Towards Building a Human-Capital Based Governance Framework

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Although there is a consensus among scholars and managers about the importance of human-based assets, there is a lack of understanding of how the evolving role of human capital, will affect governance, control and wealth (or rents) appropriation in the future. This paper offers a conceptual framework for governance design based on human capital value and built upon various theory constructs that have addressed some relevant facets of the human capital dilemma while ignoring others. The paper argues that various forms of employment contractual relationships will emerge to further accommodate this critical asset and proposes some suggestions for future research.

INTRODUCTION

Despite general agreement among scholars, managers, and regulators that people working for corporations and organizations in general are the key asset in today's brain-driven and knowledge-based global economies, and an extensive literature on corporate governance mechanisms, there has been little research attention directed to the role of human and organizational capital in governance design and evolution. Investments in specialized human capital such as on-the-job training, specific skills and knowledge processes could generate economic rents (or quasi-rents) and potentially present both risks and opportunities particularly in highly competitive and growth-driven environments. Ownership and control issues embedded in contractual arrangements with "key employees" as knowledge and talent holders in a world of increased volatility and risk offer an ideal setting for examining governance mechanisms both from positive and normative perspectives.

With the establishment of knowledge-based economies characterized by increased complexity and the rapid pace of advances in information technologies such as internet and intranet platforms (mahoney 1992, kim & mahoney 2006, lajili & mahoney 2006) firms are constantly rethinking their corporate governance mechanisms and organizational structures. While there is general agreement that knowledge assets' management is crucial in firms' future profitability and growth opportunities, there is less consensus in the literature about how to account for, govern and value investments in knowledge assets such as human and organizational capital particularly for knowledge-intensive firms and industries with highly specialized and complementary investments in both physical and human assets (becker 1962, 1993, friedman & lev 1974, hart 1995, rajan & zingales 1998, mahoney 2005, lajili & zéghal 2006). Specifically, the evolving role of specialized human capital in governance choice and design has received little attention in the governance literature (notable exceptions include, for example, masten 1988, hart 1995, rajan & zingales 1998, williamson 1996, haas & hansen 2007). Recently, there has been a renewed research interest in human capital, social networks, and organizational form choice (nickerson & zenger 2002, azoulay 2004, gibbons & waldman 2004, levin & tadelis 2005, broschak & davis-blake 2006).

Furthermore, blair (1995) reports that accounting profits may represent less than 60% of the total economic rents and quasi-rents generated by us corporate activity in 1993. This figure is expected to be increasingly more significant in the knowledge and service-based economies of the 21st century (asher, mahoney and mahoney 2005).

The present paper explores the role of human capital in the design and evolution of governance mechanisms based on strategic management, organizational economics, human capital and strategic human resource management literatures. It also proposes a set of testable propositions with regards to which governance mechanisms would favor or hamper investments in human capital accumulation within and across organizations and other institutional arrangements. The paper is divided in three sections: first, the role and place of human capital and resources in governance design based on the most prominent theories of the firm in strategic management and organizational theory literatures are investigated. Second, a set of propositions and testable hypotheses are presented to help delineate how certain human capital features affect governance choice and design. The final section concludes and offers some suggestions for future research.

Role of Human Capital and Dynamic Capabilities in Organizational Design Theories

Human aspects in organizational economics and strategy literature date back to the seminal and foundational works such as Barnard 1938, Simon 1947, 1982, and Cyert and March 1963, among others. The behavioral approach to the theory of the firm detailed in these works provides the foundation for today's most prominent organizational economics and strategic management theories (e.g., Mahoney 2005). In its simplest form, employees as members of an organization contribute their services, time and effort to the organization in return for *"inducements"* offered by the organization (Barnard 1938, Mahoney 2005). Such inducements or incentives include monetary rewards (e.g., wages and benefits) as well as non-monetary rewards such as prestige, work environment, career development and other relational capital. Although this contract-based relationship of employees to their organization seems fundamental to organizational identity, the employment contract is characterized by an *authority relationship* in contrast with arm's length contracting such as the case of commercial contracts for services or products (see for example Masten 1988 for detailed legal analysis of employment contracts within and across firms).

What is the role of human capital (or assets) in various theories of the firm in the organizational economics and strategic management contemporary literatures? In the following sections, we delineate how human capital was portrayed in these theories and lay the groundwork for the subsequent conceptual section to help explain and predict governance choice based on human capital attributes.

Transaction Costs Theory

Transaction costs theory (TCT) has been developed largely by Williamson (1975, 1985, and 1996) based on early works by Coase 1937, Barnard 1938, Arrow 1974, Simon 1947, Chandler 1962, among others. TCT is an efficiency-based theory of firm existence, scale and scope. In TCT, the employment relationship represents one component of vertical integration (firm organization) but could also cover various forms of employment contracts such as outsourcing and strategic alliances and joint ventures, among others. TCT focuses on market failures with respect to specific human capital where investments in firm-specific human capital are considered sunk costs since their value is expected to be much lower outside than inside the firm (e.g., human capital investments in wind turbine energy firm). These sunk costs increase the transaction costs of deploying human resource systems i.e., interrelated activities and functions and processes directed at attracting, developing and maintaining (or disposing of) a firm's human resources (Lado and Wilson 1994). Ex-post opportunism and hold-up problems might discourage investments in specific human capital, thus safeguards are needed to support and sustain investments in specific human capital (Wang and Barney 2006). The governance implications of specific human capital investments will be further examined in the following sections of the current paper.

