

Evaluating Know-how for Transfer Price Benchmarking

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Abstract Companies' added value, even due to the expansion of the knowledge economy, is increasingly immaterial, and so is their taxable base: hence the importance of know-how, in spite of its ambiguous nature, to be tackled with an interdisciplinary accounting, financial and fiscal approach. Due to their immaterial nature, intangibles such as know-how are frequently negotiated within multinational groups, so becoming sensible to transfer pricing issues, which also depend on complex international accounting standards, with manifold corporate governance implications. OECD guidelines address the intricate problem trying to adapt standard transfer pricing methods to specific circumstances, but uncontrolled comparisons remain an uphill task, even if international accounting principles and market best practices may provide some useful hints for appraisal. To the extent that intangibles are unique, they cannot paradoxically be universal, so challenging arm's length comparisons. Fair value market valuations, based also on critical accounting, consequently represent an uneasy and slippery benchmark. The optimal target is to disarticulate, on both economic and accounting terms, the value chain that rotates around know-how, attributing its belonging pieces to single taxpayers, so identifying a fair taxable base within each country, remembering that know-how is the engine behind growth ... and taxes.

Keywords: *know-how; IAS 38; tax accounting; arm's length; information asymmetries; intangibles valuation*

1. Introduction

Know-how (to do it) is a key and trendy factor behind competitive and comparative advantage [1], representing the invisible glue behind strategies of product differentiation and innovation, creating ancillary value from other factor inputs.

If comprehensive added value may be compared to an iceberg, know-how may well represent its gravitational sunk part.

Evaluation of know-how, trying to properly blend technology with organizational issues, is so unsurprisingly crucial and it may be carried on following complementary methodologies which try to detect, from complementary sides, its traditionally disguised nature.

The slippery nature of intangibles and their consequent uneasy valuation boundaries represent a well known problem, with transfer pricing consequences that OECD guidelines laboriously try to address. The fiscal framework is however unable to properly identify and assess the chameleon nature of specific intangibles, such as know-how.

Arm's length indicators between allegedly equivalent uncontrolled transactions depend on international market comparisons, whose significance is indirectly proportional to the intrinsic value of know-how; this brings to a paradoxical situation where originality and uniqueness are a core distinctive value of know-how, with a consequent positive impact on its potential fiscal value, but at the same time represent a major obstacle to its fair tax

assessment. The more know-how is specific and worthy, the less it is (fiscally) detectable.

Starting from this often underestimated paradox, the paper tries to analyze the economic meaning of fiscal and legal definitions of know-how, showing why they are inadequate in many contexts, regarding not only their intrinsic static nature, but also their evolving dynamics.

Combination, sharing and transfer of know-how, especially beyond domestic boundaries, may deeply change its plastic nature, up to the point of making arm's length comparisons a mission impossible. Opportunistic behaviour, where value may be voluntarily concealed, so eroding a fair tax base, is a natural consequence of these problems, counterbalanced by arbitrariness of potential tax claims, so bringing to a muddy suboptimal and lose-lose "far west" scenario.

The methodology of the paper is based on an interdisciplinary analysis of the strategic and economic value drivers behind know-how, considering that even international accounting standards, traditionally used as a starting point for the assessment of a fair tax base, often misrepresent its real value.

Definitions and identification of legal and economic boundaries are a prerequisite for evaluation: while this statement may seem obvious, it may become highly critical whenever concerning know-how, up to the point of doubting if a value may fairly be estimated.

Legal and fiscal definitions are challenged and stressed considering the aforementioned dynamic patterns (and guessing their endless combinations), preparing the ground for an interdisciplinary comparison with (likewise troubled) accounting and economic/financial evaluations.

The paradox of valuable but hardly comparable know-how is also explained by the presence of information asymmetries, intrinsically embedded in latent assets [2,3]; while information asymmetries represent a key and trendy topic in economic theory and corporate finance, their application to fiscal issues is much less investigated [4].

The topicality of the often underestimated and misrepresented know-how value represents the architrave of this paper, whose methodology is based on a critical comparison among different appraisal techniques, functional to the research questions.

In particular, the methodology starts from the legal and fiscal definitions of know-how, in order to framework its possible boundaries, linking it with information deriving from (conservative) accounting principles. Unsatisfactory answers coming from both legal and accounting sources are then confronted with the most suitable economic and financial appraisal methods, in order to provide a sounder platform for further analysis. Results challenge the intrinsic orthodoxy of OECD guidelines, mostly unsuitable for intangibles.

The main findings concern the importance of a comprehensive and synergistic interdisciplinary approach for proper know-how identification and assessment.

Fiscal issues so need an accounting and financial substrate, where economic substance should always prevail over legal form, so preventing know-how transformation in an (apparently) empty shell.

Insights from the paper challenge OECD Transfer Pricing guidelines and consequent know-how appraisal methodology, with new complementary proposals for reasonable and feasible tax detection.

The scientific literature has extensively examined the problems related to the evaluation of intangibles, following an interdisciplinary approach where legal [5], economic and financial [6,7,8] issues interact with accounting paradigms, accompanied by strategic analyses focusing on marketing, technology, human resources and other related topics.

Intangibles, especially if non-tradable, constitute an ongoing challenge for accountants [9,10].

Fiscal problems concerning in particular transfer price sensitive international negotiations have also been vastly investigated [11,12,13,14].

This extensive and articulated literature stream seems however both unbalanced, since it mainly focuses on registered intangibles, such as trademarks or patents, or to residual goodwill (a Phoenix for accountants) and unsatisfactory, being evaluation issues still mysterious and mostly unsolved. Know-how stands out as a peculiar and enigmatic issue, due also to its undefined nature, demanding for further research, which should go beyond traditional paradigms, embracing also the evolving streams of knowledge economy [15], the cornerstone of post-industrial sustainable development and new evaluation metrics.

2. Frameworking a Slippery Definition

Intangible assets, such as patents or trademarks, are particularly difficult to evaluate, due to their intrinsic "immaterial" nature and many different - complementary - appraisal methods are traditionally used within the

business community; valuation issues are even more complicated for non tradable or not deposited intangibles, such as know-how, trade-secrets, goodwill, etc., characterized by limited if any marketability, higher and pervasive information asymmetries and less defined legal boundaries.

