

Economic Value & the Tautology within the RBV of the Firm

A critical review of the resource-based and related
literature

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Abstract

The article revisits the tautology argument in the RBV. We find that no tautology exists if the temporal logic of production preceding consumption is adopted. Following this we review alternative theories of economic value and evaluate their ability to establish resource value independently of obtaining competitive advantage. The review finds that, when adopting and integrating a labour theory, the RBV's fundamental puzzle of predicting competitive advantage is resolved. The article closes by re-evaluating the current understanding of the RBV's status and by proposing directions for future research.

Introduction

Soon after the seminal articles by Wernerfelt (1984) and Prahalad and Hamel (1990), the RVB (resource-based view) quickly gained momentum in an attempt to explain the differences between firms (e.g. Lippman and Rumelt, 1982; Rumelt, 1987; Conner, 1991). Proponents of the RBV argue that competitive advantage on the grounds of these differences is explained by heterogeneous and idiosyncratic resource endowments, as well as the firm-specific combination of resources and competences (e.g. Dierickx and Cool, 1989; Mahoney and Pandian, 1992; Teece et al., 1997; Barney and Clark, 2007).

Priem and Butler (2001b) pointed out that the RBV's core proposition of resources creating competitive advantage contains a tautology whereby, as will be seen in the following section, *ex ante* resource value and *ex post* competitive advantage cannot be explained independently of each other. The authors demonstrated that the tautology is a problematic aspect of the RBV's concept because it prevents the prediction of competitive advantage. Since then, and in particular following Priem and Butler's (2001a) argument, there has been a consensus in the literature that the RBV is useful as a reflective tool, but is not a theory.

In an attempt to advance the RBV conceptually, Toms (2010) in particular argued that the RBV is in need of a theory that explains resource value. We therefore review the resource-based and related literature critically, and evaluate two alternative theories of economic value, namely subjective utility theory as well as a labour theory (of which there are several versions), for their

ability to address the predictability issue within the RBV. The findings of this review include that (i) subjective utility, while containing its own, unrelated, tautology, is incompatible with the RBV's core proposition; (ii) the version of the labour theory we apply establishes resource value independently of competitive advantage, i.e. ex ante resource value can be explained without relying on competitive advantage materialising ex post; and (iii) the RBV currently does not acknowledge that part of the product or service value is created within the production process.

The discussion begins by critiquing the original tautology argument.

The tautology within the RBV

In principle, a tautology exists where an argument is of bi-directional nature, that is, where a Y cannot be explained without an X, and this X cannot be explained without the Y. By drawing on an argument proposed by Popper (1959), Priem and Butler (2001b) were the first to point towards the “Tautology in the Resource-Based View ...”. They argue that the tautology arises because the RBV neither defines resource value independently, nor is this value ‘determinable within the theory-like statement’ (ibid, p.63) which Barney’s (1991) original RBV logic makes. This is so because of the agreement between the authors that economic value is determined outside of the firm and, therefore, outside of the RBV. Priem and Butler (2001b, p.62) proceed to express the tautology mathematically as:

$$Prob(CA) \Leftrightarrow f^+(v_{ed} \cap r) \tag{1}$$

where $Prob(CA)$ means ‘probability of competitive advantage’, v_{ed} represents ‘externally determined value’, r ‘rarity’, and \cap the logical notation of ‘and’; f^+ would be read as ‘positive function of’, which means that both sides of eq. (1) are positively correlated (Priem and Butler use an = sign, but to make the tautology reasoning explicit the \Leftrightarrow notation is used here).

Though the mathematical expression seems clear, the textual formulation of the problem is somewhat ambiguous in terms of explicating the tautology clearly. On p.58 Priem and Butler (2001b) write:

“...if valuable resources are defined as those increasing efficiency and/or effectiveness, and competitive advantage is defined as achieving increases in efficiency and/or effectiveness, a tautology exists.”

More straight forwardly, Sanchez (2008, p.21) expresses the issue as (emphasis added):

“...the RBV’s core proposition commonly asserts that resources *identified ex post* as being strategically valuable ... *were ipso facto* the ex ante strategically valuable resources responsible for the firm’s or firms’ *future* success.”