Another important aspect of human capital theory from the perspective of TCT deals with the legal and contractual nature of the employment relationship. According to TCT, an authority-based relationship

characterizes the employment contract where employees are bound by law to obey, disclose relevant information, and act in the best interests and comply with the demands of their employers (Masten 1988). In response to Alchian and Demsetz's1972 argument that the employment contract is fundamentally similar to a contract between consumers and their grocers, Williamson (1972) and later Masten (1988) maintain that the employment relationship carries a relatively high degree of authority, flexibility, and information advantages (e.g., information sharing and coordination, sequential adaptation and internal conflict resolution mechanisms). In TCT, firm organization or hierarchy is oftentimes portrayed as an internal dispute resolution channel that avoids legal costs and favors sequential adaptation and information sharing and coordination, in other words, "hierarchy is its own court of ultimate appeal" (Williamson 1996). Therefore, human capital or assets are considered as potentially rent-generating resources where the higher the degree of asset specificity in terms of firm-specific "leaning by doing" and organizational knowledge accumulation creates "lock-in" between the employee and the employer that could potentially lead to costly haggling and hold-up problems. In order to minimize these positive transaction costs, relational and implicit contracting, relationship building, and trust enhancing behaviors could favor firm organization over arms' length employment contracts. The less firm-specific the investment in human capital, and the higher the uncertainty regarding future industry growth and demand, the more likely the boundaries of the firm will be expanded to accommodate inter-firm linkages and strategic alliances (including labor outsourcing) to achieve transactional efficiencies.

Agency Theory

Agency theory is another major theoretical framework under which human capital and resources have been examined in the strategic management and corporate finance literatures, among others. Under the view of the firm as a nexus of contracts, the employment relationship under agency theory's mathematical branch (e.g., Holmstrom 1979) is a complete or comprehensive optimal contract where all foreseeable future contingencies and parties' obligations in all future states of the world are specified a-priori no renegotiation or ex-post contracting costs, which constitutes one of the most fundamental differences with TCT. Positive agency theory emphasizes team production and performance measurement (e.g., task programmability and non-separability) and thus offers a suitable framework for examining task design and reward structures in team-based organizational settings (Mahoney 1992, Alchian and Demsetz 1978).

Agency theory focuses on optimal employment contract design and terms and how to best align the interests of employee and employer following the delegation of tasks and the creation of agency costs. By minimizing the agency costs of labor contracts (i.e., selecting and hiring, training, motivating, compensation and pay, turnover, retirement, termination) agency theory offers an "idealistic" framework for employment contracts where the behavioral and operational details of how to effectively and efficiently align human and organizational goals is left largely unanswered (Gottschalg & M. Zollo 2007, Coff 1997). A more realistic approach to employment contracts more fully developed in the strategy and modern property rights literature (e.g., Hart 1995, Rajan and Zingales 1998, Asher, Mahoney and Mahoney 2005) is based on contract incompleteness where an explicit recognition that the variables upon which rewards are structured such as effort, are not observable, nor verifiable. Implicit and/or relational contracts particularly for high human capital jobs (e.g., university professors, research scientists, management consulting, legal, finance and accounting professional firms) are examples of incomplete contracts which could be examined within the agency framework augmented by property rights and stakeholder theories.

Information asymmetries in labor markets create market frictions and agency costs, i.e., monitoring costs, bonding costs, residual loss (Jensen and Meckling 1976). For example, ex-ante adverse selection and ex-post moral hazard could impede employee hiring decisions (resource picking and resource building processes, Makadok 2001). Furthermore, the legal implications of the employment relationship in terms of nondisclosure liability on the part of the employee and the employer's liability for the mistakes or torts of his employees (e.g., the Exxon Mobil's oil spill) may lead to higher monitoring costs (Masten 1988). The separation of ownership and control in agency relationships also creates agency and information costs. In employment relationships, for example managers and key employees may under-

invest in firm-specific human capital creating potential residual loss due to misaligned individual and organizational objectives. To mitigate agency loss, incentive alignment contracts and schemes are proposed by agency theory (e.g., performance-based compensation packages, stock ownership plans, pension and benefits…). Moreover, risk sharing arrangements and firm diversification strategies aimed at managing environmental uncertainties and risks posed by the rapid and complex changes in the firm's internal and external environments could offer some safeguards for employees and thus elicit more optimal levels of firm-specific investments in human and organizational capital.

The allocation of the residual rights of control over the use of the assets resides with the owner of the asset (Hart 1995). For example, in the case of public companies, the board of directors and management hold the residual rights of control and decision making over the use of tangible and intangible assets. However, and because human capital is essentially owned by the employees, they should hold the residual rights of control over the use of their skills, knowledge and abilities (i.e., human capital). This in turn poses one of the most fundamental and challenging problems in managing and leveraging human assets for value creation, appropriation and sustainability (i.e., competitive advantage).

