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Intellectual Capital, Slack Resources and Corporate Value: Empirical Analysis of a Moderating Effect Model

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Abstract: This paper choose Chinese high-tech listed companies as the samples to testify the slack resources' moderating role between intellectual capital and corporate value. The results based on hierarchical moderating regression (HMR) show that intellectual capital of high-tech listed companies not only has a significant influence on corporate value creation, but also has a significant impact on the perception and evaluation to corporate market value by capital market in China. Slack resources indeed have a significant moderating effect between intellectual capital and corporate value. It can significantly moderate the relationship between human capital, innovation capital and customer capital and corporate value. That is to say, slack resources not only can promote the elements of intellectual capital to create more value, but also improve value realization of intellectual capital on capital market. The more slack resources the firms have, the more significant and stronger of intellectual capital affecting enterprises value.

Keywords: Intellectual capital, Slack resources, corporate value

Resource-based view (RBV) suggests that Intellectual capital(IC), which has the features of valuable, rare, inimitable and irreplaceable, is the most important strategic resources^[1]. Intellectual capital controls the knowledge, experience, organization skills, customer relations and business process, which directly reflects the competitive advantage and even affects the investors' assessment and perception. Therefore, IC not only affects the outcome of value creation, but also affects the company evaluation from the capital market^[2]. But the existing researches on the relationship between Intellectual capital and corporate value have huge differences. Some studies significantly support RBV, but others find that there are no significant correlations between IC and corporate value.

In view of this, there maybe some moderating variable between IC and corporate value. We believe that the value creation of corporate resources will be realized only through the integration and interaction of resources. Resource integration and interaction not only create the new heterogeneity of resources, but also provide a guarantee for the sustainable competitive advantage. Therefore, this paper explores and verifies the relationship between IC(strategic resources), slack resources(basic resources) and their interaction to enterprise value in Chinese capital market conditions to find the real source of value creation and to provide theoretical and empirical support for resources integration and optimization, the formulation of sustainable competitive advantage, and enhancement of the corporate value.

1. LITERATURE REVIEW

As the strategic resource, IC and its contribution to enterprise value or performance has been studied in-depth by the academics and practitioners. Nick Bontis studied the correlations between IC elements and performance in 1998 and 2000 respectively. The studies found that human capital is the most important intellectual capital element; structure capital has a positive correlation with corporate performance^[3]. By using the financial value of 81 multinational companies and basing on the theory of RBS and stakeholder theory, Ahmed Riahi-Belkaoui(2003) examines the significant correlations between IC, persistent competitive

advantages and excess profit, which supported the philosophy of RBS^[4]. Bassi and Van Buren (1999) studied 500 U.S. companies, the results found that IC investment not only has a positive relationship with financial performance, but also can improve the competitive advantage^[5]. By using the data of 4254 listed companies from 1992-2002 in Taiwan, Chen et al.(2005) explored the relationship between IC and the future financial performance under an emerging capital market condition. The result shows that there is a significant correlation between IC and market value and the financial performance, and IC can be considered as an indicator of future financial performance^[6]. But the South African scholars Firer and Williams (2003) used 75 companies' sample in 2001 listed on the Johannesburg Stock Exchange market as the samples. Their empirical study reveals only corporate market value has a strong correlation with physical capital. They didn't find the relationship between IC and dependent variable^[7]. Shui(2006) used Taiwan 80 listed companies data in 2003, and found that IC has a positive relation with profitability and market value, but has a negative impact on productivity^[8]. In China Li jiaming et al (2004) found that human capital has a positive impact on performance, but not significantly^[9]. Fu Chuanrui (2007) re-examined the relationships between IC and company performance^[10]. The empirical results indicated that both human and physical capital have significant positive effects on firms' profitability.