The time lag between resource deployment ex ante (at present) and the observation of a competitive advantage ex post (in future) is a crucially important factor in addressing the RBV’s tautological logic. This is so because production occurs ahead of consumption in reality—and Sanchez acknowledges this reality by distinguishing ex ante from ex post. As a result of this acknowledgement a tautology can only emerge following formal abstraction beyond

the point where time no longer plays a part; for a discussion of temporality in economics see Freeman (2010) and Kliman (2012). Once this abstraction has been done, it is clear that, at the same moment in time, resource value simply determines competitive advantage, while competitive advantage determines resource value—hence the tautology would have been ‘established’. Consequently, it can be argued that the tautology was added to the RBV as the result of formal abstraction beyond a meaningful point in light of economic reality.

In contrast, and especially because a temporal process is at play, the correct line of reasoning would be: *ex ante resource value* \rightarrow *ex post success*, or simply $X \rightarrow Y$, i.e. *X determines Y in time*, but not vice versa. This holds, unless one either physically travels back in time to change the past or one suspends with time entirely, which we do not intend. Therefore, temporal logic reflects a case of ‘what’s done is done’ by the time a product or service is consumed—and so firm success cannot retrospectively determine resource value. Consequently, the temporality involved modifies the issue at stake such that:

- (a) *ex ante resource value* and its measurement, as well as the process by which resource value determines *ex post success*, are currently unexplained within the resource-based literature (more detail below);
- (b) on the basis that formal abstraction does not proceed to the point at which time no longer plays a part, we argue that the current inability to explain (a) provides insufficient grounds for concluding the RBV

contains a tautology. This is so because attributing ex post success to stem from ex ante resource value merely reflects the realisation that the causality in the RBV's core proposition is of temporal nature—and thus does not constitute a tautology. However, as will be seen later on, this realisation on its own is insufficient to explain competitive advantage.

In their response to Priem and Butler (2001b), Peteraf and Barney (2003) had stumbled across our point (b), but without being aware they had done so and without being aware of the point's significance. Specifically, Peteraf and Barney wrote on p.320:

“...critical resources ... are clearly the source of both value and rent differentials, the question arises as to whether this makes RBT a tautological theory. To this, we have several responses. First, critical resources are not defined in terms of value differentials or rents. Instead, they are those resources and capabilities that have a marked positive effect on the costs or benefits associated with an enterprise's product.”

Not being ‘defined in terms of value differentials or rents’, but still determining competitive advantage, has been termed the ‘value conundrum’ of the RBV and is critiqued at length in Sanchez (2008); our point (a) is consistent with this critique. However, a sympathetic reading of Peteraf and Barney's (2003) statement reveals an interpretation according to which, temporally, critical resources determine competitive advantage, but competitive advantage does not determine resource value. This can be expressed mathemati-

cally, as:

$$Prob(v_{ed}) \Leftarrow f^+(R_{crit}) \tag{2}$$

where R_{crit} means critical resources. It is noteworthy that the need for uni-directional thinking in line with the ex ante \rightarrow ex post temporality is explicitly acknowledged here. In other words, as illustrated by the \Leftarrow sign, it is acknowledged that R_{crit} determines $Prob(v_{ed})$, but $Prob(v_{ed})$ does *not* determine R_{crit} . However, the refined logic does not explain how and why, exactly, critical resources determine competitive advantage and so the issue raised in point (a), above, remains to be addressed.

Before addressing (a), it is beneficial to highlight a different notion of what constitutes a tautology, also available in the resource-based literature. Specifically, Sithole and Rugimbana (2014, p.646) interpret Lockett et al. (2009) to have argued that ‘... the RBT is tautological if the firm’s possession of unique capabilities cannot be ascertained independently of their description’. In other words, the RBV contains a tautology because *having capabilities = description of what capabilities are*. So in essence Sithole and Rugimbana (2014) argue that the tautology in the RBV arises because an X (i.e. having capabilities) cannot be ascertained without the description (or explanation) of what this X is. We do not subscribe to this notion because the tautology discussion above is based on the understanding that X constitutes the description of Y, and vice versa.