Resource-Based View/Dynamic Capabilities

The resource-based view in strategic management considers the firm as a collection of heterogeneous human and non-human resources forming its capabilities. This portfolio of tangible and intangible assets skills, knowledge assets and processes such as routines, experience, and codified and tacit knowledge is increasingly driving wealth creation in today's information and knowledge-based economies (Penrose 1959, Barney 1991, Nelson and Winter 1982, Grant 1996, Mahoney 2005, Ireland and Webb 2006). Three important aspects characterize the RBV contribution to the theory of the firm (Mahoney 2005, Ireland and Webb 2006):

1) Value or wealth creation (how is wealth created and source of rents and quasi-rents)
2) Value appropriation and distribution (how is value divided among key firm stakeholders)
3) Value sustainability (how can a firm's competitive advantage be maintained over time)

Human capital and firm-specific human resource systems could be a source of value creation and competitive advantage particularly for knowledge firms (such as Microsoft, Google, RIM, and Amazon, among others) but these competitive advantages may be elusive and pose hard dilemmas for management (Coff, 1997, 1999). Indeed, the processes by which firms transform resources and capabilities into competitive advantages are still largely not well understood (Simon, Hitt and Ireland 2007, Wright et al. 2001). The field of strategic human resource management (SHRM) specifically examines how human resource management systems lead to sustainable competitive advantage using the resource –based view (Wright et al. 1994, Wright et al. 2001, Lado and Wilson 1994, Youndt and Snell 2001). For example, Wright et al. (2001) examine the differential effects of human resource practices on human capital, social capital and organizational capital. They define *human capital* as the pool (or stock) of skills, knowledge and abilities of employees, *social capital* as the relationships that support knowledge exchange and sharing, and *organizational capital* as the knowledge embedded in the organization's systems and processes (Wright et al. 2001). Thus for human capital to potentially lead to sustained competitive advantage for the firm, it would have to be constantly and appropriately embedded, leveraged and deployed within the firm's social and organizational capital and efficiently managed within the firm's environmental context (Lippman and Rumelt 2003, Simon et al. 2007). The introduction of environmental complexity, learning and change lead to the concept of dynamic capabilities with a focus on both resource picking and resource/capability building as key sources of economic rent creation. Alignment between individual and collective or organizational interests is crucial for generating sustainable competitive advantage (role of motivation types, drivers, and processes, agency and governance-based competitive advantage) Gottschalg and Zollo (2007), Asher, Mahoney and Mahoney 2005, Makadok (2003).

The uniqueness, scarcity, and inimitability of these dynamic capabilities potentially lead to sustainable competitive advantage and above-normal returns. But how do human capital investments (specific and general types) fit in this dynamic capability/resource-based of the firm and what are the

governance structures that would support such investments? The real options framework (e.g., Trigeorgis 1997) offers some interesting insights into how to leverage and manage human resources strategically by building flexibility into investments in human and organizational capital. This will be further developed in the following sections of the current paper.

Property Rights Theory

Property rights theory (PRT) was developed as a response to agency theory establishing contract incompleteness. Comprehensive contingency-based contracts are costly and difficult to write in a world of uncertainty, bounded rationality and asymmetric information, thus the party who holds the residual rights of control and decision making (rights that have been contracted away) over the assets of the firm will also own the assets (Hart 1995) and is entitled to rents generated by the use of these assets. Property rights are the social institutions that define or delimit the range of privileges granted to individuals to specific resources, such as parcels of land or water (Libecap 1989). They include the right to exclude non-owners from access, the right to appropriate the stream of economic rents, and the right to sell or otherwise transfer the resource to others (Mahoney 2005). With respect to human resources, firms hold property rights over the physical resources and other intangible assets (such as patents, reputation, and organizational capital) but employees hold the residual rights of control over their human capital unless explicitly specified in the employment legal contract. Human assets are usually bundled with physical assets (co-specialized or complementary assets) to create firm value and generate rents (e.g., a research scientist in a pharmaceutical firm or at a university research centre and the laboratory he/she works at, insurance agents and customer files, IT engineer and management information systems specific to a particular company such as IBM….). Employees cannot be "owned" by their employers since employees can leave the firm at will, however, employers usually have residual rights of control over the complementary assets (tangible and intangible such as patents) which gives them leverage and ultimately control over human assets (Hart 1995, Mahoney 2005). Firms earn income from the use of their human resources and enter into employment incomplete (relational or implicit) contracts with their employees over the use of resources, information disclosure, termination, and access to resources (Masten 1988, Rajan and Zingales 1998). Firms can theoretically "sell" their accumulated human capital (specific and general types) when they agree to merge or be taken-over by other firms. For example, the Cognos takeover by IBM in 2008 is one illustration where the patented software and the engineers or programmers are bundled to form most of the firm value (intangible asset-driven) and sold to IBM. Of course, the option to leave the new company by Cognos employees again suggests companies do not hold any property rights over employees but over a specialized asset (software) that could be unbundled from the human asset if enough replication and standardization is available to train new engineers to develop and work on such software. Residual rights of control and access to specialized assets should rest with the agents who are best positioned to make the best use of the assets to increase the value of the firm (Mahoney 2005). This will in turn have important implications for optimal governance which is further discussed in the following sections.

Other Theories: Stakeholder Theory and Labor Markets Theory

Stakeholder Theory

Stakeholder theory is another theoretical framework under which human capital investments and governance could be approached. Stakeholder theory is a broad-based framework that has been undergoing significant growth in the last few decades. It has developed largely in response to the shareholder supremacy view of agency theory and finance-based theories. Indeed, considering shareholders as the only residual claimants and the only stakeholders exposed to the business and financial risks of the company seems to be increasingly an unsatisfactory and highly simplified assumption (Zingales 2000, Asher, Mahoney and Mahoney 2005). For example, the recent bankruptcies in the financial services and automotive sector suggest that multiple stakeholders namely bondholders and employees (internal stakeholders) hold significant stakes in the firms they invest in (human capital for employees and financial capital for bondholders) and are exposed to the same risks as the shareholders