These difficulties in market evaluation are even more evident considering that, from an accounting point of view, according to IAS 38 there is no active market for intangibles, typically undetected, and it is consequently difficult to assess their fair value.

IAS 38 (Para. 12.) defines an intangible asset as "an identifiable non-monetary asset without physical substance". The definition requires an intangible asset to be identifiable to distinguish it from (residual) goodwill and that is why in most cases accounting principles can hardly support tax guidelines in detecting know-how.

Tax regulators are conscious of the problem and the target of [16] is to minimise controversies and maximise tax certainty, avoiding double or less-than-single taxation. The tax treatment of intangibles in the context of transfer pricing (TP) has become a leading international tax concern. Possible cross border relocation, with income shifting policies looking for milder taxation, may cause tax base erosion in (traditionally more developed and highly taxed) countries where the intangible originates.

According to Para. 6.1.: "intangibles are one of the most challenging topics in the transfer pricing area, both from a theoretical perspective and because of the number and size of the disputes that arise in relation to their recognition and valuation".

Another cornerstone - described in Chapter 3, Para. A.4., of [16] - is represented by "comparable uncontrolled transactions", intrinsically referable to arm's length principles^[17] (what an independent enterprise would have done in comparable circumstances, referring to standard and "open market" prices); further problems may arise with intangible assets [18], since they are commonly negotiated within international groups (see [19], art. 9), being so relevant for TP issues but not useful for uncontrolled - arm's length - comparisons.

The distinction between different intangibles has, however, to consider their intrinsically versatile nature (due to their intangibility, with consequent little if any problems of transportation, storing, etc.) according to which they may be easily moved and frequently combined, looking for precious synergies (e.g., a branded product whose quality is enhanced by various patents). When a combination of intangibles is sold or licensed in a package-deal "bundled" transaction (See Para. 6.18 and [21]), often "embedded" in some material assets, specificity increases and then the fiscal detection of their value may become even more difficult, trespassing to arbitrariness.

Know-how is often included in (technical) service, with possible converging or diverging contracting [16].

Para. 7.3 affirms that: "intragroup arrangements for rendering services are sometimes linked to arrangements for transferring goods or intangible property (or the licensing thereof). In some cases, such as know-how contracts containing a service element, it may be very difficult to determine where the exact border lies between the transfer or licensing of property and the transfer of services. Ancillary services are frequently associated with

the transfer of technology. It may, therefore, be necessary to consider the principles for aggregation and segregation of transactions in Chapter III where a mixed transfer of services and property is involved". And according to [16] Para. 7.26: "(...) the price for licensing a patent [22] or know-how may include a payment for technical assistance services or centralised services performed for the licensee

or for managerial advice on the marketing of the goods produced under the licence (...)."

The word "know-how" appears several times in [16] (See Paras. 2.54, 2.97, 3.9, 3.11, 3.13, 5.20, 6.2, 6.3, 6.5, 6.18, 6.19, 6.27, 7.3, 7.26, 9.95.). A comparison of know-how definitions is reported in Table 1.

Table 1. Comparison of know-how definitions

EC regulation 2790/1999	EC regulation 2659/2000	OECD July 2010
vertical agreements and concerted practices	categories of research and development agreements	model tax convention [20]
art. 1 (f)	Art. 2.4.	Commentary to art. 12, par. 11.
<p>'know-how' means a package of non-patented practical information, resulting from experience and testing by the supplier, which is: secret (meaning that the know-how, as a body or in the precise configuration and assembly of its components, is not generally known or easily accessible), substantial (meaning that the know-how includes information which is indispensable to the buyer for the use, sale or resale of the contract goods or services) and identified (meaning that the know-how must be described in a sufficiently comprehensive manner). so as to make it possible to verify that it fulfills the criteria of secrecy and substantiality.</p>	<p>"research and development" means the acquisition of know-how relating to products or processes and the carrying out of theoretical analysis, systematic study or experimentation, including experimental production, technical testing of products or processes, the establishment of the necessary facilities and the obtaining of intellectual property rights for the results;</p>	<p>11. In classifying as royalties payments received as consideration for information concerning industrial, commercial or scientific experience, paragraph 2 is referring to the concept of "know-how". Various specialist bodies and authors have formulated definitions of know-how. The words "payments ... for information concerning industrial, commercial or scientific experience" are used in the context of the transfer of certain information that has not been patented and does not generally fall within other categories of intellectual property rights. It generally corresponds to undivulged information of an industrial, commercial or scientific nature arising from previous experience, which has practical application in the operation of an enterprise and from the disclosure of which an economic benefit can be derived. Since the definition relates to information concerning previous experience, the Article does not apply to payments for new information obtained as a result of performing services at the request of the payer.</p>

[16] give several definitions of intangible property, commercial intangibles, intellectual property, etc., which include know-how. The very fact that (overlapping and complementary) definitions are many, is an indirect confirm of the difficulty of "frameworking" the concept of intangible, in broad terms, and even more know-how, specifically.

According to [16] Para. 6.5: "Know-how and trade secrets are proprietary information or knowledge that assists or improves a commercial activity, but that is not registered for protection in the manner of a patent or trademark". And then there is a meaningful admission: "the term know-how is perhaps a less precise concept", followed by a cross-reference to the aforementioned Paragraph 11 of the Commentary on Article 12 of the OECD Model Tax Convention. And finally "know-how thus may include secret processes or formulae or other secret information concerning industrial, commercial or scientific experience that is not covered by patent". Any (even involuntary, if not zealously guarded as confidential) disclosure of knowhow or a trade secret, could substantially reduce their value. Know-how combines innate with long trained capacities and is concerned with confidentially or closely held information, in the form of technical data and information, unpatented inventions, formulae, designs, drawings, standards, procedures, code

books, specifications, processes and methods, together with information, knowledge, assistance, trade practices and secrets (see [23]), accumulated skills and experience, and represents a sort of "private intellectual property" which often trespasses to trade / industrial secrets, i.e. confidential information with useful applications and consequent economic value.

According to [24] "Know-how is practical knowledge of how to get something done, as opposed to «know-what» (facts), «know-why» (science), or «know-who» (networking). Know-how is often tacit knowledge, which means that it is difficult to transfer to another person by means of writing it down or verbalizing it. The opposite of tacit knowledge is explicit knowledge. In the context of industrial property (now generally viewed as intellectual property), know-how is a component in the transfer of unpatented proprietary technology in national and international environments, co-existing with or separate from other Intellectual Property rights such as patents, trademarks and copyright and is an economic asset".

