodology for the study builds on my earlier contract work for the IRS (see below) on estimating the estate tax underreporting gap.

Quality Assurance Surveillance Plan, Department of Education contract to develop an action plan for studying trends within the sub-baccalaureate labor market at the national and sub-national levels, and to explore whether post-secondary enrollment and completion patterns by field are coincident with these trends. Project completed October 1999.

Sub-baccalaureate Labor Market Trends and The Relatedness of Postsecondary Enrollment Trends, Department of Education project to carry out the study specified in the above action plan. Final report completed in October 2000.

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Alternative Tax Scoring Methodologies, Internal Revenue Service contract to develop an alternative to the current DIF (discriminant analysis) approach to audit selection based on modern statistical techniques. Final report completed November 1999

Estate Tax Underreporting Gap, Internal Revenue Service contract to develop estimates of the estate tax underreporting gap using a sophisticated econometric model. Project completed in February 1999.

Tax Audit Selection Study, USAID contract (through Georgia State University) to prepare a report describing audit selection techniques by state and federal tax agencies in the U.S. and Canada, and to develop a methodology for implementing statistically-based audit selection procedures in Moscow Tax Inspectorates. Field work in Moscow and report completed in November 1997.

Business Tax Compliance Burden Studies, contract with the Canadian Technical Committee on Business Taxation to develop, implement, and analyze two separate surveys on the compliance costs of Canadian corporate income and capital taxes. A report on the compliance burden of large Canadian corporations was completed in January 1997. A second report on the compliance burden of small and medium-sized Canadian businesses was completed in November 1997.

Consulting Engagements, Cont.

Underground Economy Study, contract with the Canadian Technical Committee on Business Taxation to prepare a critical review of the empirical research on tax compliance, particularly as it applies to businesses in Canada. The final draft of report was completed in September 1997.

Follow-up Study, contract with the Auditor General of Canada to prepare a follow-up report on Revenue Canada's progress since my earlier 1994 report on its new regime for processing personal income tax returns. Work completed in August 1997.

Evaluation of the Canadian Child Tax Benefit and Goods and Services Tax Credit Programs, contract with the Auditor General of Canada to evaluate the administration of these programs by Revenue Canada. The former program has some similarities to the U.S. Earned Income Tax Credit. Project completed in September 1996.

Nonfiler Tax Gap, developed (free of charge) in 1994 a novel statistical methodology to estimate the magnitude of noncompliance attributable to income tax nonfilers using TCMP data, which was used to generate the official IRS tax gap estimates for nonfilers. Dr. Chih-Chin Ho of the IRS and I extended this methodology to permit the development of a profile of non-filers -- work published in the *Journal of Public Economics.*

Federal-State Auditing and Compliance, study of state and federal audit practices performed for the Oregon Department of Revenue with Jonathan Feinstein of Yale University. I developed computer programs to merge micro-level federal and state tax return and audit information, and we performed an extensive analysis of the data. We prepared a report for the Oregon Department of Revenue on ways to improve auditing practices. Our research with this data led to my chapter "The Relationship Between State and Federal Tax Audits", (with James Alm and Jonathan Feinstein), in a National Bureau of Economic Research volume published by the University of Chicago Press. Project completed in 1994.

Evaluation of the New Regime for Processing Tax Returns, contract with the Auditor General of Canada to evaluate Revenue Canada's administration of its new regime for processing individual income tax returns. Report completed in 1994.

Consulting Engagements, Cont.

Electronic Filing Study, contract with the Auditor General of Canada to prepare and administer a survey of federal tax agencies in the U.S., Australia, and New Zealand on their experiences with electronic filing of tax returns. I prepared a report summarizing the findings of my survey and drawing lessons for the Canadian electronic filing program. Project completed in 1993.

Individual Income Tax Gap Estimation, provided approximately 15 days of substantive technical and computing assistance to the IRS Compliance Analysis Group (at no charge) to update the IRS Tax Model so that it could make use of the 1988 TCMP data to generate new estimates of the Individual Income Tax Gap. Work completed in 1993.

Compliance Costs of Separate Personal Income Tax System in Ontario, 1992 contract with the Ontario Fair Tax Commission to evaluate the taxpayer compliance costs that would be associated with a shift from federal to provincial administration of Ontario's personal income tax.