Aside from the question of whether or not a tautology exists, Toms (2006, p.2), and again in 2010 (p.986), points out that ‘... the RBV has the potential

to explain sustained competitive advantage' (defined as sustainable abnormal returns in Peteraf, 1993), but to do so 'needs a theory of value'. The RBV has thus far failed to provide such a theory, which means that the view's usefulness is currently limited to that of a reflective tool. As is shown next, the foundations based on which to resolve the prediction issue have already been laid; in essence, the next section addresses our point (a), above.

Economic value and the RBV

The foremost discussion of the relationship between the RBV and economic value is available in Peteraf and Barney (2003, p.314, emphasis in original):

“The *Economic Value* created by an enterprise . . . is the difference between the perceived benefits gained by the purchasers of the good and the economic cost to the enterprise.”

In this form, the definition is limited and incorrect because it relates two incommensurable factors: (i) 'the perceived benefits gained by the purchaser', which is a qualitative concept rooted in the subjective needs and wants of purchasers; and (ii) the quantitative concept of 'economic costs to the enterprise'. Therefore, the correct way of expressing (i) is 'the perceived benefits to the purchaser find quantitative expression in the price this purchaser is willing to pay'.

But even after the correction is made, Peteraf and Barney's concept remains limited to 'the customer is willing to pay' a certain price and 'the economic costs to the enterprise' (ibid, also p.314)—or, simply, *value = profit*.

This is the rather narrow shareholder value perspective, rooted in Penrose's (1959) support for Austrian value as subjective marginal utility; Connell (2007) confirmed that she indeed subscribed to this notion which thus underpins the RBV. We discuss Austrian value in more detail below.

However, the Austrian notion does not support the narrow perspective of value = profit; instead, Austrians hold that value underpins price as profit plus costs. Nevertheless, the notion of value equalling profit led Peteraf and Barney (2003, p.314) to define competitive advantage as:

“An enterprise has a Competitive Advantage if it is able to create more economic value than the marginal (breakeven) competitor in its product market.”

Though this definition might hold merit by itself, in our view it is not helpful when addressing the issues reviewed above because any firm realising a profit would enjoy a competitive advantage by this definition. Therefore, a better understanding of economic value than Peteraf and Barney's (ibid) is required for the RBV, which we now attempt to provide. We begin by discussing Austrian value, or subjective marginal utility, because it currently underpins the RBV. Menger (1871) and Jevons (1871) had independently of each other proposed versions of the concept¹ based on Gossen's (1854) earlier work; later Böhm-Bawerk (1896) and other economists of Austrian origin developed this concept further.

Subjective marginal utility, critiqued for example in Behrens (1979) and Zimmermann (1954) , argues that value is only created as a result of two parties agreeing to make a sale outside the realm of production; as discussed

above, this is a supposition to which Priem and Butler (2001b) and Peteraf and Barney (2003) subscribe. In addition, under the Austrian notion, value is considered to cease to exist after the sale is made and so the products or services purchased—i.e. the firm’s resources—are simply employed in production. Thus, with value being purely an external affair, production is considered as nothing more than a physical transformation process (see also Behrens, 1979).

In our view, these suppositions are irreconcilable with the RBV’s core proposition that value as the basis of competitive advantage is determined within the firm’s production process. Indeed, evidence has been accumulating (e.g. Barney and Arian, 2001; O’Regan et al., 2011; Srivastava, 2005) which suggests that firm-specific factors of production as the source of competitive advantage outweigh factors of exchange. In addition, there are two more reasons why we do not draw on Austrian value for the remainder of this article. The first is rooted in the very nature of the concept of subjective marginal utility. In essence it is asserted that two general principles hold true, namely:

- (i) as is well established, the consumption of extra units yields a diminishing usefulness, or diminishing satisfaction—although Stackelberg (1943, p.77), a supporter of marginal utility theory, was forced to concede that ‘there are actually no objective processes from which . . . [diminishing satisfaction] could be deduced’ (we are not aware of a recent discussion addressing the 1943 concession); and

(ii) satisfaction can only be measured in terms of the relative usefulness alternative product or service offerings would provide (Pareto, 1906). Relative utility does not, however, support the quest for explaining resource value *ex ante*—because relative usefulness is determined externally, i.e. *ex post* at the point of sale and thus outside of the realm of the RBV.