These definitions give full evidence of the difficulty to identify know-how; economic estimates of know-how value are even more problematic, as a consequence of its slippery boundaries and of its uncertain economic impact on key performance indicators such as cumulated stock of

assets (book value) and/or differential economic or financial flows.

The real target of OECD guidelines is to identify a reasonable taxable base which incorporates the fair value of know-how; as it will be shown, since know-how is hardly separable from other related tangible and intangible factors, its value is typically embedded in a cumulated company's estimate and may be extrapolated only in differential terms (comparing the know-how company with an ideal competitor without know-how).

A comprehensive evaluation approach, referring to cost, income or market methodologies, may so synergistically interact with otherwise unfit OECD guidelines.

3. Protection, Sharing and Transfer of Know-how

Globalization brings to unprecedented and often uncontrollable movements of capitals, goods, people and their know-how, a common denominator which represents the "software" behind any "hardware" transfer, with a demiurgic impact that makes it a cornerstone of internationalized economic value and its consequential (local) taxation.

Know-how transactions are eased by their intrinsic and immaterially adaptive plasticity, especially if know-how has an IT codification, so being easily transferable and shareable (even via Web), with little if any time and space boundaries (everywhere, at any time). Whenever know-how is a nonrival good, it generates scalable, potentially unbound, synergistic and unselfish sharing, overcoming information asymmetries in a cooperative plainfield among different and unrelated taxpayers.

Know-how sharing is an intermediate solution between internal protection and sale (or, to a milder extent, licensing). Even if there may be sharing, pooling, co-licensing, networking, etc., taxation occurs on a standalone basis, where each taxpayer is properly segmented from others; intangible synergies matter as far as they generate additional taxable income on each taxpayer.

Albeit inside protection does not imply any explicit taxation, its synthetic description seems anyway useful, being the starting point for external exploitation and considering the positive fiscal impact of internal utilization (which should improve taxable margins) or dangers, even in terms of decreased taxable base, deriving from misappropriation or plagiarism.

Know-how represents knowledge protected with trade secrets, which provide economic advantage over competitors because of their confidentiality. Effective protection has to consider properly both palatability and vulnerability of know-how.

To the extent that information asymmetries and secrecy voluntarily soften with know-how and knowledge sharing, economically stimulated by increasingly synergistic value chains, inappropriate behaviours may accordingly intensify.

Know-how sharing, particularly fit for non rival goods, is often contractually regulated with R&D cost sharing agreements, traditionally TP sensitive.

Sharing implies partnering cooperation and according to the aforementioned Commission Regulation (EC) No

2659/2000, "Cooperation in research and development and in the exploitation of the results generally promotes technical and economic progress by increasing the dissemination of know-how between the parties and avoiding duplication of research and development work, by stimulating new advances through the exchange of complementary know-how, and by rationalizing the manufacture of the products or application of the processes arising out of the research and development".

Know-how transfer [25] presupposes its prior identifiability, often together with other intangibles and with top managers and their key knowledge. To the extent that know-how is properly codified with adequate (typically IT) procedures, it generates depersonalising knowledge management, which is valuable (even because of its lower dispersion risk), storable, even with outsourcing and cloud computing, and transferable.

Know-how dissemination [26] is often free (so being tax insensitive) and frequently based on know-who techniques, within social networks, blogs and chats, with a positive and potentially unlimited knowledge spillover, "virally" amplified by immaterial scalable devices, such as the libertarian Web.

The diffusion of know-how, which brings to loss of exclusivity, is also boosted by its scalability, either horizontal (amplifying its use within companies with a similar business purpose, intrinsically easier to be compared, even for arm's length purposes) or vertical, in functionally integrated value chains of contiguous and complementary firms. Know-how networking increasingly stands out as a major value driver and catalyser, pushed by stepping-up specialisation and the consequent necessity of strategic sharing of economies of scale and, in particular, of experience and knowledge.

Whenever know-how's (optimal) exploitation produces monopolistic rents - either with self utilization or with sharing or dealmaking of breakthrough "killing inventions"-economic marginality peaks, income explodes and accordingly does taxation. Being know-how not patented, it does not give way to an intellectual or technical monopoly that, according to [27] may hamper both information and innovation; intellectual property protection may make more economic harm than good, damaging value creation and eroding its consequential taxable base.

Know-how retention, based on several strategies such as knowledge management (and appropriate storing), brain drain, data protection, continuous upgrade against obsolescence, etc., stands out as a major forward-looking strategy [28] for value creation and preserving, with a consequential positive impact even for taxable income protection and smoothing.

Know-how transfer [29], either with one-shot divestiture or with (temporary) licensing, intrinsically stands out as the key phenomenon, at least for fiscal purposes. While know-how selling out might be a rather straightforward transaction, especially if there are no following up obligations for the seller, licensing is typically concerned with more sophisticated contracting, and consequent more articulated tax scenarios. A combination between licenses and sales is always possible, especially when a license contract contains a put & call option, according to which after a certain time span and at a stated price, the intangible may be purchased by the

licensee or sold by the licensor. This option has a deferred fiscal impact, which may be uneasy to assess and challenge, especially if the option structure is complex and depends on different contingent states of the world.

Contracting depends first on the underlying kind of know-how (technical; for production or logistics; related to marketing, human capital training and organization ...) but also on other characteristics (such as temporal limitation; sharing of experiences or development costs even with cross licensing; exclusivity and geographical or commodity limitations, number of parties involved in the transaction, scope of licensing, size of involved companies, etc.), with unlimited possible and flexible combinations, which make standardization a mission impossible, with severe consequences on uneasy arm's length comparisons.

Know-how licensing, going beyond in-house exclusive exploitation, may help leveraging business resources, allowing the licensor to enter into new markets, exploiting the licensee's resources.

Royalties on know-how represent a variable taxable income (unless there is a fixed minimum) for the licensor or, respectively, a deductible cost for the licensee, contractually foreseeing timely down-payments or progress payments and price adjustments (step ups and downs).