Scholars pay more attention to the cause of the different conclusion, and academics begin to study their relationship in-depth. Sullivan (2006) proposed that companies must understand its internal and external situation to manage and extract the value of IC very well^[11]. Therefore, more detail studies considered their relationships under the External context. Hong Pew Tan et al.(2007) studied listed companies in Singapore. The result showed that the contribution of IC in service and financial sectors is less than in manufacturing industry and even less than in commercial trade industry^[12]. Li Dongwei et al. (2009) found that external environment can adjust the relationship between IC and performance by using the high-tech companies in China^[13]. Internal context focus on the direction and resource, which can be determined the strengths, weaknesses of company and its competition ability. We believe that enterprise resource is the main determining factor on its competitive advantage and competitiveness, and it also has an impact on IC value creation. And because the nature of IC is the strategic resources, so basing on the RBS we bring slack resource, which is basic resources that is in excess of actual needs within the organization for answering the environmental turbulence, to reveal the relationship between IC and corporate value. The paper tries to explore the relationship between basic resources and IC, then to verify the integration effects of enterprise resource on enterprise value, which will accurately explain the relationship of IC and corporate value.

2. RESEARCH FRAMEWORK AND HYPOTHESES

2.1 Research framework

In social science research, in order to make a generally accepted theoretical model for the specific situation, we often need to modify and expand the model. In this process, apart from increasing the number of forecast variables or modify the relationship between variables, the most common method is to expand the model boundary conditions or put the model in different contexts. From the perspective of the relationship between variables, the model's boundary condition refers to the predictive effects of one or some predictor variables, or its causal relationship with dependent variable, which produces a "moderator" variable concept. Sharma et al. (1981) defined "moderator" as a variable which can change the relation form and (or) strength of predictor and criterion variable. As a direction variable which can influence the relationship between an independent variable or predictor variable and a dependent variable or standard variable (Baron and Kenny, 1986). "Moderate" means reducing, and it seems that it just makes a relationship to the "small" change in direction. But in fact, whether to change the relationship or form or direction between two variables, the role of adjustment variables is two-way that both can enhance or weaken the strength and make the slope changing in positive and negative ways, and so

its role is a two-way adjustment not just to reduce.

In short, when the relationship of Y and X is the function of M, M is the moderator variable. That is to say, variable M influences the relation between Y and X. The moderating model is shown in figure 1.

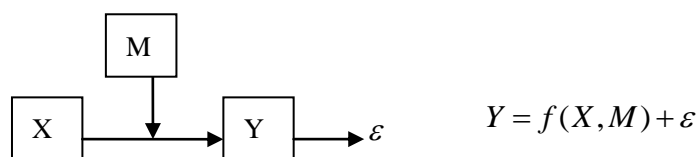


Figure 1. Moderating effects model

2.2 Research hypothesis

2.2.1 Fundamental assumption

Knowledge Management theory indicates that intellectual capital is referred as the knowledge resources which are transformed from organization knowledge in the process of production and management and can help organization to create their market value and to realize the existing assets value (Pablos, 2002; Alexander et al, 2004; Roland, et al., 2007). The concept of intellectual capital not only reflects its characteristics of knowledge resources, but also reflects its essence of value creation. Edvinsson(1997) classified IC into three elements: human capital, structure capital which further is divided into innovation capital and process capital and customer capital. His view has been widely accepted by the following researchers. In this paper, we adopt this view and divide IC into 4 dimensions: human capital, innovation capital, process capital and customer capital.

Human capital mainly refers to the knowledge, skill and experience of employees (Dimov and Shepherd, 2005). Staff knowledge and experience are valuable, rare, inimitable, irreplaceable strategy resources which can create competitive advantage and business performance. Human capital is not only a source of value creation, but a factor affect the realization of market value. Therefore, we come to the first basic assumption:

Hypothesis 1a: Human capital positively affects corporate value

Innovation capital is defined as innovation ability, innovation results and potential of researching and developing new products and service, including its innovation capability, potential ability of developing new product and service, innovation achievements. Many studies have shown innovation has positive effects on corporate value. Most empirical results show that the measurement of innovation focus on R&D spending, the number of patents (Bosworth et al., 2001), and all of these positively influences performance. Jui-Chi Wang (2008) considered that innovation capability is the key driving factor to a company value.

Hypothesis 1b: Innovation capital positively affects corporate value

Process capital refers to working process, expertise, business procedures, norms and information systems. These can help filter information and make the organization do the right decisions (Galbraith, 1977), to prevent the organization repeating the same mistakes (Garvin, 1993) and then enhance corporate value. So the process capital is one of the key driver elements of corporate value.

