Personal attribution of income and geographical allocation of income are different. Today I look at cost sharing agreements, not at Double Irish nor at Dutch Sandwich. Cost sharing agreements not only between affiliated corporations but also between independent persons can make base erosion & profit shifting as debt-finance can: time value of money and risk premium. Arm’s length standards only treat personal attribution, but we need other ways in order to prevent profit shifting from the view point of geographical allocation.

Google’s tax planning and cost sharing agreement

Figure 1

USA          Bermuda/Ireland    Ireland      Europe
┏━━┓ buy-in ┏━━┓    ┏━━┓100
┃A-Co┃←───┃C-Co┃    ┃ B - C o┃←──XYZ etc.
┗━━┛  cost  ┗━━┛    ┗━━┛business profits
R&D     sharing  ↑ 98 ┏━━┓ 99 │
└ ─   ┃ D - C o┃←─┘royalties
r o y a l t i e s┗━━┛Nederland

(If Figure 1 is not showed well, please see Addressing Base Erosion and Profit Shifting 12Feb2013 at 74.)

1 OECD uses “intangibles”. Intangibles might cover wider something than intellectual property rights. Is it easy to move intangibles across the border? It is difficult question because “intangibles” are hard to define.
A-Co. (head of Google) does R&D in USA.
A-Co. and C-Co. had made a cost sharing agreement (or cost contribution arrangement) and C-Co. paid money (called as “buy-in” payment) to A-Co., and then A-Co. became the owner of intellectual property rights in USA and C-Co. became the owner of intellectual property rights in Europe.
C-Co. earns European profits through B-Co. and D-Co. with “Double Irish & Dutch Sandwich” structure, which I ignore today.

US Congress gets angry.
Why C-Co. earns profits even though A-Co. does R&D? Why the profits are not subject to tax in USA?
US IRS and Google answer: we have already agreed that the “buy-in” was at arm’s length principle.

US Government has two weapons: arm’s length principle and worldwide taxation.

In the context of transfer pricing, US Treasury made T.D. 9568, in which C-Co. cannot get risk premium because C-Co. acts not as an entrepreneur but as an investor (called as “investor model”).
“Investor model” cannot deny shifting of time value of money from A-Co. to C-Co.

Cost sharing agreements not only between affiliated corporations but also between independent persons (including individuals) can make profit shifting as debt-finance can. However, thin capitalization rule (or other anti earnings stripping rule) cannot deny shifting of time value of money in cost sharing agreements.

It should be emphasized that some types of tax avoidance in recent years (cost sharing, business restructuring, or etc.) are done along with arm’s length principle. Nowadays, arm’s length principle is a weapon not only for the taxing authority but also for multinational enterprises’ tax avoidance.

C-Co. is the owner of the rights. Usually an owner is labeled as an equity holder, not as a debt holder. However, if we adopt CBIT (not allowing deduction of interests like dividends) or ACE/BEIT (allowing deduction of time value part of dividends and interests), difference between debt and equity is irrelevant. Relevant difference exist between time value of money and bet.

Today I compare equity finance, debt finance, and “buy-in” in arm’s length situations.

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3 Andrew Blair-Stanek, Intellectual Property Law Solutions to Tax Avoidance, 62 UCLA Law Review 2 (2015) (http://ssrn.com/abstract=2446259) proposes limiting intellectual property law protection of C-Co.’s rights if C-Co. argues that arm’s length price of the “buy-in” is cheap. This proposition is interesting, but I guess that it will not work well because C-Co.’s rights are protected by laws of European countries, not of USA.
Option 3 (Thick capitalization) tries to deny shifting time value of money. More aggressively, OECD proposed non-recognition of rights (especially trademark) shifting to C-Co. at pages 25-27.
3. Model

3.1. Model of equity finance

A-Co. is a resident of State S in which tax rate is 30% and does R&D. C-Co. is a resident of State R in which tax rate is 40% and does investment.

A-Co. has 100 projects. Each project will produce $1 return with success rate of 50%. Therefore 100 projects’ expected value is $50. It is supposed that risk free rate of return (as time value of money) is 10%. 100 projects’ discounted present expected value is $50/1.1 = $45.45 if we suppose risk neutral. Usually investors are risk averse, and it is supposed that fair market value as arm’s length price is $40. The difference between $50 and $44 (= 40 x 1.1) is risk premium. C-Co. invested $40 to A-Co. as equity and C-Co. is an owner of A-Co.