Know-how sharing, licensing or selling is represented by single - "micro" - transactions, whose impact on the economy (and tax revenues) of each country has to be contextualized considering also macro trends, such as globalization: one of its effects is the relocation of production from technology rich countries to low labour cost areas. The circumstance that know-how is kept within skilled countries or transferred to developing ones, with many intermediate options, is crucial for the understanding of where competitive advantage and added value are apportioned or relocated and consequently taxed.

The fundamental distinction, for TP purposes, is between sharing and/or transfer of know-how with external - third - counterparts (or even intercompany, but domestically) or within an international group, this being a particularly frequent case, especially for large MNEs.

4. Challenging Information Asymmetries: a Problematic Application of the Arm's Length Principle

When one party, typically represented by inside managers, is better informed (for example, about the prospects and intrinsic value of intangibles) than outside stakeholders, an information asymmetry arises, bringing to an imbalance of powers that is widely known and discounted by the counterpart, so damaging even the information monopolist, with a boomerang effect.

Information asymmetries are a cornerstone of economic and financial theory and have a somewhat paradoxical impact on intangibles, since in many cases they are needed and looked for, deterring imitation, as it happens with know-how and, to a lesser extent, with patents, whereas in other cases they cause communication problems that may damage brands and the external perception of the corporate image. Information asymmetries are so intrinsically embedded in intangible assets, whose value is

uneasy to account for and disclose. The prudential exclusion of home-grown intangibles from the balance sheet increases information asymmetries, hampering comparability.

Appraisal and diffusion of the company's market value, with particular reference to its somewhat mysterious intangible component, may so be misrepresented, causing market failures and misbehavior, in the form of adverse selection or moral hazard. Immediate expense of intangibles in opaque financial statements allows conveying externally little useful information on value.

In spite of its growing strategic importance, know-how may so easily conceal its added value, eroding its taxable base, for many complementary reasons, such as its intrinsic confidentiality or secrecy (sometimes desired for protective reasons but in other cases being an unwanted by-product of its slippery and ambiguous identification), uneasy segmentation and apportionment (if it is synergistically created by non rival independent taxpayers) and easiness of transfer, continuously muting - and hopefully improving - its chameleon nature.

The aforementioned difficulties to separate know-how from other assets are exacerbated in presence of bundled transactions, where know-how is scattered everywhere. This has an impact on the rigid segmentation imposed by application of the arm's length principle, which, according to [16] Para. 3.9., "should be applied on a transaction-by-transaction basis. However, there are often situations where separate transactions are so closely linked or continuous that they cannot be evaluated adequately on a separate basis. Examples may include (...) the licensing of manufacturing know-how and the supply of vital components to an associated manufacturer; it may be more reasonable to assess the arm's length terms for the two items together rather than individually (...)"

In other cases, package deals, according to [16] Para. 3.11 "may need to be evaluated separately. An MNE may package as a single transaction and establish a single price for a number of benefits such as licences for patents, know-how, and trademarks, the provision of technical and administrative services, and the lease of production facilities".

According to [16] Para. 6.18 "in some cases, intangible property will be bundled in a package contract including rights to patents, trademarks, trade secrets, and know-how. For example, an enterprise may grant a licence in respect of all the industrial and intellectual properties it owns. The parts of the package may need to be separately considered, so as to verify the arm's length character of the transfer (see paragraph 3.11). It also is important to take into account the value of services such as technical assistance ([20], Commentary to art. 12, Para. 11.3. and 11.6.) and training of employees that the developer may render in connection with the transfer. Similarly, benefits provided by the licensee to the licensor by way of improvements to products or processes may need to be taken into account. These services should be evaluated by applying the arm's length principle, taking into account the special considerations for services described in Chapter VII. It may be important in this respect to distinguish between the various means of making know-how available. Guidance on these issues is provided by paragraph 11-11.6 of the Commentary on Article 12 of the OECD Model Tax Convention".

The issue raised by OECD guidelines is serious: proper comparison of peculiar assets such as intangibles intrinsically need proper segmentation, up to decomposition and “atomization” to single elementary units, less complex and so more easily comparable; but segmentation is hardly compatible with the plastic nature of know-how and its natural tendency to be bundled with other “noisy” assets.

Another critical aspect concerning the concrete application of the arm’s length principle may derive from multiple possible combinations of sharing and transfer arrangements; according to [16], Para. 5.20: “Special circumstances would include details concerning any setoff transactions that have an effect on determining the arm’s length price (...) a set-off transaction may occur, for example, (...) where a royalty-free cross-licence agreement is concluded concerning the use of industrial property or technical know-how”. According to [16] Para. 6.3 “(...) reciprocal licensing (cross-licensing) is not uncommon, and there may be other more complicated arrangements as well”.

Since know-how is hardly mushrooming overnight, being instead the result of a typically long process of learning by doing, accumulating experience with trials and errors, its pluriannual formation must be taken into account, even for fiscal purposes. According to [16] Para. 6.27 “the amount, nature, and incidence of the costs incurred in developing or maintaining the intangible property might be examined (...)”.

Whereas reproduction cost methods are often used in company appraisals, even concerning the problematic estimate or their know-how, some correct caveats are contained again in [16], Para. 6.27 “(...) however, there is no necessary link between costs and value. In particular, the actual fair market value of intangible property is frequently not measurable in relation to the costs involved in developing and maintaining the property. One reason is that intangible property, such as patents and know-how, may be the result of long-lasting and expensive R&D. The actual size of R&D budgets depends on a variety of factors, including the policy of competitors or potential competitors, the expected profitability of the research activity, and the trend of profits; or considerations based on some relation to turnover, or an assessment of the yield from R&D activity in the past as a basis for fixing future expenditure levels. R&D budgets may be sought to be covered by product sales even though the products in question may not be a direct or even perhaps an indirect result of the R&D. Another reason is that intangible property may require ongoing R&D and quality control that may benefit a range of products”.

As outlined by Para. 6.13., “the arm’s length principle appears to be difficult to apply to controlled transactions involving intangible property because such property may have a special character complicating the search for comparables and in some cases making value difficult to determine at the time of the transaction”.

The “special character” of each intangible (with particular reference to know-how) may tentatively be compared with other arm’s length - uncontrolled- database of transactions, through an analytical functional analysis, which patiently investigates, step by step, the concrete characteristics and patterns of know-how, looking for (sufficiently meaningful) similarities, without which any

comparison would be ineffective or, even worse, surreptitiously misleading.