Hypothesis 1c: Process capital positively affects corporate value

Customer capital is a series of accumulated knowledge on customer and relations, which is embodied in business process, marketing channels and relationships. The knowledge value chain theory thinks that the ultimate target of innovation activities is customer. Customer is a prerequisite to achieve business value. Customer value is a key driver of business value. Only realizing the customer value, business value can be achieved. Pelham and Wilson(1996) showed that customer capital has a direct positive correlation with business performance.

Hypothesis 1d: Customer capital positively affects corporate value

2.2 Moderating role of slack resources

The dynamic capability concept of Teece et al. (1997) shows that enterprise sustainable competitive advantage comes from the ability to integrate resources. Sustainable competitive advantage can be achieved by each resource's value creation, but also be achieved by the ability to integrate different resources^[14]. Adams and Lamont (2003) proposed that slack resource is an important basic resource and is an implementation of strategy to promote business efficiency and effectiveness^[15]. Slack resource can supports innovation and change, enhances the ability of enterprise to adapt to the environment and long-term performance. Therefore, we believe that slack resource will inevitably have an impact on the value creation of IC from the perspective of resource integration. Bourgeois and Sigh (1983) define slack resource as available slack and potential slack^[16]. We accept this classification. Potential slack are those basic resources which can be used in the future. Available slack and potential slack can form the future capability and promote the creation and realization of IC elements.

2.2.1 Available Slack resources

Scholars believe that available slack resources can be used to enhance innovation ability, and then promote long-term performance (Mohr, 1969). Slack resources lead to ease the control (Nohria and Gulati, 1996), which makes managers have more discretion on the development of new projects. Thus, slack resources can promote the efficiency of human capital. Meanwhile, available slack reduces constrains of internal process, helps enterprises to build the environment of encouraging innovation to promote the value creation of innovation capital and process capital. Cyert and March (1963) proposed the most important role of available slack resources is supporting the testing of some new innovative projects in the uncertainty environment. Enterprises which have more available slack resources can make better strategy to responding its competitors. It helps company to invest in customer capital and build long-term customer relations. The empirical results show that slack not only can improve the organization structure, maintain organization harmony and reduce environment conflicts, but also can be an important catalyst to promote innovation and process change.

Hypothesis 2a: Available slack resources positively affect the relationship between human capital and corporate value

Hypothesis 2b: Available slack resources positively affect the relationship between innovation capital and corporate value

Hypothesis 2c: Available slack resources positively affect the relationship between process capital and corporate value

Hypothesis 2d: Available slack resources positively affect the relationship between customer capital and corporate value

2.2.2 Potential slack resources

Potential slack resources are those basic resources which can be used in the future. They can be transformed or re-used to obtain organization goals (George, 2005). For example, the potential slack on behalf of the using degree of the uncommitted resources, allows organizations to develop new strategies, such as developing a new product or enter a new market. Because of potential slack resources are used in crisis times, they can protect organizations' resources under the uncertainty and risk period, make managers support new projects. As the resources used in changing environment, supporters believe that potential slack plays an important role in the experiment of innovation strategy and innovative projects. Potential slack resources will promote the construction and investment of human capital, innovation capital, process capital and customer capital, so we must answer this question: how to use potential slack resources to promote the relationship between IC and corporate value to gain and consolidate competitive advantage. Thus, we assume:

Hypothesis 3a: Potential slack resources positively affect the relationship between human capital and corporate value

Hypothesis 3_b: Potential slack resources positively affect the relationship between innovation capital and corporate value

Hypothesis 3_c: Potential slack resources positively affect the relationship between process capital and corporate value

Hypothesis 3_d: Potential slack resources positively affect the relationship between customer capital and corporate value

In summary, we construct the moderating model is as follows:

$$Y = \beta_0 + \beta_1 X + \beta_2 XZ + \beta_3 Z + \varepsilon$$

Y: corporate value; X: IC; Z: slack resource; XZ: interaction of IC and slack resource.