The second reason is because Austrian thinking on value contains its own tautology, which differs from the one in the RBV. Specifically, according to Menger (1871), and as critiqued by Behrens (1979), the marginal price as quantified marginal utility materialises between the last buyer willing to pay an offer price—last buyer included—, and the first buyer not willing to pay the offer price—first buyer excluded. However, even if the point between last inclusion and first exclusion materialises only as a tendency, Menger’s logic leads to the bi-directional ‘chicken and the egg problem’ identified by Zimmermann (1954, p.131), who argues that Menger’s (1871) logic ‘exhausts itself in syntax and merely contains a tautology’. Zimmermann’s conclusion was later confirmed by Robinson (1963) and Matrick (1977) and arises as follows. Menger (1871) holds that the marginal price is established by the buyer’s decision to be included in or excluded from the sale—but making these decisions is only possible *after* the marginal price has been established. This means that, with Menger’s logic, the decisions of inclusion and exclusion require the marginal price and, at the same time, this price requires the decisions. Thus, tautologically, neither the decisions nor the marginal price are explained independently of each other, with neo-classical theory (which

draws on Austrian value) ignoring rather than responding to the issue (Tinker, 1980).

Despite this situation it might be argued that marginal utility holds greater explanatory power than its major rival, the labour theory of value, historically advanced by Smith (1776) and Ricardo (1817). This is so because, allegedly, the labour theory cannot explain certain scenarios, discussed in some detail below, which are mainly associated with the relationship between labour value and price. This, in conjunction with the tautologies in the RBV and the marginal utility theory, might have been the reason why Makadok and Coff (2002) have argued that it is sufficient for the RBV to work with value capture while not requiring a theory of value creation.

In contrast, Grahovac and Miller (2009) conclude that extant approaches, with their apparent lack of conceptual clarity of what economic value is, are unlikely to bring success. Similarly, Kraaijenbrink et al. (2010, p.349) call for a shift away from the ‘inappropriately narrow neoclassical economic rationality’. But most explicitly, Toms (2006) calls for the RBV to be based on a theory of value, reinforcing his point in Toms (2010, p.647) by explicitly stating that

“[t]he RBV can become a coherent theory of firm behaviour, if it adopts and can integrate the labour theory of value . . . ”

The reason for this call is that, in Toms’ view, systematic variations of firm profit, as well as systematic long-term sales above the cost of inputs, cannot be explained without adopting and integrating a labour theory. This is the

case because labour power, i.e. a person's capacity to work, is measured in labour time and is subsequently transferred to the product or service as the result of physical and mental effort (e.g. Marx, 2005). Consequently, new value is created by the firm. However, this transfer, which occurs with different intensities across producers, is not immediately obvious and a degree of abstract thinking is therefore required.²

Nevertheless, we demonstrate later on how the questions of resource value and predictability can be resolved. But for now it is necessary to address common misconceptions about the labour theory in terms of its ability to explain the relationship between labour value and price. This is relevant and indeed required because of the RBV's strong economic roots, paired with the view's attempt to explain why some firms are better off than rivals. The labour theory's ability to succeed in this context would be threatened if explanatory difficulties were involved.

A brief defence of the labour theory of value

Three points of criticism should be addressed in the context of this review. Firstly, Böhm-Bawerk (1896, pp.69ff) in particular believed he had identified a fundamental flaw in Marx's labour theory, by pointing out that gifts of nature, such as a waterfall, uncultivated land, or an uncut forest, may exchange for a price. Specifically, he denied Marx (2003, ch.38, pp.660f)³ the conclusion that

“[t]he waterfall, like land in general, and like any natural force, has no value because it does not represent any materialised labour . . . price [in these cases] is nothing more than . . . capitalised rent.”

In contrast, Böhm-Bawerk argued that gifts of nature, though not reproducible by man and not created by nature for the purpose of sale, are commodities like every other exchangeable thing. Therefore, Marx was, allegedly, in error when he excluded these gifts from his central point that labour time is the common factor across commodities. However, Marx (2005) is explicit in his view, whereby commodities are, and only are, products of human labour specifically produced for the purpose of sale.⁴ Therefore, this part of the debate is rooted in irreconcilable methodological differences between Marx and Böhm-Bawerk, but each author is entitled to his view.