Analytical details may help challenging information asymmetries; as noted in Para. 6.20., “in applying the arm’s length principle to controlled transactions involving intangible property, some special factors relevant to comparability between the controlled and uncontrolled transactions should be considered”. Possible factors include:

- the expected benefits from the intangible property (possibly determined through a net present value calculation);
- any limitations on the geographic area in which rights may be exercised;
- export restrictions on goods produced by virtue of any rights transferred;
- the exclusive or non-exclusive character of any rights transferred;
- the capital investment (to construct new plants or to buy special machines), the start-up expenses and the development work required in the market;
- the possibility of sublicensing;
- the licensee’s distribution network;
- whether the licensee, has the right to participate in further developments of the property by the licensor.

Many intangibles can be considered only within an immaterial portfolio, for instance in the case of know-how associated to (and “contaminated” with ...) patents or goodwill - and their distinction or segmentation would be problematic and probably meaningless, so, again, masterminding atomistic identification and measurement, with troubled consequences on uneasy comparisons.

5. A Multinational Nexus of Intangible Contracts

Know-how and trade secrets frequently play a significant role in the commercial activities of Multinational Enterprise (MNE) groups.

Information asymmetries are typically stronger within MNEs, since the *Coasian* nexus of contracts [30] is (globally) internalized within the group, bypassing geographical borders but not the group’s perimeter. The internalization advantage connate in many MNEs, with self exploitation of R&D, know-how, etc., suffocates open-market transactions, out-of-the-group licensing or selling and market ownership.

Product market imperfections, including information asymmetries, may translate into opportunities for MNEs, better able than tinier local competitors to exploit competitive factors such as economies of scale and experience, product differentiation or managerial expertise (all backed by financial capabilities), which largely depend on know-how. Info asymmetries may have a big impact in transactions where one party is better informed, so creating an imbalance of power; market failures, such as information monopoly, moral hazard or adverse selection may arise within a principal-agent corporate governance context, with possible fiscal consequences, for instance distorting fair tax assessment or eroding the tax base.

To the extent that MNEs internalize their functions [31], protective need of formal contracting is much less stringent than with independent counterparts; evidence of economic added value (and consequent taxation) may so be concealed or neglected. The internalization of the exchange process within MNEs serves to bypass many imperfections in the market for know-how.

Within a multinational group, single worldwide economic entities are somewhat artificially decomposed into segmented taxpaying units, continuously looking for tax-minimizing arbitrages.

Information asymmetries, naturally embedded in trade or industrial secrets which typically are a core component of know-how, grow even stronger within MNEs, unless they have explicit (or implicit, surreptitiously harder to detect) incentives to divulge their inside knowledge, contracting out know-how transfer, licensing, sharing, etc. For brands or trademarks the context is different, since there is normally an intrinsic value in divulging their sale or license, even if particulars are typically not disclosed.

The growing necessity to properly record and assess related party transactions (see IAS 24), especially within quoted companies intrinsically supports arm's length comparisons.

If this stands out as the basic framework for the application of the arm's length principle, whose target is to disentangle incestuous relationships, forcing their confrontation with independent and fair market value transactions, it should not appear so surprising that any effective uncontrolled comparison naturally appears an uphill task. Treating related companies as if they were unrelated does not properly consider the peculiar *Coasian nexus of (inside) contracts* of MNEs, which may well be considered as a single worldwide economic unit, albeit their formal legal separateness is strenuously claimed by asymmetric stakeholders, such as tax authorities located in different countries. A Hamlet question also arises, making the issue even more difficult and controversial: how may ontologically unknown trade (or industrial) secrets be compared to "similar" uncontrolled transacted intangibles?

Oral, informal, tacit or written but incomplete contracts are all sources of information asymmetries and consequent difficult comparisons.

One of the effects of globalization is the relocation of production from the technology rich countries towards low labour cost countries.

Governments often welcome, even with tax breaks, MNEs, which are seen as labour hirers and technology transferors, but sometimes try to force MNEs to make their intellectual property public, in an effort to gain technology for local entrepreneurs, easing positive top-down spill over and trickle down; know-how is nevertheless the most secret component of intellectual property, and so is the most arduous intangible to be shared, especially beyond a fully voluntary and cooperative basis. MNEs typically transfer technology and know-how, even if they are always looking for hidden value and so behave as knowledge seekers, potentially everywhere, looking for cultural "biodiversities" which are increasingly wanted under the centripetal pressure of flattening (and flattering ...) globalization.

If this is a well known and rapidly evolving market framework, which pivots around TP sensitive MNEs, its impact on know-how comparability, through an arm's

length confrontation, is much less evident and clear cut, demanding careful analysis and patient processing of an intricate "puzzle".

6. The Difficulty to Estimate a Fair Value with Market Evaluations and International Accounting Principles

Accounting data are the basic source of information for both taxation (with the taxable base deriving from an adjusted juxtaposition of revenues and costs) and financial/economic valuation.

Traditional financial statements do not provide the relevant information for managers or investors to understand how their resources – many of which are intangible – create value in the future.

In spite of these well known challenges, effective accounting remains a core target for intangibles, being an indispensable starting point for value appraisal. Intangible value is hidden in the balance sheet by inadequate accounting, but not in the profit & loss account or in the cash flow statement, where its incremental contribution to profit is detectable. And cumulated value deriving also from intangibles can be "stored" in the balance sheet (or alternatively, it may be paid out to shareholders), through retained earnings, even if it is hard to specifically attribute it to know-how.

Financial reporting, connected to business planning and budgeting, may partially depart from prudential accounting rules and properly consider know-how and other intangibles.

The gap between market value and book value shows an increasing trend, even if the recession is pushing down to earth both absolute values and relative differentials; and this very difference is mostly attributable to valuable but not (adequately) accounted for intangibles [32]. If this is a well known dilemma for accountants, only partially softened by *ad hoc* accounting principles, such as IAS 38, its side effects embrace also taxation, whose fairness may be biased by incorrect evaluation, concerning in particular know-how.