A-Co. succeeded 50 projects. According to existing tax law, A-Co.’s taxable income is $10 (= 50 - 40) and pay $3 tax to State S. A-Co. pays $7 dividends to C-Co. If state R adopts worldwide taxation with (indirect) foreign tax credit, then C-Co. pay $1 (= 4 - 3) tax to State R.

Suppose that s is a number of success projects. A-Co.’s taxable income is $s - 40 and tax amount in State S is $0.3(s - 40). C-Co.’s tax amount in State R is $(0.4 - 0.3)(s - 40).

According to CBIT, A-Co.’s tax in State S and C-Co.’s tax in State R are same as in previous paragraph.

According to ACE/BEIT, A-Co. can deduct time value of money of $40 equity, i.e. $4, therefore A-Co.’s taxable income is $(s - 44) and tax amount in State S is $0.3(s - 44). C-Co.’s tax amount in State R is $(0.4 - 0.3)(s - 44).

3.2. Model of debt finance

C-Co. invested $40 to A-Co. as debt and C-Co. demands $50 payment from A-Co. (i.e., interest is $10). Higher and higher the demanded interest is, more and more interest payments resemble dividends in economic sense: therefore tax scholars have long argued that legal distinction between debt and equity has little meaning.

However, according to existing distinction between debt and equity, A-Co.’s taxable income is $s - 50) and tax amount in State S is $0.3(s - 50) (however, if s < 50, taxable income and tax amount is $0 without tax refund with loss situation or without loss carryover). C-Co.’s tax amount in State R is $4 (=0.4 * 10) if 50 ≤ s, $0.4(s - 40) if 40 ≤ s < 50, and $0 if s < 40.

According to CBIT, A-Co.’s tax in State S is $0.3(s - 40) and tax amount in State R is $(0.4 - 0.3)(s - 40).

According to ACE/BEIT, A-Co. can deduct time value of money of $40 equity, i.e. $4, therefore A-Co.’s taxable income is $(s - 44) and tax amount in State S is $0.3(s - 44). C-Co.’s tax amount in State R is $(0.4 - 0.3)(s - 44).

3.3. Model of “buy-in”

C-Co. bought A-Co.’s 100 projects by paying $40 ("buy-in"). If expenses of R&D is $40, then A-Co.’s taxable income is $0 and C-Co.’s taxable income is $(s - 40). This result resembles to the model of debt finance with high demanded interest payments.

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8 Please ignore that tax rate of Ireland is 12.5%.
9 It is difficult to find risk free rate of return. See, John R. Brooks II, Taxation, Risk, and Portfolio Choice: The Treatment of Returns to Risk Under a Normative Income Tax, 66 Tax Law Review 255, at 291-293 (2013 http://ssrn.com/abstract=2304193). Thomas J. Brennan, Perils of Partial Mark-to-Market Taxation (http://ssrn.com/abstract=2313214) at 15-16 supposes that risk free rate of return is 3.5%. Japanese Supreme Court case, 6 July 2010 (reported in Minshū 64-5-1277) treated annual pension of ¥2.3 million * 10 years, which could be changed to one-time payment of ¥20.5988 million. \[ \sum_{i=0}^{9} \frac{2.3}{(1 + 0.0254)^i} = 20.5988 \] means that notional rate of return is 2.54% per year. Risk free rate of return of 10% per year is unrealistically high, so please suppose that the projects need several years (for example, 1.035^3 = 1.1 or 1.0254^4 = 1.1).
If we adopt CBIT or ACE/BEIT in the “buy-in” situation, then tax allocation between State S and State R is same as in models of equity finance and debt finance.