Secondly, it is commonly held that the labour theory fails to explain the ‘water-diamond paradox’. This is a phenomenon where water, despite being far more useful for survival, commands a lower price. The critique levied against the labour theory is as follows. Even if it is accepted that the amount of labour time expended finds equivalent monetary expression in the form of price (with quantity of labour time being proportional to price); even if it is accepted that the amount of labour time required is generally lower for water than for diamonds, which accounts for lower water prices; there could be cases where an individual finds diamonds in the back garden. The labour theory would then hold (because price is proportional to the quantity of labour time) that the price of these diamonds falls below that of water, but this would not be so in reality. Hence the labour theory allegedly lacks explanatory power. However, this criticism is rooted in a notion of individual labour value, but Marx is primarily concerned with average labour value in society (although he also addresses questions of individual value). Marx (2005, ch.1, p.54):

“... the magnitude of the value of any article is ... the labour time socially necessary for its production”

where ‘socially necessary’ means *under average conditions* (this concept of value differs from the Austrian notion of subjective utility; the relationship between utility and labour value will be discussed in the following section). Then, on p.54f, Marx explicitly states (emphasis added):

“[d]iamonds are of very rare occurrence on the earth’s surface, and hence their discovery costs, *on an average*, a great deal of labour time.”

Thus, even if an individual was to find diamonds in the back garden, the average conditions under which diamonds are brought to market would change very little. Consequently, the price of diamonds in the economy, as the monetary expression of labour time expended, would remain largely unaffected by the individual’s find.⁵

Thirdly, there is the allegation that the labour theory explains price increases or decreases solely as the result of changing supply conditions, but cannot explain price changes due to changing demand.⁶ However, as discussed in Marx (2003, ch.10), market prices rising above labour value indicates a situation where more labour time is demanded than has been supplied; conversely, market prices falling below labour value indicates a situation where the labour time that has been supplied exceeds the labour time demanded. Where supply and demand function normally (i.e. where monopolies, crises, natural disasters and wars are excluded), production will easily adjust to changing demand. However, because this point of criticism deals

with issues external to the firm, it is not directly relevant for the remainder of the discussion and is only included for completeness.

Following the defence of Marx's labour theory, attention now turns to the remaining task, that is, addressing the questions of resource value and predictability.

Linking the RBV with the labour theory of value

A notable attempt to adopt and integrate the labour theory was made by Bowman and Ambrosini (2000) who were the first to link Marx's (e.g. 2005; 2003) categories of *use value* (the qualitative characteristics of a product or service) and *exchange value* (the quantitative relation between exchangeable goods) with the RBV.

However, besides not specifically focussing on resolving the predictability issue, Bowman and Ambrosini's (2000) article contains a conflation of qualitative and quantitative factors. They write on p.1: 'the source of new use values is the labour performed by organizational members, and that firm profits can be attributed to this labour'. But as discussed in Marx (2005), use value actually arises from concrete labour (the type of work), while exchange value arises from abstract labour (the amount of work), measured by the socially necessary labour time discussed earlier. This conflation makes it difficult to derive a basis for facilitating predictions.

The conflation was addressed in Bowman and Toms (2010) who, by systematically following Marx's (e.g. 2005) distinction of concrete and abstract labour, have explicated two important consistencies, as follows. Firstly,

Marx's (2003) notion of constant capital (machines, plant, equipment, materials) and variable capital (i.e. people)—at which he arrives on the basis of socially necessary labour time—is consistent with the RBV's notion of tangible and intangible resources. Secondly, constant and variable capital are consistent with contemporary accounting principles, which enables the measurement of Marx's (2003) propositions. Though the second consistency is certainly essential when undertaking empirical work, the remainder of this article focuses on exploiting the first consistency.

Dassler (2015) demonstrates how Marx's labour theory can be applied to the RBV to address the issue of non-predictability. Specifically, as already discussed, concrete labour creates use value, or utility for short. In other words, concrete labour creates the type of products or services such as banking and finance, cars or farm produce. But there is one difficulty. Hamel and Prahalad (1994) have shown that customers frequently struggle to express whether they would judge favourably as utility the physical characteristics of commodities that do not yet exist. In line with this Marx (2005, p.55) writes:

“... nothing can have [labour] value, without being an object of utility. If the thing is useless, so is the labour contained in it; the labour does not count as labour, and therefore creates no value.”