It so seems unsurprising that know-how is, possibly, the most difficult asset to evaluate, due to its slippery and ambiguous nature, uneasy to be defined, as it has been shown in paragraph 1. Know-how is frequently known as a "ghost" asset, inasmuch as it is hardly accounted for in the balance sheet (being absorbed by sundry running costs in the income statement and hardly capitalized, according to the prudential guidelines of IAS/IFRS) or, when it is, being mostly recorded within other intangibles, such as patents and R&D, trademarks, goodwill, etc. It is so difficult, from accounting but also fiscal side, to properly detect and isolate know-how, this being the traditional first step in order to assess both economic and fiscal values.

Traditional financial statements do not provide the relevant information for managers or investors to understand how their resources - many of which are intangible - create value in the future. Intellectual capital statements are designed to bridge this gap by providing innovative information about how intellectual resources

create future value. Published intellectual capital statements are however rare documents [10,33].

IAS 38 (Para. 12.) defines an intangible asset as “an identifiable non-monetary asset without physical substance”. The definition requires an intangible asset to be identifiable to distinguish it from goodwill.

An asset is identifiable if it either: is separable, that is, is capable of being separated or divided from the entity and sold transferred, licensed, rented, or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

Intangible assets may be carried at a revalued amount (based on fair value) less any subsequent amortisation and impairment losses only if the fair value can be determined by reference to an active market (Para. 75.). Such active markets are, however, expected to be uncommon for intangible assets (Para. 78.). According to IFRS 13, Appendix A, an “active market” is “a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis”.

The classification of the main financial/market evaluation methods is consistent with international accounting principles; according to IFRS 13, Para.62, three widely used valuation techniques are:

- market approach - uses prices and other relevant information generated by market transactions involving identical or comparable (similar) assets, liabilities, or a group of assets and liabilities (e.g. a business);
- cost approach - reflects the amount that would be required currently to replace the service capacity of an asset (current replacement cost);
- income approach - converts future amounts (cash flows or income and expenses) to a single current (discounted) amount, reflecting current market expectations about those future amounts.

In some cases, a single valuation technique will be appropriate, whereas, in others, multiple valuation techniques will be appropriate (IFRS 13, Para. 63).

Recognition of self generated intangibles is forbidden and capitalization of incurred costs typically not admitted or strongly restricted; the prudential exclusion of home-grown intangibles from the balance sheet increases information asymmetries, hampering comparability.

Self generated know-how cannot be recorded, whereas purchased know-how is accountable, even if in transactions this classification is pretty unusual, with a preferential attribution to goodwill or other patented or copyrighted intangibles.

Extracting know-how from unbundled transactions, even from an accounting perspective, is typically a challenging task, especially if contracts are not properly investigated and duly segmented in their founding parts.

7. A Comprehensive Evaluation Approach

The link between standard market evaluation models for intangibles and TP methods is important because they are in practice likely to interact much more than expected.

Whereas financial / market models are potentially used in any transaction, even irrespectively of tax purposes, TP methods matter only within international intragroup negotiations; but since negotiations relevant for TP have to follow an arm’s length comparison with uncontrolled transactions, the latter take place outside any TP application perimeter and so are typically driven by financial / market models, not necessarily consistent with tax objectives.

In other words, transactions relevant for TP have to be compared to uncontrolled transactions, which are outside this (narrower) fiscal framework; a comparative analysis of fiscal and financial / market models so seems relevant, albeit uneasy to carry on, especially if concerning know-how. Accepted market good practices may conveniently be modelled in a new version of TP guidelines for intangibles.

Market valuations of intangibles, such as patents or trademarks, specifically address the peculiar appraisal problem [34,35,36], with *ad hoc* empirical or analytical methods; empirical methods are based on allegedly comparable market prices (hopefully referring to ... “uncontrolled” transactions) and value is estimated upon guideline transactions of comparable assets, whereas analytical methods have a sounder scientific background and a longer appraisal tradition, mainly referring to financial and/or economic flows estimates, deriving from virtuous exploitation of the intangible.

The main financial/market methods used for intangibles’ fair pricing, with an appropriate rating and ranking, refer to cost, income or market parameters; other more sophisticated methods, using “maybe” real options or Monte Carlo simulations, described in [37], Chapter 8, seem too advanced and somewhat arbitrary for tax comparisons.

The aforementioned methods may be summarized as follows:

1. cost-based methods, with an estimate of the costs to reproduce or replace the intangible from scratch, with functionally equivalent know-how; this method ignores both maintenance and the opportunity cost of time (reproducing an intangible may take years, whereas its missed use is due to generate a lack of income); cost to cost comparisons are difficult to imagine, especially if they are to be protracted over years; being internal matters, know-how costs also lack external, independent marketability; even if know-how strongly depends on long cumulated costs, its perspective value may hardly be inferred from past expenses and is also highly volatile and instable and cost differs from value.

2. income methods, based on the estimate of past and future economic benefits, assessing the ability of the intangible to produce licensing income (royalties, which etymologically derive from “sovereign rents”) or sale of the intangible; they may include:

- capitalization of historic profits deriving from the exploitation of the intangible;
- discounted cash flows (DCF), to estimate Net Present Value (NPV), duly incorporating risk adder factors in the discount rate, such as technology venture capital risk (see statistics from Venture Capital database or associations like EVCA, NVCA, BVCA, etc.);
- gross profit differential methods; they look at the difference in sales price between an “intangible

backed” product (branded, patented, with embedded know-how ...) versus a generic one; the profit differential is then forecast and discounted;

- excess or premium profit methods; similar to the gross profit, it is determined by capitalising the additional profits generated by the business over and above those generated by similar businesses, which do not have access to the intangible asset. Excess profits can be calculated by reference to a margin differential;
- relief from royalty method: based on the assumption that the owner of the intangible is "relieved" from paying a royalty to obtain its use, the method considers the hypothetical royalty that a potential user would be willing to pay, and discounts its projection; a comparable market range of “reasonable” royalties may derive from careful arm’s length benchmarking.

3. market-based methods, evaluating an intangible asset by comparing it with sales of comparable / similar assets (considering their nature; using functional analysis ...). Information asymmetries often conceal the real (mostly secret) nature of the allegedly comparable transaction. A market based variety may refer to the evaluation of the incremental equity, with indicators of the market surplus, given for instance by the Tobin Q [38], the ratio between the market value and replacement value of the same asset; a market value exceeding the replacement value may be a numerical consequence of valuable intangibles.