### 3.4. Comparison of equity finance, debt finance and “buy-in”

<table>
<thead>
<tr>
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<th>debt finance</th>
<th>buy-in</th>
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<td>State R</td>
<td>State S</td>
</tr>
<tr>
<td>existing law</td>
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<td>0.1(s - 40)</td>
<td>0.3(s - 50)</td>
</tr>
<tr>
<td>CBIT</td>
<td>0.3(s - 40)</td>
<td>0.1(s - 40)</td>
<td>0.3(s - 40)</td>
</tr>
<tr>
<td>ACE/BEIT</td>
<td>0.3(s - 44)</td>
<td>0.1(s - 44)</td>
<td>0.3(s - 44)</td>
</tr>
</tbody>
</table>

### 3.5. Distinction between good base erosion and bad base erosion (?)

T.D. 9568 (“investor model”) argues that $40 of “buy-in” is too low as arm’s length price even though fair market value of 100 projects is $40, because C-Co. is not an entrepreneur but an investor. Therefore the “buy-in” price should be $45.45 in order to recapture the risk premium of $5.45 (or after the projects, $50 - 40 x 1.1) as tax base in State S. However even T.D. 9568 allows profit shifting of $4.55 (=50 - 45.45) as time value of money from State S to State R.

Certainly $4.55 of time value of money should be attributed to C-Co. as an investor from the view point of personal attribution of income, but don’t we imagine that the part of $4.55 also belongs to State S from the view point of geographical allocation?

Certainly, many tax conventions allocate taxing right of interest income only to State R, but as seen before, OECD Model Tax Convention and many other existing tax conventions also allocate some taxing right to State S in the context of interest payments. Why “buy-in” can avoid income allocation to State S? Why we forget geographical allocation of income in cost sharing agreements?

BEPS Action Plan has no intention to change taxing right allocation between source state and residence state\(^{11}\). BEPS Action Plan’s approach needs distinction between good base erosion which should not be changed and bad base erosion which should be denied. Can we make such distinction? If A-Co. and C-Co. are independent, then is base erosion of State S by using “buy-in” good base erosion?

If we want to prevent tax avoidance of multinational enterprises, we should not stick to personal attribution and arm’s length principle (and footnote 4 recommends some deviations from arm’s length principle). However, OECD adopted AOA in 2010 in which arm’s length principle is key; therefore BEPS Action Plan will not be able to change stickiness to personal attribution.

If we faithfully face base erosion, then we should not only rely on arm’s length principle in personal attribution but also recall geographical allocation of income, and CBIT or ACE/BEIT type of tax system or some types of formulary apportionment (which I don’t discuss today) will be needed. Distinction between good base erosion and bad base erosion will only produce ill-defined solutions.

In all three models of equity finance, debt finance and “buy-in”, C-Co. can earn some income from the view point of personal attribution, but all of income belong to State S from the view point of geographical allocation. As I said “more confusingly” in section 0, geographical allocation does not always means taxing right allocation.

CBIT allocates taxing right concerning time value of money components and bet components to State S.

ACE/BEIT allocate taxing right only concerning bet components to State S; State R has taxing right concerning time value of money components, but it is a difficult and different problem whether State R should exercise the taxing right, because traditional tax theory has argued that time value of money should be tax-free\(^{12}\).

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\(^{10}\) In Table 1, State R exempts time value of money components. If State R imposes tax also on time value of money components, then tax amount in State R is $0.1(s - 44) + 0.4 x 4$.

\(^{11}\) As said by Masatsugu Asakawa and Pascal Saint-Amans in OECD-Keidanren & 21 PPI International Tax Conference on 3 February 2015 at Keidanren Kaikan, Tokyo.

4. Do we truly believe in arm’s length principle?

Place of omission\textsuperscript{13} gives us interesting viewpoint.\textsuperscript{14}

In \textit{Korfund v. Commissioner}, 1 TC 1180 (1943), a German corporation (Zorn) made a contract (covenant not to compete) with a US corporation (Korfund), in which Zorn would not do business in USA and Korfund would pay money to Zorn. Zorn did nothing in USA but earned income from a US corporation. Was source of the income located in USA? Tax Court said that Zorn had possibility to do business in USA so Zorn had “interests in property” in USA; therefore source of the income was located in USA.

Zorn and Korfund were not affiliated. It means that the covenant not to compete was at arm’s length terms. If affiliated corporations (like A-Co. & C-Co. in Figure 1) make a covenant not to compete whose terms are same as the covenant between Zorn and Korfund, then can payment from A-Co. to C-Co. be deducted from the taxable income of A-Co.?

IRS may not allow the deduction, but the payment is at arm’s length principle.  
We will say that there are two types of arm’s length transactions: first type is reliable in transfer pricing issues and second type is not reliable. How can we differentiate between two types?