3. RESEARCH METHOD

3.1 Sample selection

This paper selects high-tech firms as the sample. It will help us verify the contribution of IC to corporate value better. Samples need to meet the following criterion: Firstly, the high-tech enterprises must agree with the definition of the high-tech industry in China Ministry of Science. Secondly, the feature of main business has not changed during the study period. Thirdly, we exclude ST, missing values and abnormal value companies. Fourthly, we exclude the companies whose annual net profit is negative. Finally, we have selected 374 listed companies including electronic components manufacture (C51), instruments, cultural and office machinery (C78), medicine and biological products (C8), communications and related equipment manufacture (G81), computer and related equipment manufacture(G83), computer application services(G87) (2002-2004) . (This paper dose not exclude the companies both issue of A and B or H shares, but we just use A share value when calculate the companies' value). In this study IC and performance are chose at two time points T₀ and T₁. The data of IC elements and control variables is at T₀ (2002, 2003, 2004), and dependent variables data is at T₁(2003-2005, 2004-2006, 2005-2007, three years average).

3.2 Variable measurement

3.2.1 Dependent variable and independent variable measurement

Most measurement indicators of IC come from the existing literatures. The relevant variables measurement and definition are showed in table 1. The financial data comes from CCER database. The non-financial information comes from public companies' information.

Table 1. Measurement and definition of variables

Variables and measurement index	Definitions and notes	Previous studies support
Human capital(HC)		
HC1 (employees' value added)	value added / total number of employee	VA = OP + EC + I . OP:operating profit, EC:total staff remuneration, I:Interest cost
HC2 (employee productivity)	Net revenue/ total number of employee.	Tsan ,2002; Chen ,2004
HC3 (staff net profit)	net profit/ total number of employee	Brennan and Connell,2000;Tsan,2002;
HC4 (higher education staff ratio)	college employees /the total number of employees	Wiersema et al,1992; Bukh et al. ,2002
HC5 (average education level of staff)	The average education level of total employees. The staffs is divided into Master and above, university, college and the following, and given the weight of 3, 2,1and 0.	Bantel and Jackson,1989; Blau,1977; Wiersema, 1992
Innovation capital (INC)		
INC1 (R&D productivity)	R&D expenses / average total assets	new
INC2 (R&D expenditure)	Data comes from marketing expense and administration expense and so on. Also refer to the	Jui-Chi Wang, 2008; Edvinsson and Malone (1997), van Buren (1999), Hsieh (2000), Tsan

	cash flow statement in the "cash flow" project "R&D expenditure".	(2002) and Chen (2004)
INC3(the ratio of R&D personnel)	The number of R&D personnel/total number of employees.	Hummert,2004; Pao-long et. al,2004
INC4 (R&D intensity)	R&D expenses/net operating revenue	Meng-Yuh Cheng,2008; Dzinkowski 2000
Process capital(PC)		
PC1	inventory turnover	Meng-Yuh Cheng,Jer-Yan Lin et al., 2008
PC2	current asset turnover	Chiung-Ju Liang, 2008; Dzinkowski,2000
PC3	accounts receivable turnover	Meng-Yuh Cheng,Jer-Yan Lin et al., 2008
PC4	Management expense/ net operating revenue	Edvinssonand Malone,1997; Chen 2004
Customer capital(CC)		
CC1 (growth rate)	Growth rate of operating revenue	ASTD,1999; Brennan and Connell,2000; Tsan,2002; Marr and Adams 2004
CC2(marketing expense)	marketing expense	Wen-Ying Wang et al., 2005
CC3(marketing expense ratio)	marketing expense/ net sales	Wen-Ying Wang et al., 2005
CC4 (advertising expenses)	Data comes from the fees to be apportioned, drawing expense in advance, marketing expense, administration cost.	Tsan (2002), Wu (2003) and Chen (2004); Wen-Ying Wang and Chingfu Chang, 2005
Corporate value		
Intrinsic value (V1)	The value measurement at T ₁	
ROA	net income/ average total assets	McGee, and Dowling, 1994
ROE	net income/ average shareholders' equity	Keat and Hitt,1988;
Hidden value(V2)	The value measurement at T ₁	
MV/BV	Market value/Common stock book value	Dess et al.,2003; Lehn and Makhija,1996;
Tobin's	Market value/Replacement cost	Dzinkowski,2000; Chun-Yao Tseng. 2005,

3.2.2 Moderating variables measurement

In order to make the results available and comparable, foreign scholars generally use the indirect financial indicator to measure slack resources.