As seen above, cost based methods are not particularly fit for know-how, whereas market-based methods, so ... happily close to the Comparable Uncontrolled Price method - the first option within [16] TP choices - seem attractive but difficult to use. Analytical databases (see for instance www.ktmine.com; www.royaltysource.com; www.royaltyconnection.com; www.royaltystat.com), used also by tax authorities, make comparisons easier to find and provide international dealmaking examples and mighty industry standards of both royalty rates and of formal contractual clauses, which may differ from reality; their usefulness is, however, often biased by differences that are frequently large enough to make the comparison meaningless (appealing but ... appalling), especially if serious preliminary functional analysis is conducted.

Cash flow (DCF) methods are hardly applicable to assets such as know-how, which typically contributes to produce collective liquidity, difficult to segregate from other synergistic assets; furthermore, elusive intangibles, such as undeveloped know-how, may have a potential value which outweighs its actual contribution.

The purpose of the evaluation may change according to the context and the foreseen scenario, and may be targeted at the following different values:

- **Fair Market Value** - “The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market,” [39];
- **Investment Value** - The value the intangible would be worth, considering the specific buyer’s intended use (and so with use-value higher than exchange-value);
- **Intrinsic Value** - The value that an investor considers, on the basis of an evaluation of available facts, to be the “true” or “real” value that will become the market value when other investors reach the same conclusion [40].

- **Liquidation Value** - The company may pass from a going concern to a break-up context, this being a particularly conservative scenario for intangibles, especially if not autonomously tradable.

Whereas fair market value is fully consistent with TP arm’s length principles, other scenarios may seem less impartial, especially if we consider the investment value, strategically biased and typically not “uncontrolled”.

Chapter VI of [16] confirms to a large extent that all five TP recognised methods may in theory apply to transactions involving intangibles, depending on the facts and circumstances of the case. At the same time, it also repeatedly points to the difficulties that arise in their application, due in particular to comparability issues where valuable unique intangibles are involved [41].

An analysis of the main TP methods, described in Chapter II of [16], goes far beyond the scope of this paper; some preliminary link between TP methods and financial / market techniques may, however, be investigated.

The Comparable Uncontrolled Price (CUP) method confronts the price charged in a TP sensitive controlled transaction to the price of a comparable uncontrolled transaction in comparable circumstances ([16], Para. 2.13.); this methodology, consistent with market-based transactions, faces severe limitations within the intangible market, where external comparability, for many aforementioned reasons, is often strongly biased or unfeasible.

According to Para. 6.23 “in establishing arm’s length pricing in the case of a sale or license of intangible property, it is possible to use the CUP method where the same owner has transferred or licensed comparable intangible property under comparable circumstances to independent enterprises”. In practice, this may be considered a wishful thinking exercise, nice but unlikely. Consider also [16] Para. 6.28 , according to which “Intangible property may have a special character complicating the search for comparables and in some cases making value difficult to determine at the time of a controlled transaction involving the property”.

According to the Resale Price Method (RPM), goods are regularly offered by a seller or purchased by a retailer to/from unrelated parties at a standard "list" price less a fixed discount. Testing is by comparison of the discount percentages (see also [16] 2.14-2.31, 26). According to Para. 6.23., “If the associated enterprise sub-licenses the property to independent parties, it may also be possible to use some form of the resale price method to analyse the terms of the controlled transaction”. And according to Para. 6.24 “in the sale of goods incorporating intangible property, it may also be possible to use the CUP or resale price method following the principles in Chapter II”. And also: “When marketing intangibles (e.g. a trademark) are involved, the analysis of comparability should consider the value added by the trademark, taking into account consumer acceptability, geographical significance, market shares, sales volume, and other relevant factors. When trade intangibles are involved, the analysis of comparability should moreover consider the value attributable to such intangibles (patent protected or otherwise exclusive intangibles) and the importance of the ongoing R&D functions”.

The transactional profit split method is an alternative to one-sided methods, and first identifies the “combined”

profits to be split for the associated enterprises from the controlled transactions in which the associated enterprises are engaged, for instance along the know-how value chains. It then splits those combined profits between the associated enterprises (so recognizing also the value added by licensees) on an economically valid basis that approximates the division of profits that would have been anticipated and reflected in an agreement made at arm's length ([16], Para. 2.108). According to Para. 6.26., "in cases involving highly valuable intangible property (...) the profit split method may be relevant although there may be practical problems in its application" especially in the presence of nonroutine functions.

Other TP methods (cost plus; transactional net margin) are not considered suitable for valuable intangibles. [16] flexible approach bypasses the hierarchical "best method rule", proposing a set of alternative methods. A synthesis of values, converging to accepted fairness, remains anyway a difficult target.

Know-how may anyway hardly be estimated on a single basis, being mostly transacted within intangible package deals, living in a symbiotic osmosis, but bundled transactions, with their chameleon focus and perimeter, are harder to perceive, segment and compare.

Functional analysis may well represent a bridge between OECD guidelines and financial / market models, getting inside the business model of the company and estimating its strategic value drivers.

Know-how has also to be appraised and compared only after checking for the subsistence of a (full) going concern scenario, without which its value rapidly tends to zero, being characterized by little if any residual (break up) value, due also to its intrinsic features, including limited autonomous marketability.

Figure 1 contains a comprehensive representation of know-how valuation sources, linked to the value chains due to form its taxable base.