It is worth noting that utility can exist without labour value, but labour value *cannot* exist without utility. Freeman and Kliman (2011) point out in this context that utility is well established for existing products or services. In other words, utility has already been established ahead of production, which

enables the prolonged large-scale production of new quantities. This means that the hours expended in production are elevated to the status of socially necessary labour time, but this elevation does not create or alter production hours and utility in retrospect.

In contrast, establishing new utility can be a risky undertaking, but the risks involved are usually manageable in practice. This is so because new uses are typically already latent in existing products or services, such as TV being latent in cinema, the mobile phone in the fixed line telephone, or cars in horse-drawn carriages. In addition, most variations of utility emerge as a gradual process, such as small improvements to existing cars from one year to the next;⁷ or future utility is established as a result of value co-creation, which has recently received attention in the mainstream literature (e.g. O’Cass and Ngo, 2011).

It is clear from the discussion so far that utility is determined externally, which is consistent with the agreement between Priem and Butler (2001b) and Barney (1991), as discussed above. However, Dassler (2015) also shows that utility considerations are of lesser importance from Marx’s perspective and indeed from the RBV perspective itself—because considering utility alone does not facilitate a better understanding of the inner workings of the RBV. Thus, attention now turns to value as socially necessary labour time and its significance for the RBV.

The line of argument used establishes ex ante resource value (i.e. socially necessary labour time, not utility) *independently* of market conditions (e.g. bargaining power, changing demand, transaction costs, etc), as follows. Firm resources are a heterogeneous and idiosyncratic blend of non-human inputs

and human inputs. The crux of this argument is that these inputs *contain* socially necessary labour time, and therefore value, *at the start* of production. This reflects the temporality of production preceding consumption in time (a further consistency between Marx and the RBV, and in particular the *ex ante* vs. *ex post* distinction discussed earlier). Consequently, the labour value contained in non-human inputs (i.e. the labour time contained in the outputs from preceding production processes) as well as in employees' ability to work (as the labour time contained in the means of subsistence—food, drink, housing, clothing and the satisfaction of social needs) counts as resource value.

Because each firm has its idiosyncratic resource endowment it also expends (i.e. transfers from the inputs) an idiosyncratic amount of labour time in its production process, thereby creating new output value which materialises *ex post*. Though it would be beneficial to provide a full recount of Marx's (2003, ch.9) method by which he measures the relationship between input and output labour values, the space available here does not permit this. In essence, however, the method, which is unaffected by market conditions, works as follows. Out of a total amount of, say, 100 labour hours contained in the inputs, each firm uses a certain—idiosyncratic—amount for non-human inputs, and the remaining amount for human inputs; using 100 hours (or any other convenient number) enables the comparison of firms of different sizes. Then, out of these 100 hours, the total—measurable—amount of labour time actually transferred to the outputs decreases with *increasing* portions from non-human inputs and *decreasing* portions from human inputs—for example when shifting from $80_{non-human} + 20_{human} = 100$

to $85_{non-human} + 15_{human} = 100$; importantly, this shift also indicates an increasing degree of mechanisation and, therefore, an increase of productivity and efficiency.

It is important to note that these 100 hours are not transferred in full to the firm's outputs. This is so because only depreciation as a measure of the used up fixed assets, only the materials actually used and only the labour hours expended by employees during the production period under consideration, say 1 year, are relevant in this method.

Interestingly, Dassler (2015) derives a concept of competitive advantage or disadvantage from this method when: (i) a calculation out of 100 labour hours is made for the average firm in the industry (composed as an average of all competitors), to form the benchmark measure for individual firms; and (ii) the calculation is repeated for the individual firm under consideration. Because both calculations are made independently of each other, competitive advantage or disadvantage is obtained by way of the following relation—with q^{LT} representing the quantity of labour time expended in production:

- $q_{firm}^{LT} > q_{\emptyset}^{LT}$. In this case the firm under consideration is less productive and efficient because more labour time is expended than by the average firm in the industry (represented by \emptyset). The higher the individual firm's labour time expenditure is in relation to the average, the bigger the *disadvantage*.
- $q_{firm}^{LT} = q_{\emptyset}^{LT}$. This reflects the situation where the amount of labour time expended by the individual firm is the same as that of the average

firm. If this was the case then the firm under consideration would experience neither an advantage nor a disadvantage. This is, however, an unlikely case in practice.