Available Slack resources are those basic resources which have not been put to the organization or specific program use. Bruniley(1991) used the cash turnover and David and Stout (1992) use the cash flow to measure available slack resources. Singh (1986) used cash-marketable securities/current liabilities and Hambrick and D'Aveni(1988) used assets liabilities ratio to measure the non-absorbed slack. When to measure available slack resources, we should pay attention to it feature which can be used in specific procedures and future. So we chose the net cash flow and ratio of net cash flow to total assets to measure it.

Potential slack resources are those basic resources which can be used in the future. In order to obtain organization goals they can be transformed or re-used. Singh (1986) used the working capital/ sales ratio to measure the absorbed slack.. Bruniley(1991) used the assets liabilities ratio. Jiang Chunyan and Zhao Shuming(2004) used turnover rate and assets liabilities ratio to measure the potential slack resources. According to its definition we choose the turnover rate and quick ratio and debt/ equity to measure potential slack resource.

4 EMPRICAL RESULTS

4.1 Factor analysis

4.1.1 Factor analysis of IC measurement

We use the exploratory factor analysis to test the validity of the IC elements. First, we analyze the correlation of IC elements according to the default precondition. The result shows that the relation efficient of "growth rate of revenue" is small and not significant which exceeds our expectation, because this item is often

used by scholars to measure customer capital in the existing literatures. In order to find the reasons, we study our sample. We find that 19.9% companies' growth rate of revenue is negative value, 1% companies' is 0. From the descriptive statistic results we know that the "growth rate of revenue" is not normal distribution. And from the annual reports, we learn that the samples also develop other business in this studying period except the main industry. Although the main business is not change, the diversification strategy has certain impact on the main business. So we think the growth rate of revenue can not stand for the development of companies and the main business customer knowledge and we removed the growth rate of revenue. We use principal component analysis and orthogonal factorization method to analyze other factors, and the results are in table 2.

The KMO value is 0.660, larger than 0.5, Bartlett's is 5466.165, and $P < 0.01$, which indicate the data is suitable for factor analysis. Variance ratio of the common factors shows that all information extraction ratio is more than 75% except management expense ratio(0.616). The cumulative contribution rate of the four factors is 67.513%. In general, the rate over 65% is better. The four factors can replace 16 variables to reflect the characteristics of IC elements. Thus, we will use the factor scores to testing the hypothesis of the moderating effect model.

Table 2. Exploratory factor analysis

Item Code	Factor1	Factor2	Factor3	Factor4
INC1	.919			
INC4	.900			
INC3	.872			
HC4	.636			
HC5	.608			
INC2	.518			
HC1		.990		
HC2		.982		
HC3		.970		
PC2			.840	
PC3			.666	
PC1			.580	
PC4			-.545	
CC2				.834
CC3				.786
CC4				.767

From the table 2, we know that the R&D productivity, R&D intensity, the proportion of R&D employee, higher education staff ratio and education level can be classified as the first factor, which can better reflect the company's innovation ability and potential innovation as innovation capital. We think in high-tech industry, the "level of education" and the "higher education staff ratio" are more relevant. They both determine the knowledge accumulation and innovation ideas and sense. Therefore, we accept the factor analysis results. Value added per employee, employee productivity and employee net profit can be listed as the second factor. Current asset turnover, accounts receivable turnover, inventory turnover and management expense ratio can represent process capital. Selling cost, the ratio of expenses to sale and the ad-rate can be on the behalf of customer capital.

4.1.2 Factor analysis of dependent variable

We do factor analysis on dependent variable. KMO value is 0.561, the extraction rate of common factors is more than 85%, and the accumulate explanation of the first two factors is 93.352%. The Bartlett's is 1071.705($P < 0.01$). The results show that the loading values of ROA and ROE on factor 1 are 0.985 and 0.949, representing the internal value. The loading values of Tobin's Q and MV/BV on factor 2 are 0.936 and 0.929, reflecting the hidden value. From the above information, the indicators of corporate value are reasonable. The four indicators can represent the feature of dependent variable. The loading values are over 0.9 and the new two factors can represent the 4 variables to reflect the corporate value.