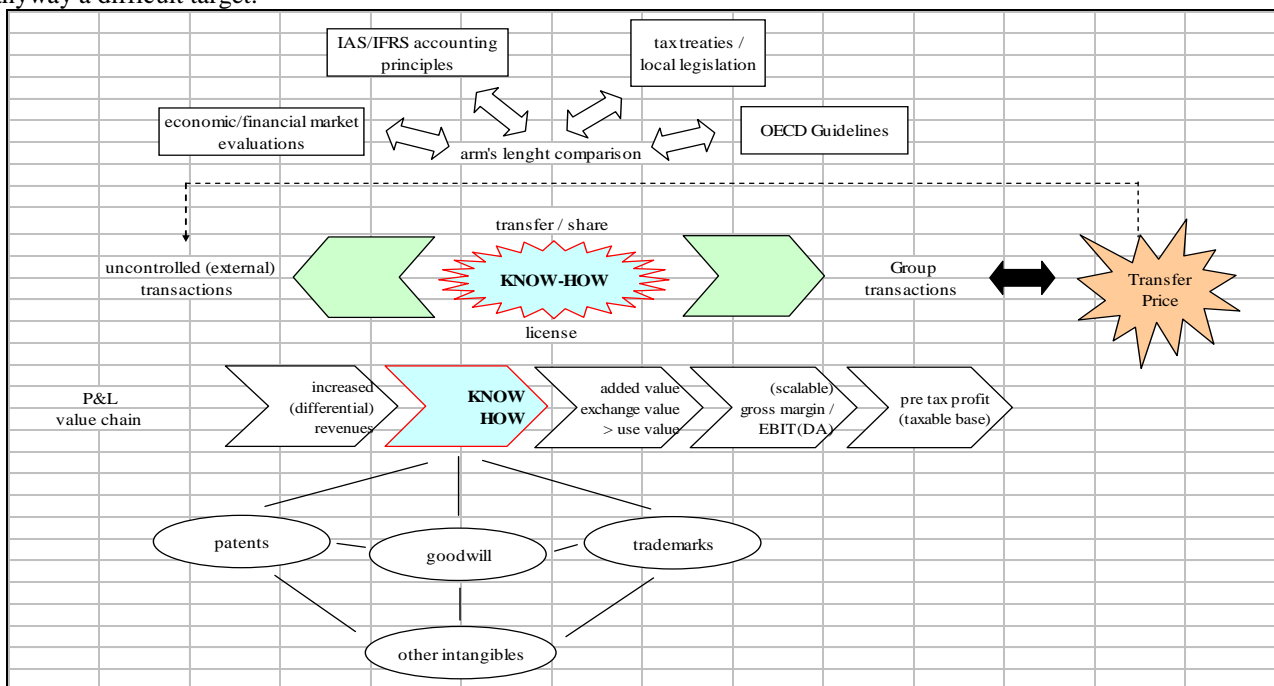


Figure 1. Linking know-how with its value chain and external valuation sources

8. Results and Discussion

The most controversial issue emerging from this paper is that intangibles, especially if exclusive like unique patents or peculiar as know-how, are difficult to compare.

To the extent that intangibles are unique, they cannot simultaneously be universal, this being a paradox difficult to challenge with arm's length TP comparisons. Identification of proper comparables is also hindered by the intrinsically slippery perimeter of overlapping commodity sectors or of heterogeneous package deals, where know-how is often surreptitiously embedded and hidden. This difficult comparison is particularly true with know-how, which is typically case specific, and whose transactions are mostly "company confidential" and so, not of public domain, due to a natural reluctance to inform competitors.

This paper evidences that whenever know-how cannot be autonomously identified and defined, as it happens in most cases, it cannot be autonomously recorded in the

balance sheet and also its arm's length comparison becomes a mission impossible.

Wrong and illusionary comparables have a distorting impact on TP and bad data may potentially be manipulated or misused. And extracting know-how from so common bundled transactions may look like searching for gold in a river with potholes.

Taxation also changes across the volatile life cycle of know-how (potentially unbounded, but in practice highly ephemeral), and tax planning becomes unfeasible.

Further efforts are needed in order to improve the quality and comparability of data bases, rulings, and advance price agreements, disentangling the intangibles' value chain and softening their natural confidentiality. An innovation-friendly tax system, with a forward looking approach, eventually brings to a natural increase in taxable income.

The optimal target is to disarticulate the value chain that rotates around know-how, attributing its belonging pieces to single taxpayers, so identifying a fair taxable

base within each country. Fair taxation of know-how and its embedded creativity, avoiding both “creative elusion” and arbitrary taxation, stands out as a key - actual and especially perspective - challenging target.

Multiple evaluation approaches, combining OECD guidelines with economic and financial models, may be needed due to the heterogeneous nature of specific intangibles, such as know-how, as suggested by [42], Para. C.39.

Design and implementation of effective taxation is extremely difficult and information asymmetries, connate with (secret) know-how, behave like a double edged sword, somewhat shielding companies from taxation but at the same time making fiscal compliance harder and litigation likelier. Recognition and disclosure of know-how remains an uphill task.

This paper shows that since segmentation of know-how is problematic, a possible and feasible solution may be that of concentrating on the overall taxable base, where know-how is embedded with its incremental utility, pushing up differential economic and financial margins; reference to cost, income or market approaches, traditionally used with the evaluation of intangibles, may well complement sophisticated OECD methods, which fit a general framework of valuation but hardly adapt to know-how specificity.

9. Conclusions

Even for what concerns know-how and related knowledge management [43], tax issues are a natural corollary and a by-product of other preliminary aspects, concerned with the ontological, practical, legal, technical and economic nature of know-how.

Both multinationals and tax regulators have converging interest in reducing litigation about TP issues, especially if they regard nonroutine assets such as know-how, within increasingly specific industries. Real economic substance of economic transactions, not always backed by proper contracting, is increasingly important, and consequently prices do not have to be arbitrary, capricious or unreasonable; pricing calculations so need to be adequately supported, compliant, acceptable, reliable and verifiable.

The firm as a legal entity and single taxpayer is often challenged by know-how versatile plasticity, within a nexus of valuable (and so taxable) contracts, which may fatally prove hardly identifiable and attributable.

The temporal dimension of know-how and its attitude to impact on economic (taxable) margins also needs proper analysis, especially if know-how is embedded in potential goodwill and it incorporates the estimated value of growth assets: in such a case, even the impact of taxation is mostly deferred.

Whenever know-how cannot be properly identified and consequently valued, it residually falls down in the goodwill cauldron, considered by accountants only if transacted with a third party and so being sensitive to arm’s length comparisons.

The growing importance of know-how, within the uprising knowledge economy trend, makes the issue increasingly crucial, demanding for further and deeper interdisciplinary research.

The intangible nature of know-how, which makes it easy to transfer, combine and share, is intrinsically hostile to a rigid system of taxation, where asset identification within a single legal entity is a prerequisite for conventional apportioning of value and consequent tax assessment.

The orthodoxy of OECD guidelines is continuously challenged by disguising intangibles and proves increasingly inadequate to contrast the phenomenon of value displacement and consequent tax erosion.

While exact identification of know-how is seldom possible, its impact on comprehensive economic margins, to be attributed to the “right” taxpayer, seems a likelier goal, and this may represent a further clue for future research, targeting more realistic TP guidelines.

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