(providers of equity capital). Employees are usually identified as a salient stakeholder group in stakeholder theory and some of the social and ethical aspects of employment relationships have been examined in the management literature; descriptive, instrumental, and normative aspects of employee stakeholder management (Preston and Donaldson 1995). The stakeholder approach in corporate governance is particularly noteworthy of fundamental differences between some countries. For example, Donaldson and Preston (1995) quote the following from "The Economist" issue 1993:52 " *...In America, for instance, shareholders have a comparatively big say in the running if the enterprises they own; workers…have much less influence. In many European countries, shareholders have less say and workers more…In Japan… managers have been left alone to run their companies as they see fit—namely for the benefit of employees and of allied companies, as much as for shareholders."* It would be interesting to examine more systematically whether these institutional and culture-based differences still persist across major developed countries such as the US, Canada, the UK, France, Germany and Japan, among others. Stakeholder theory could be complemented with modern property rights and the incomplete contracting theory to further shed light on the distributional and social aspects of human capital governance as discussed below.

Labor Markets Theory

Since the early 1960s, the theory of human capital accumulation has been largely developed within the labor economics literature and stimulated research interests in other business fields such as organizational economics, strategy, accounting, finance, and human resource management (e.g., Becker (1962, 1993), Acemoglu and Pischke 1998, 1999, Kessler and Lulfesmann 2006, Azoulay 2004, Booth and Bryan 2005, Friedman and Lev 1974, Dittman, Juris and Revsine 1976, Coff 1997, Masten 1988). Much of the earlier literature developed the general framework for examining human-capital related investments and returns from both individuals' and firms' perspectives and attempted to capture and/or measure the impact of human capital investments on wages and returns as well as on firm performance. One of the most notable contributions of standard human capital theory (Becker, 1964, Mincer 1974) is its distinction between general and firm-specific training or human capital and the general implications of training investments and impacts on wages. According to human capital theory, firm-specific human capital and training refers to knowledge, skills, and experience acquired and accumulated on-the-job within the boundaries of the firm and which are specific to the firm's assets, business model, or knowledge processes and networks and "learning by doing". The degree of firm specificity in human capital investments depend on the transferability of the knowledge and skills acquired by employees in alternative jobs and whether or not this knowledge loses value in its next best use (Williamson 1975, 1985). These two definitions of specific human capital in labor economics, TCT and RBV clearly coincide. However, TCT, RBV, Agency and property rights theories did not fully utilize labor markets theory to further address and solve human capital-related problems in modern organizations. The current paper attempts to partly fill this research gap.

Investments in general human capital increase worker's productivity in various employment situations, namely with other employers, it will increase future earnings and wages for workers who receive it in a competitive labor market, and thus the current employer might not provide the training and the worker has to pay for such general training (Acemoglu and Pischke 1998). The firm should only pay for specific training such as an idiosyncratic internal information system or manufacturing processes and machinery that are used exclusively in the firm. However, empirical evidence seems to suggest that employers would pay for general and specific-types of human capital investments (Booth and Bryan 2005) which could be one way to motivate and retain key employees and/or bundling of human and organizational capital by firms (Lajili 2010, Forthcoming). Moreover, the market for talent (both managerial and technical talent) is characterized by information asymmetries, thinness (small numbers bargaining), asset specificity, causal ambiguity, and uncertainty (Coff 1997). This could lead to market failure and incomplete contracting and thus the governance of such employment contracts would incorporate non-financial elements such as social networking, trust and relationship building, knowledge

and information sharing as well as idiosyncratic employment contracts (Rousseau, Ho and Greenberg, 2006).

Recent research testing Becker's human capital framework shows among other things that because investments in human capital (such as training and development expenditures) are not readily and publicly disclosed by companies in their annual reports, financial markets are "myopic" when valuing companies particularly those with intensive labor or knowledge capital. For example, Lajili and Zéghal (2005a) found a negative but not significant relationship between the market value of a sample of US firms and their book values augmented by human capital-related indicators such as estimated labor productivity and efficiency measures. Because human assets are not currently recognized on firms' balance sheets (total labor costs are largely voluntarily disclosed in North America) financial markets seem unable or unsure of incorporating the valuation impacts of investments in human capital (both of the general and specific types). In a different study, and using a portfolio performance approach, Lajili and Zéghal (2006) found that portfolios of labor disclosing firms with higher estimated labor productivity and efficiency measures outperformed their counterparts with lower values respectively. Thus, modern labor economics offers interesting insights for measuring and quantitatively assessing human capital contributions to increased firm value and could be used to help minimize the information asymmetries between employees and employers with regards to employees' claims on the value of the firm.

Table (1) summarizes the previous discussion about the role of human capital in various theories of the firm and labor economics.

TABLE 1
THEORETICAL INSIGHTS ON THE LINKAGES BETWEEN HUMAN CAPITAL AND GOVERNANCE MECHANISMS

Theoretical Construct	Focal Human Capital Points	Valuation Aspects	Governance Mechanisms
Agency theory	***Interest alignment*** *(employer-employee)* ***Incentive compensation*** ***Agency costs*** *(ex-ante screening and ex-post monitoring costs of employment contracts)* ***Cost/risk sharing contracts***	*Minimum agency costs → incentive-compatible complete contracts → performance-based compensation, equity/asset ownership, internal controls and monitoring devices*	*The higher the agency costs related to the employment relationship (e.g., asymmetric information and moral hazard in labor contracts) the more incentive and performance-based compensation and rewards are expected. Firm governance more likely if high agency costs and labor market failures (e.g., managerial talent) with incentive compensation*
Resource-based/Dynamic Capabilities theory	***Unique, inimitable individual skills and/or organizational routines****: knowledge creation and sharing processes.* ***Dynamic capabilities*** *(learning mechanisms and collective activities to generate and modify operating routines to improve organizational effectiveness (Zollo & Winter 2002)* ***Real Options*** *(human capital investments under uncertainty, flexibility as a competitive*	*Leveraging firm capabilities (human assets) and harnessing dynamic capabilities (investments in specific human capital) for sustainable competitive advantage → Human capital investments and rent creation Experience*	*Motivational mechanisms to align interests and create positive work environment for the employees: shared governance, participation, equity ownership, flexibility*