4.1.3 Factor analysis of slack resources

This paper uses the principal component analysis and orthogonal rotation methods to extract the factors' characteristic value more than 1. The KMO value is 0.6230($P < 0.01$). Variance ratio of the common factors shows that all extraction ratios are more than 75%. The cumulative contribution rate of the two factors is 77.804%. The results show that the loading value of current ratio, quick ratio and debt equity ratio on factor 1 are 0.949, 0.947 and -0.685 respectively. Net cash flow and the net cash flow in the proportion of total assets on factor 2 are 0.895 and 0.850. From the above information, it can be concluded that the new two factors can represent the five variables to response the slack resources.

4.2 Hierarchical regression result

According to research method of Slevin and Covin(1997), during the analysis of regulation, we need to predict the structure of variables and or standardize the moderating variables. Basing on the analysis, we adopt the standardization methods of the various elements suggested by Hou Jietai(2003,2004). They proposed to use the factor scores of endogenous variables to do moderating regression. Therefore, we put the factor scores into the regression model, and use the VIFs greater than 5 to ensure there is no multicollinearity.

We use hierarchical regression analysis and put control variable, IC, moderating variables, interaction of IC and moderating variables into the equation orderly. The results are in table 3.

Table 3. Regression result

variable	Model 1		Model 2		Model 3	
	Intrinsic value Standard coefficient	Hidden value Standard coefficient	Intrinsic value Standard coefficient	Hidden value Standard coefficient	Intrinsic value Standard coefficient	Hidden value Standard coefficient
T ₀ Intrinsic value/ T ₀ Hidden value	.588*** (13.271)	.167*** (3.235)	.583*** (12.716)	.160*** (3.131)	.597** (12.599)	.187*** (3.605)
Human capital	.089** (2.146)	.075* (1.487)	.055 (1.356)	.020 (.391)	-.120 (-.824)	.647*** (3.671)
Innovation capital	.068* (1.631)	.167*** (3.299)	.012 (.168)	.131* (2.549)	.012 (.243)	.160** (2.645)
Process capital	.012 (.296)	-.163*** (-3.239)	.038 (.843)	-.105** (-1.997)	.061 (1.251)	-.150** (-2.622)
Customer capital	.015 (.351)	.008 (.166)	.082* (1.987)	-.011 (-.220)	.059 (1.333)	.029 (.561)
PSLACK			.102** (2.276)	.129* (2.424)	.062 (.920)	.231** (2.948)
ASLACK			-.006 (-.145)	.085* (1.706)	.009 (.193)	.087* (1.695)
HC×PSLACK					.225* (1.911)	.454*** (3.203)
IC×PSLACK					.128* (2.125)	.142* (1.929)

PC×PSLACK					.046 (.725)	-.089 (-1.178)
CC×PSLACK					-.043 (-.691)	.125* (1.683)
HC×ASLACK					-.127 (-.947)	.611*** (3.767)
IC×ASLACK					-.054 (-1.241)	-.063 (-1.168)
PC×ASLACK					-.022 (-.526)	-.042 (-.818)
CC×ASLACK					-.043 (-.984)	.053 (1.023)
R ²	.390	.098	.399	.106	.416	.148
Adjusted R ²	.382	.086	.387	.089	.392	.112
F	46.164***	6.703**	34.682***	6.205***	17.000***	4.136** *

***、**、*represent 1%, 5% and 10% significance level, t values in brackets.

Table 3 shows that model 1 includes control variable and IC elements. The equations are significant statistically ($F=46.164$, $P<0.01$; $F=6.703$, $P<0.05$). The results show that all IC elements significantly affect the intrinsic value. Human capital and innovation capital significantly increase both intrinsic and hidden value. So the hypothesis 1a and hypothesis 1b are supported and validated. Customer capital has positive impact on corporate value, but not significantly. Process capital significantly affects hidden value but to the opposite direction we expected. Model 2 includes the moderating variables. The equations are significant statistically ($F=34.628$, $P<0.01$; $F=6.205$, $P<0.05$). Adjusted R^2 increases a little (Δ Adjusted $R^2=0.005$, Δ Adjusted $R^2=0.003$). Potential slack resources has a positive effect on intrinsic value ($P<0.1$). Both potential slack resources and available slack resources have significant impacts on hidden value ($P<0.1$).