- $q_{firm}^{LT} < q_{\emptyset}^{LT}$. Here the labour time expended by the average firm is higher than that of the individual firm, which makes the latter more productive and efficient. Clearly, the lower the individual firm's labour time expenditure in relation to the average the better off this firm is. This notion is consistent with Peteraf and Barney's (2003), namely that a firm's competitive advantage under the RBV is associated with higher efficiency as compared with rivals.

However, it is worth emphasising that the concept of $q_{firm}^{LT} < q_{\emptyset}^{LT}$ is based on firms creating less value—as labour time—, which differs from Peteraf and Barney's (2003, p.314): as discussed above, their concept is based on creating more value—as subjective utility expressed in units of money—than the break even competitor.

Finally, it should be noted that the amount of labour time expended by the firm is known before a single unit is sold, which enables predictions. Interestingly, because Marx (2003) is consistent with contemporary accounting principles (as shown by Bowman and Toms, 2010), the concept also works when using balance sheet data (instead of labour time), of which only input prices and depreciation figures are required.

In sum, Marx's (2003, ch.9) method, from which a concept of competitive advantage and disadvantage has been derived by Dassler (2015), is free from a

tautology. This is so because, temporally, firm resource value as well as labour time expenditure determine competitive advantage, but competitive advantage does not determine labour time expenditure or resource value.

Discussion and Implications

Besides being consistent with provisions of the RBV (i.e. temporality, tangible and intangible resources), the application of Marx’s labour theory to the RBV allows us to address the critical evaluation in Priem and Butler (2001a, p.30, emphasis in original) who stress that

“... resource value is determined from a source exogenous to the RBV. This [exogenous source], in effect, holds constant ... product and customer factors, because if products and customer factors vary, then resource values may vary, and unpredictable resource value changes will result in indeterminate outcomes in resource-based analyses. Therefore, ... the RBV ... simplifies strategic analysis with an implicit assumption of homogeneous and *im*-mobile product markets (i.e. unchanging demand ...).”

The first key point in this statement, namely that ‘resource value is determined from a source exogenous to the RBV’, is only partially correct. This is so because, as our review has shown, only utility is externally determined, which, as already discussed, elevates simple production hours to the status of socially necessary labour time. It is particularly important to note that this elevation does not expend these hours, nor does the elevation alter their magnitude. In other words, the hours themselves as well as their magnitude—and thus the labour value of the product or service—are ‘created’ (i.e. expended) internally.

Being clear about this distinction is important in light of Priem and Butler's (ibid) second key point, i.e. that a constant exogenous source is needed for obtaining predictable resource values and determinate outcomes. As shown above, this is correct because utility must have been established as the enabling condition for socially necessary labour time. However, this requirement is not, as Priem and Butler (ibid) as well as Sanchez (2008) have suggested, a shortcoming in the RBV's core concept. Instead, it is, as Barney (2002) argues, a reflection of economic reality which limits the applicability of the RBV; this applicability holds only as long as the utility in the industry remains constant or only changes slowly over time. In light of this, Priem and Butler's (2001a) critique is a reflection of a quest for certainty (Kraaijenbrink et al., 2010) which we do not pursue.

Finally, bringing Marx's labour theory to the RBV addresses Priem and Butler's (2001a) third point, namely that 'the RBV ... simplifies strategic analysis with an implicit assumption of homogeneous and *im*-mobile product markets ...'. Specifically, our review suggests that this assumption is no longer required because the creation of value as socially necessary labour time, and especially the creation of the magnitude of this value, is a process endogenous to the firm. Thus, as demonstrated in Marx (2003, 2005), the process is unaffected by market conditions, provided that utility has been established. However, this finding of our review does not preclude the possibility that market prices, as a reflection of exogenous conditions, may materialise above or below the socially necessary labour time contained within products or services. But, as discussed earlier, such conditions would not create or alter the amount of the time contained within products or services.