	advantage)	*accumulation, knowledge articulation and codification processes, team work and motivational mechanisms*	
Property rights theory	***Asset ownership rights*** *(e.g., exclude non-owners from access, stream of economic rents appropriation, sale or transfer of assets)* ***Incomplete contracts*** *(due to bounded rationality and opportunism)* ***Residual rights of control*** *(who detains rights that have been contracted away matter)*	*Ex-ante allocation of rights affects ex-post division of surplus and rents → allocation of ownership rights and access to critical assets (Rajan & Zingales 1998) affects power distribution inside the firm → incentives to make prior relationship-specific investments such as specific human capital investments would be affected by these ex-ante ownership and power allocation rights*	*Co-specialized and complementary assets imply firm governance and implicit/relational contracting supported by equity ownership and/or governance participation (e.g., scientists in pharmaceutical firms) Unbundling the property rights attached to human capital could lead to hybrid modes of governance such as partnerships, franchising, high-powered incentives and performance-based compensation (e.g., investment banks, legal and accounting firms)*
Stakeholder theory	*Employees as* ***a key stakeholder group*** ***Corporate social responsibility(CSR)*** *in recruitment, training and development of the workforce, social justice, equity and fairness* ***ethical*** *dimension of human resource management*	*Positive and instrumental approaches to human capital investments, bargaining and labor contracts negotiations*	*Governance sharing and participation (e.g., dual board governance in some European countries and Japan) government regulation or CSR-based social performance incentive, disclosure rules and corporate practice with respect to human resource management*
Labor markets theory	***Labor market structure*** *(competitive, monopolistic, oligopoly, market imperfections and frictions in specific human capital)* ***Human capital investments and returns*** *(firm and employee's views)* ***Productivity measurement*** *(value marginal product and labor costs differential)*	*Specific and general human capital investments in purely and imperfectly competitive labor markets* *Wage structure and returns to human capital investments* *Cost/risk sharing, credit constraints and investments in training and development of workforce*	*Market-based wage determination and conditions attached to costly investments in general and specific human capital accumulation (e.g., Executive MBAs in the government sector)* *Turnover and workforce mobility could be increased with general and specific human capital accumulation if opportunities to capture increased productivity are available at future employer*

Transaction-costs theory	***Human asset specificity*** task-, firm-, industry specific skills, "learning by doing" ***Bounded rationality and opportunism*:** (ex-ante and ex-post contracting costs)	Minimum transactions costs Specific human capital investments potentially generate quasi-rents to the employer increasing the ex-post haggling costs and hold-up problems	The higher the human asset specificity (firm-specific skills and investments) the higher the likelihood of firm governance. The lower the asset specificity of human capital investments, the more likely the market and short-term contracts (outsourcing) will prevail.

CONCEPTUAL FRAMEWORK FOR PREDICTING ORGANIZATIONAL DESIGN BASED ON HUMAN CAPITAL ATTRIBUTES

How do human capital features and degree of importance in driving firm profitability affect the choice of governance mode (i.e., firm employment, labor contracts, partnerships, strategic alliances…)? What are the predictions of various theories of the firm with regards to human capital formation and investments? Do certain governance modes and associated theories of the firm hamper or favor investments in human capital? Why and how?

Following the previous section focusing on the role of human capital and human resource systems in the theories of the firm and labor markets, we develop propositions/hypotheses predicting the type of organizational form and supporting governance mechanisms based on the human capital and dynamic capabilities characteristics, and firms' strategy and growth objectives.

In the current paper, we argue that an integration of elements from various theories of the firm as well as from modern labor markets theory is needed to examine more systematically the role of human, social and organizational capital in driving firm wealth creation and rent generating dynamic capabilities. We further maintain that a theory of firm governance (corporate governance) where human capital is a focal point would help to improve our understanding of how human resource-driven value is created, appropriated and sustained over time. TCT and RBV could be joined in this framework to validate the potential of value creation, stakeholder, property rights and agency theory/incomplete contracting, and labor markets theories would provide the framework for eliciting appropriation and distributional effects of human capital value. Finally, the dynamic capabilities view of RBV would help examine the conditions under which human-based firm value is sustainable.

Value Creation

Human capital specificity in the form of idiosyncratic firm-level skills, routines, knowledge accumulation that is specific to a firm's technology, IT system or product market may potentially lead to a firm's competitive advantage (Barney 1991, Peteraf 1993, Williamson 1975). The specificity of the human capital accumulated inside the firm, and particularly the tacit knowledge (Grant 1996) represent rare, inimitable and valuable assets that could potentially generate economic rents and quasi-rents if this form of barrier to entry persists. However, investments in firm-specific human capital represent a necessary but insufficient condition for generating economic rents. The specific human capital investment has to be embedded in organizational routines and knowledge sharing and exchange systems to allow for the human knowledge and skill formation specific to the firm's operational environment, to be usable, accessible, leveraged and deployed to achieve the firm's corporate strategy and growth objectives (Lado and Wilson 1994, Snell et al. 1996, Wright et al. 1994, Wright et al. 2001). Thus we formulate our first proposition as follows:

Proposition 1: a) Firms investing in firm-specific human, social, and organizational capital should have higher value and rent-generating potential leading to a competitive advantage.