We should differentiate between a stage of real factor activities and a stage of income distribution.

In section 3.1 (model of equity finance), C-Co. have invested money as equity to A-Co. and A-Co. did production\textsuperscript{15} activities with real factor (laboratories, research workers, and etc.). A-Co. have done real factor activities in State S even though personal attribution of income belongs to C-Co. as in arm’s length settings. We can call the stage of income distribution as “financial”, but the word of financial is too narrow because income distribution can be done not only debt/equity investments but also in other types of transactions (“buy-in”, covenant not to compete, and etc.).

Zorn did nothing and its income at arm’s length principle was justified only in the stage of income distribution. Korfund had did real factor activities in USA, therefore geographical allocation of income should have be located in USA. Geographical allocation of income should be based on real factor activities, although personal attribution of income is at arm’s length principle in the stage of income distribution.

How can we differentiate two types of arm’s length transactions? 
First reliable type is described in the stage of real factor activities. Second unreliable type is in the stage of income distribution.\textsuperscript{16}

5. What is geographical allocation criterion: production or demand?

If a resident in Ireland owns immovable properties in USA and gets rents from USA, why we imagine that geographical allocation of the rents belongs to USA?

First answer: the immovable properties as real income producing factors exist in USA.  
Second answer: the demands of the immovable properties exist in USA.

In Figure 1, the producing activities (i.e., R&D) occur in USA and the demand of intellectual property rights exists in Europe. Historically we imagine geographical allocation of income according to producing activities, because

\textsuperscript{13} See, Ekkehart Reimer, \textit{DER ORT DES UNTERLASSENS: DIE URSPRUNGSBEZOGENE BEHANDLUNG VON ENTGELTEN FÜR UNTÄTIGKEIT IM INTERNATIONALEN STEUERRECHT} (Beck, 2004).

\textsuperscript{14} See as other examples, \textit{Linseman v. Commissioner}, 82 TC 514 (1984) in which Liseman as ice hockey player earned “sign-on bonus” from a US hockey team; \textit{BFH v. 9.9.1970 I R 19/69} in which a German actor earned income from a US movie company because the actor must be free when the company made a movie, but, in actual, the actor did nothing at that time.

\textsuperscript{15} Today I use “production” in broad meaning, including R&D activities, narrow production activities, sales activities, and etc.

\textsuperscript{16} I believe that burden of risk is on the stage of income distribution; therefore risk should have been ignored when the tax authority apply arm’s length principle. This thought can be seen in discussing the profit attributed to a PE in AOA because AOA denies some types of risk transactions between branches or between a branch and a headquarter. However it is regrettable that AOA basically looks at function, assets, and risk.
we adopted “no taxation without PE” rule, which means that real factors justify source of income.

Figure 2

State R  State S  State D (emand)
investor ------------ producer ------------ customer
income tax     corporate tax     consumption tax

MIRRLEES REVIEW (footnote 6, page 430) showed Figure 2.
Income tax revenue belongs to State R in which investors reside.
Corporate tax revenue belongs to State S in which corporations do their business activities.¹⁷
Consumption tax revenue belongs to State of demand in which customers reside.

However, some tax scholars have recently recommended taxing right allocation according to demand¹⁸.

What is source (meaning “from what”, not “from where”) of income: production or demand?
Two answers have same level of persuasiveness: corporations can earn income because they have produced something or because their products are demanded by someone.

Therefore, geographical allocation of income shall be decided not by notional deduction but by efficiency¹⁹ or other view point (such as equity or fairness between countries²⁰).

I believe that taxing right allocation according to production is ineffective from the view point of efficiency of production factor allocation, so I also believe in taxing right allocation according to demand not only in the context of consumption tax²¹ but also in the context of corporate tax. But this issue can be discussed in the far future.

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¹⁷ In Figure 1, A-Co. does R&D in USA (State S), and C-Co.’s intellectual property rights are valid in Europe (State D).
²⁰ However international equity or fairness is hard to discuss. See, Richard Musgrave & Peggy Musgrave, International equity, in MODERN FISCAL ISSUES. ESSAYS IN HONOR OF CARL S. SHOUP 63 (University Microfilms International, 1972)