Model 3 put the interaction of slack resources and IC into regression. The results not only show that the equations are significant statistically ($F=17.000$, $P<0.01$; $F=4.136$, $P<0.05$). The goodness of fit is significantly improved (Δ Adjusted $R^2=0.005$, Δ Adjusted $R^2=0.023$) which indicate that the interactions of slack resources and IC play an significant moderating role on corporate value. Comparing model 2 with model 3 shows that slack resources not only significantly improve corporate value, but also moderate the relationship between IC and corporate value. When intrinsic value is as dependent variable, potential slack moderates significantly on the relationship between human capital, innovation capital and corporate value ($\beta=0.225$, $P<0.1$, $\beta=0.128$, $P<0.1$). That is to say potential slack resources can improve the contribution of human capital and innovation capital to corporate value and the future profitability. The more slack resources enterprises have, the more contribution of human capital and innovation capital do to corporate value. When the hidden value is as dependent value, potential slack moderate significantly on the relationship between human capital, innovation capital, customer capital and corporate value ($\beta=0.454$, $P<0.01$, $\beta=0.142$, $P<0.1$, $\beta=0.125$, $P<0.1$). The more slack resources high-tech firms have, the more contribution of human capital, innovation capital and customer capital do to corporate value. Available slack resources are significantly moderating the relationship between human capital and hidden value ($\beta=0.611$, $P<0.01$) which means available slack resources will promote value creation and realization of human capital. The results above show that in the emerging capital market in china, the investors tend to invest in the high-tech companies who have more human capital, innovation capital and customer capital. Investors also tend to give these companies higher values and evaluation. Therefore, hypothesis 2a, hypothesis 2b, hypothesis 2d, hypothesis 3a and hypothesis 3b are supported and validated. The result also supports the view that resource integration will enhance higher corporate value.

5. CONCLUSION AND IMPLICATION

The empirical results show that human capital and Innovation capital have positive contributions on corporate value and are important driving factors of corporate intrinsic value. Innovation capital not only is the key to corporate value, but also is the most important factor to predict the market value of high-tech companies. The results demonstrate that the concept of human capital and innovation capital are accepted by investors. They tend to invest on the firms which have more human capital and innovation abilities. Therefore, we suggest that management should pay more attention on human capital and innovation capital.

In particular, process capital has a significant negative impact on corporate value. It erodes the hidden value of high-tech companies. Hidden value is the differences between book value and market value. Process capital erosion reflects the underestimate corporate value by market. The first reason can be attributed to investors preferring to short-term profit. As the behaviors of pursuing short-term profit, investors tend to regard the investment on process capital as "cost" or "expenditure", not as "capital". The behaviors and ideas of investors underestimate the market value of high-tech enterprises. The second reason is that accounting standards treat process capital investment as expense. The greater investments on process capital are, the greater the current expense of the firms have, which reduces the current profitability. The corporate value is significantly affected by the profitability which results in corporate value being underestimated. Although the new accounting standards being implemented from January 1, 2007, the new standard does not fundamentally solve the issue of IC underestimated (Li Dongwei, 2009).

Slack resource is a semi-moderating variable. It not only has a significant impact on corporate value, but also moderates the relationship between IC and corporate value. Management should pay more attention to use basic resources effectively. Potential slack has a positive effect on the relationship between human capital, innovation capital and corporate value which means the more slack resources companies have, the more investment on human capital and innovation capital will be and this could improve the value creation of human capital and innovation capital so as to enhance the efficiency and effectiveness of high-tech enterprises. Available slack resources can significantly moderate the relationship of human capital and hidden value. The results of moderating model show that enterprises should not only strengthen the applying and management of IC and slack resources, but also emphasize on the integration and interaction of the total resources to corporate value. Only in this way, the firms can really enhance corporate value.

In this study, there are still many deficiencies. Firstly we directly use the information and data of the high-tech industry. The secondary data itself may have some limitations that will influence the results. Second, the measurement of slack resources and IC elements may lead to conclusions of this paper have differences with the existing research findings.

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