To be able to realize the potential economic rents and value created by firm-specific human, social and organizational capital, an effective and efficient alignment of individual, group and organizational goals needs to be achieved. By recognizing the strategic value added of human and organizational assets, firms relying more on such resources will invest more in human resource management systems to differentiate them from their competitors' and attract, develop and retain talent (Lado and Wilson 1994, Wright et al. 2001). Motivational, behavioral and group-based performance and teamwork enhancing HR strategies embedded in a firm's IT system and organizational routines also supports such alignment between individual and organizational goals using for example social networks, trust building and knowledge sharing strategies and systems (Coff et al. 2006, Gottschalg and Zollo 2007). Thus, the second part of proposition (1) is formulated as follows:

Proposition 1: b) Firms having a better alignment between individual and organizational goals will be able to realize higher economic rents from investments in firm-specific human, social and organizational capital.

Value Appropriation

The division and distribution of economic rents generated from the deployment of both general and firm-specific accumulated knowledge has been the subject of extensive research recently (Coff 1997, 1999, Rajan and Zingales 1998, Wang & Barney 2006, Von Nordenflycht 2010, Core and Guay 2010). Concepts based on human capital theory, agency theory and transactions-costs economics as well as organizational theory and the resource-based view offer key elements for thinking about this important component of human resource compensation arrangements. For example, incentive or pay-for-performance compensation packages allow for sharing the rewards and outcomes from investing in human capital accumulation and leveraging strategies between the firm and its employees. For example, Von Nordenflycht (2010) argues that alternative compensation such as contingent and performance-based pay is an organizational response and feature in knowledge-intensive firms, namely professional service firms (PSFs). Knowledge-intensive industries such as accounting, law, consulting and high-technology are all characterized by high levels of knowledge development and deployment and thus would require continuous investments in specific as well as general human capital. Since knowledge workers could be hard to direct and monitor ("cat herding" effect), contingent and long-term equity-based compensation would help mitigate such organizational challenges and help promote employee loyalty, satisfaction and retention by the firm. For example, the "partnership" governance structure in classic professional service firms such as accounting, law, and finance, offer a good illustration of this form of compensation arrangements where the partners are paid based on contingent and performance outcomes as well as holding equity ownerships in their firm (Von Nordenflycht 2010, Coff 1997). Furthermore, investment in specific human capital in particular raises the risk of opportunism as discussed earlier in the paper, and may potentially lead to under-investment in specific investments in human capital on the part of employees, therefore firms where revenues and profits are either directly or indirectly dependent on specific assets, training and talented employees, would more likely offer more competitive incentive compensation to their employees (executive management and key employees). The higher the risk perceived by employees when they invest in firm-specific human and organizational capital, and given that monitoring is costly and information is asymmetric or "opaque" between the firm and its employees, the latter will demand a higher risk premium in their compensation packages (Core and Guay 2010). Following this discussion, we formulate our second set of propositions 2 (a) and 2 (b):

Proposition 2: a) Economic rents created by human, social and organizational capital should be appropriated by both the firm and its employees.

Proposition 2: b) Employees who invest more in firm-specific human, social and organizational capital will be exposed to higher opportunism and hold-up (transaction costs) from their employer and thus will demand higher returns and appropriation of the firm's rents.

The form and level of compensation for employees who invest in firm-specific human capital is still an ongoing research effort both in academia, policy circles, and firms. Although prior research has mostly focused on executive compensation (e.g., Core and Guay 2010) we argue in the present paper that more comprehensive human resource governance-based strategies are warranted in the future to help provide sound theoretical and sustainable growth for companies looking to leverage their total human resource base (both management and employees). Stock ownership, option grants and long-term deferred compensation, as well as shorter term performance-based cash bonuses are all possible forms of sharing in the revenues generated by firms that invest, build and deploy their human resources and dynamic capabilities. However, in determining the optimal compensation arrangements particularly in the case of high investments in firm-specific human capital, the opportunity costs of such investments have to be known by both employees and the firm. For example, had the employee chosen to invest in general human capital instead of firm-specific human capital, she could increase her chances for work mobility, more competitive pay and work arrangements outside the firm. To induce the employee to invest in firm-specific knowledge and skills, the firm has to compensate the employee in excess of their opportunity costs. When the opportunism costs are added to this basic general vs. specific-human capital investment decision, the compensation arrangement could be higher or other complements or supplements to monetary compensation could be instituted. For example, flexible work arrangements, benefits packages, pension and post-retirement benefits, in addition to the work environment and culture, social and relationship building (Coff 1997, Wang and Barney 2006) could all compensate or substitute for the additional risk of investing in specific human capital. If companies fail to account for this increased risk facing employees investing in firm-specific human capital, then employees will most likely under-invest in the firm, and could potentially leave the company for a competitor. Here, the turnover threat could offer a solid bargaining position for employees especially if their human capital could be transferred to competing firms and is not dependent on a co-specialized asset (such as a research lab for a scientist in a pharmaceutical firm). Thus, we formulate proposition 2 c as follows:

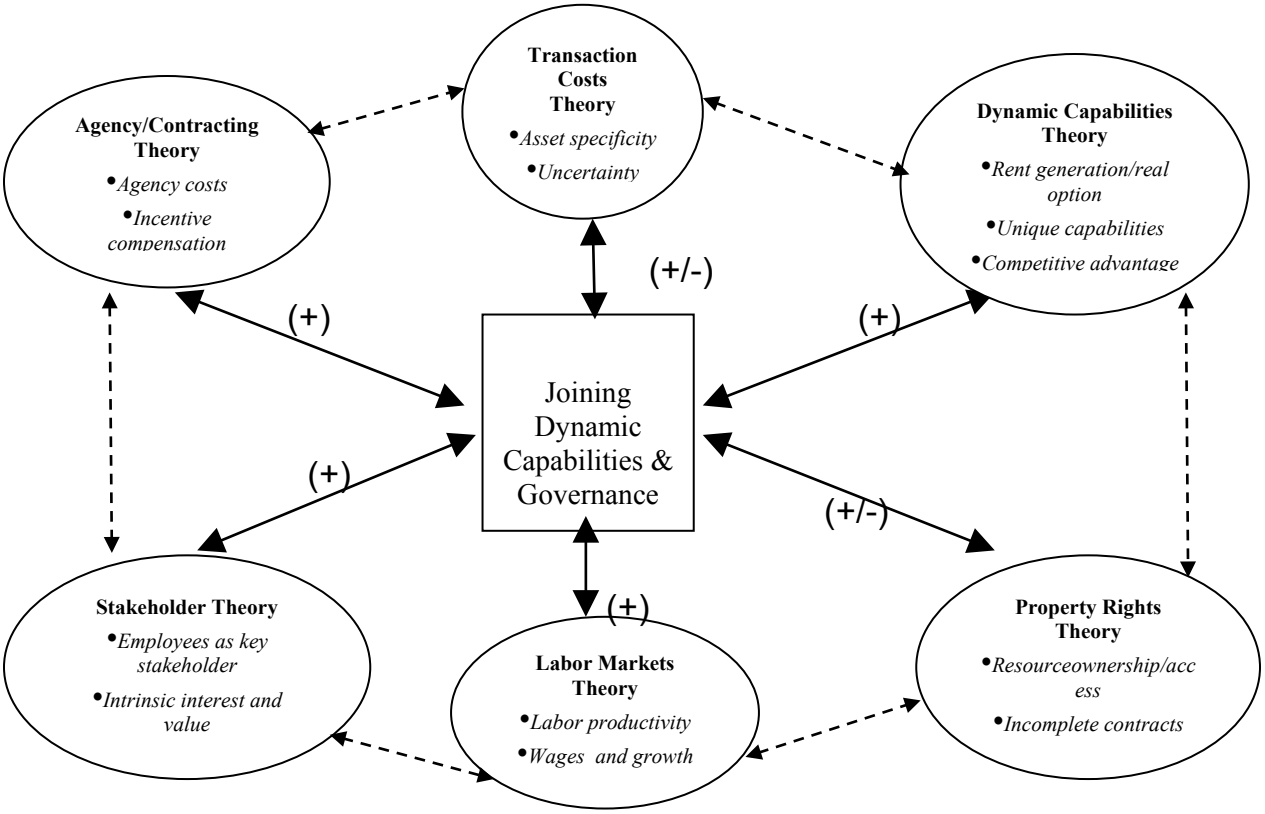
Proposition 2: c) The division of rents created by human, social and organizational capital should give sufficient returns and more than cover the opportunity costs of employees investing in firm-specific intellectual capital to keep employees in the coalition/firm.

Governance Structures Supporting High Human Capital Investments

Although human resources and specialized human capital are increasingly viewed as major value drivers in today's information and knowledge-powered economies, governance mechanisms that would support and leverage corporate investments in such human capabilities seem to be lacking in general. For instance, extensive research has been directed to executive compensation and remuneration as a major component of governance structure with a predominantly agency theoretical focus (Core and Guay 2010, Blair 1995, Coff 1997). What is lacking is a comprehensive governance system that would address both executive and other key employee's investments in human capital, particularly rent-generating firm-specific human capital. One of the main goals of this manuscript is to offer a framework for governance design based on human capital value. This framework is built on various theory constructs that have addressed some relevant facets of the human capital dilemma while ignoring others. Employment relationships are complex and therefore a multi-theoretic framework focused on the governance and strategic management of human resources is needed. The proposed framework and associated predictions are illustrated in Figure (1).

Governance mechanisms that would support investments in human capital and leverage human assets in the creation of value and sustainable rents would balance the costs and benefits for both firms and employees. Thus, governance structures are expected to minimize the transactions costs associated with investing in firm-specific human capital for employees and provide the right incentives (both monetary and non-monetary) for such investments. Based on prior literatures and concepts illustrated in Fig. 1, we argue that governance structures that facilitate participative decision making (e.g., bottom-up approach to management) and more employee engagement and involvement at the each managerial and operational level, would lead to more alignment between the firm or organization goals and its employees and favor investments in specific human capital. Board representation by key employees could help represent