Conclusions

To resolve the tautology issue, the review above has shown that the RBV was in need of adopting the temporal thinking of production preceding of consumption in time. Two rival theories of economic value were subsequently evaluated, namely subjective marginal utility and Marx’s labour theory of value. By adopting and integrating the latter into the RBV’s core concept, we have explained ex ante resource value as the labour time contained within the firm’s inputs. We achieved this because, as the review has shown, resource value (i) remains unaffected by market conditions; and (ii) determines competitive advantage ahead of sale, but competitive advantage does not determine resource value. As the review has also shown, competitive advantage is obtained ex post where the individual firm has expended a lower amount of labour time in its production process than the average firm in the industry, expressed mathematically as $q_{firm}^{LT} < q_{\emptyset}^{LT}$. The method with which to predict ex post success was also discussed.

We close by drawing attention to Sanchez’s (2008, p.73) evaluation of the RBV’s status:

“The (superficial) plausibility of the RBV’s core proposition, the (facile) applicability of its concept of ‘resources’ to virtually anything, and the (absolute) assurance that competitive success can always be argued ex post to result from some kind of rare or unique firm ‘resources’—these features of the RBV weave a seductive web that has ensnared a surprising amount of strategy ‘research’ in the past decade.”

Though we agree that the concept of the RBV had until now posed substantial challenges to be overcome, our review suggests that Sanchez’s dismissive

evaluation may have been premature. This is especially so because the RBV has thus far only acknowledged that utility (i.e. use value) is created externally, but has not acknowledged that economic value as socially necessary labour time is created internally, i.e. within firms' production processes.

Because major issues with the RBV are now resolved, it is an appealing prospect for future research to revisit the uneasy relationship between market factors (and in particular transaction costs) and firm factors. However, the most obvious way forward is to undertake empirical research, e.g. to predict competitive advantages or disadvantages of firms on the basis of the relationship between q_{firm}^{LT} and q_{\emptyset}^{LT} using balance sheet data. In the same way research could predict the likely success or failure of mergers and acquisitions, by investigating whether the resulting firm will continue to enjoy the pre-merger competitive advantage of $q_{firm}^{LT} < q_{\emptyset}^{LT}$. Should the merger account for an alteration of this relation then it is unlikely that the resulting firm will continue to enjoy an advantage. But this must be left for another day.

Notes

¹Jevons held that time expended within the firm's production process is a factor for the creation of marginal utility; specifically, utility diminishes as a result of the labourer tiring with the duration of his or her toil. In contrast, the Austrians see marginal utility solely as the result of subjective judgement when a buyer considers a product or service offering favourably.

²Energy or the law of gravity for example are also not directly observable (only their manifestations as motion are), and thus only exist as abstract mental reflexes which help to explain reality. Nevertheless, energy and the law of gravity are readily applied when measuring and predicting phenomena associated with motion. Note that this abstraction does not suspend with time.

³Although references for Marx refer to the German printed edition, the English wording from the online source, at Marx (2013), was used in an effort to avoid untraceable translations. The English text was checked for consistency against the authoritative German text.

⁴When created by man for the purpose of sale, i.e. when not a gift of nature, a hydroelectric dam (a waterfall) or a tree nursery (an uncut forest), etc, do qualify as commodities.

⁵A related argument which the utility theory puts forth against the labour theory here is based on the somewhat quixotic assumption that a seller would take water to a random spot inside a desert for the sole purpose of catching

a desperate buyer willing to pay an extortionate price. In reality however, should the two persons meet as a matter of coincidence, the water is provided as a free gift to the desperate person. But, in any case, nothing in these arguments changes the average conditions under which diamonds are brought to market outside of the desert.

⁶The example commonly used to support this allegation is the market price of original art, and especially the rising market price of a painting after the painter's death. However, it can be argued that the labour theory does not intend to cover the price of original art because such art is not a commodity—because the original pieces are irreproducible under the conditions of capitalist production. But even if the labour theory is forcefully applied to art, changing market prices as the result of changing demand conditions are indeed explained. This is so because the time expended when creating the painting—the labour time supplied—will not adjust to meet the increase in labour time demanded after the painter's death.

⁷For example, the need to add satellite navigation to lower end car models does not suddenly and unexpectedly 'fall from the sky' and does not necessitate a new factory, a complete change in input materials or a total replacement of the workforce. However, one example where established socially necessary labour time was rendered obsolete was the global transition from analogue to digital technology, as a result of which Sony and other companies almost went out of business. Kodak for example never fully recovered. Nevertheless, firms at the time were aware of this transition, yet misjudged its impact.

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