FIGURE1
CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES



employees' interests and concerns and participate in the strategic design of the firm's operations at the top (board level). This form of governance is not common in the US but is typical of two-tiered governance systems such as those in Germany and Japan (Blair 1995). To minimize agency problems related to asymmetric information between the firm and its employees particularly those who invest in firm-specific and tacit knowledge, incentives in the form of equity ownership, performance-based pay components, as well as other benefits (e.g., pension and post-retirement packages) will help mitigate both the potential opportunistic costs of investing in firm-specific knowledge and the agency costs of monitoring and bonding and ultimately raise the productivity, satisfaction and retention of the best employees. In this case, TCT, AT and labor markets theory all contribute to designing the optimal, efficient and most effective employment contracts (explicit as well as implicit). Furthermore, access to critical assets to be bundled with human and organizational capital is a necessary and sufficient condition for leveraging human capital (Rajan and Zingales 1998). By allowing their employees access to the critical production

resources and assets, the residual rights of control over these assets are effectively shared between employees and the firm. The revenues generated from the combined use of these production assets and the specific human capital associated with the use and deployment of these assets should lead to more efficient risk sharing and fair distribution of the rents. This would in turn help build more trusting relationships between the firm and its employees (for example, Apple and Google have highly specific assets and resources in terms of products, processes and services that are integrated and their executives and employees have a high incentive or pay-for-performance components in addition to flexible work arrangements and retention strategies). Thus, we formulate our third proposition 3 (a) as follows:

> *Proposition 3: a) Firms with governance mechanisms that support more participative decision making, employee board representation, incentive-based compensation, equity ownership, access to critical resources and assets, and more efficient allocation of the residual rights of control over operating decisions and assets, should lead to more stable and sustainable human and organizational capital-based competitive advantage.*

Capability-building strategies by companies is a dynamic and changing process where fast, innovative and flexible solutions have to be constantly devised and implemented to stay "ahead of the curve" and reap the benefits of first-mover and other competitive advantages. As the competitive advantage stems more and more from non-imitable and dynamically linked capabilities, of which specific human capital in the form of tacit knowledge and skills, organizational experience and memory combined with talent and social network-based relationships, companies relying on such intangible assets are faced with many challenges. We argue firms that are best positioned to take advantage of growth opportunities by leveraging their dynamic capabilities and managing their risks most efficiently and effectively will be able to sustain their human capital-based economic rents longer. Enterprise-wide risk management capabilities help identify, assess, implement and monitor risk mitigating strategies that threaten the achievement of strategic goals set by boards while also allowing for strategic risk taking by detecting growth and rent-generating opportunities. In this paper, we argue that strategic human resource management involves dynamic capability building that should be specific to the firm and hard to imitate following the resource-based view (Barney 1991). Such dynamic and specific human capital investments and capability building needs flexibility, speed and innovation support (i.e., real options context) where resources could be fully and quickly deployed or disposed of in a timely and efficient manner. Risk management with respect to strategic human resources would encompass the various phases of selecting, hiring, investing and retaining the best talent that is most organizationally aligned with the firm in the long-term. It will thus support a human capital-oriented governance structure as described in proposition 3 (a) above. Therefore, we formulate proposition 3 (b) as follows:

> *Proposition 3: b) Firms with higher organizational flexibility, dynamic and risk management capabilities will be able to generate and maintain higher economic rents over time.*

CONCLUDING REMARKS AND SUGGESTIONS FOR FUTURE RESEARCH

Human assets are increasingly recognized as the most important asset companies have. Yet, ownership and asymmetric information-related problems characterize this "elusive" asset and pose important dilemmas that need to be addressed before any suitable solutions are advanced (Coff 1997, Gottschalg and Zollo 2007). In the current paper, we argue that a governance-based approach where human capital investment and capability building are at its core elements should be followed to explicitly and systematically recognize and leverage this critical asset in the future. Our contributions in this paper are two-fold: First, we delineate the role that human assets play in prominent governance and firm theories in the strategy, organization and labor markets literatures. Such an analysis helps to highlight the various components of the human asset governance question which have been addressed by some theories

but neglected by others. For example, in TCT human capital has been approached both asset specificity and uncertainty dimensions with a focus on costs while in AT, asymmetric information, task programmability and team production input and output measurement , lead to a focus on compensation contracts and incentive compatible theoretical solutions. The second contribution of the current paper consists in the development of a set of testable propositions that address the creation, distribution and sustainability of human capital-based competitive advantages and the governance mechanisms needed to support them. Firms characterized by participative employee involvement in decision making, employee board representation, equity and incentive pay arrangements, and trust building relationships are assumed to be able to leverage their human capital (both of the specific and general types) and generate rents from its deployment. We also argue that firms that are best prepared to respond quickly and efficiently through their risk management capabilities to changes in the business environment. These will be able to innovate the most through the hiring, retaining and investing in their best and talented people to ensure a stable and sustainable rent-generation over time.

Some suggestions for future research include empirically testing the theoretical propositions advanced in this paper. For example, various firms with different human resource strategies could be examined to shed more light into the impact of human capital investments and capability building on the value of the firm. Also, a further investigation of how specific and general human capital (together or separately) contribute to firm value and how firms can leverage both types to generate rents is worthy of more research attention in the future. Moreover, governance structures that include more employee involvement and board representation could be compared to other systems where such representation does not exist (e.g., two-tiered vs. one-tiered governance systems). Finally, a thorough investigation is needed to understand how human capital interacts with other organizational assets and how its contribution to corporate success and rent-generating potential could be figured out by "unbundling" it. If complementary specialized cannot be unbundled from human capital, the governance structures that would balance and best manage these combinations will outperform their peers. Would more partnership-like governance structures dominate future business enterprises if human capital emerges as the single value generating assets? Would companies struggle to retain their best people? What does it take to build trust and long-term mutually beneficial work relationships between organizations and future generations of knowledge workers? Answers to such questions depend on how we perceive, account for, value and govern human assets now and in the future.

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