St. Petersburg University
Graduate School of Management

WORKING PAPER

K. V. Krotov, R.N. Germain

A CONTINGENCY PERSPECTIVE ON CENTRALIZATION OF SUPPLY CHAIN DECISION-MAKING AND ITS ROLE IN THE TRANSFORMATION OF PROCESS R&D INTO FINANCIAL PERFORMANCE

 # 4 (E)–2011

Saint Petersburg
2011

K.V. Krotov, R.N. Germain. A Contingency Perspective on Centralization of Supply Chain Decision-making and its Role in the Transformation of Process R&D into Financial Performance**.** Working paper. #4 (E)–2011. Graduate School of Management, St. Petersburg State University: SPb, 2011.

Keywords and phrases: centralization of supply chain, contingency perspective

Abstract: The research examines whether centralized supply chain decision-making within the firm plays a role in how the firm transforms investments in process research and development (R&D) into financial performance. This transformation includes the process investment – financial performance chain, which consists of process R&D funds, applied supply chain knowledge, supply chain process variance, and financial performance. In addition, the model includes production technology routineness, size, and integration. The results, based on a sample of 204 manufacturers operating in the United States, suggest that centralization cleaves the process investment – financial performance chain at the connection of supply chain process variance and financial performance. The net effect is that firm scale, production technology routineness, integration, and process R&D investment predict financial performance only when supply chain decision-making is decentralized within the firm. Firm scale, production continuity, integration, and process R&D investment confer no performance advantage in centralized firms.

Konstantin V. Krotov — Senior Lecturer, Graduate School of Management, St. Petersburg University

Richard N. Germain – PhD, Professor, Graduate School of Management, St. Petersburg University, EBS University for Economics and Law

e-mail :
Krotov@gsom.pu.ru
RGermain@gsom.pu.ru

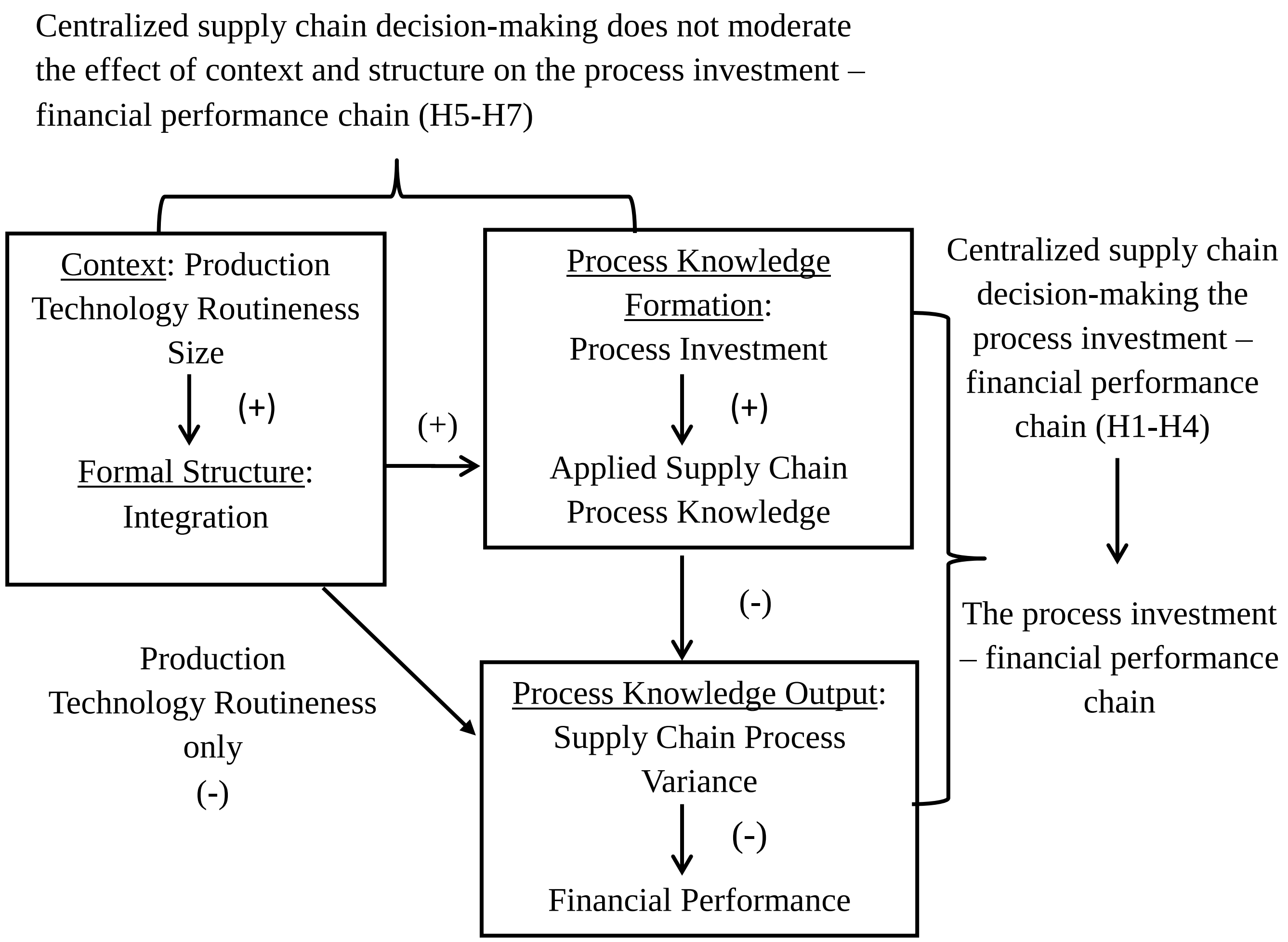
Contents

Introduction

Research and development (R&D) receives considerable attention from many sources. Consultants have announced that the spring 2011 net balance of firms expecting to increase their R&D budget was about 25% (KPMG 2011). Policy makers directly fund R&D and enact tax stimuli due to an impact on firm and national competitive advantage (Grueber and Studt 2009). Academic researchers have studied R&D expenditures and patents and their relationships with performance (DeCarolis and Deeds 1991). A large number of case studies have appeared on the management of R&D processes (e.g., Schiele 2010). Academicians from marketing (Calantone, Harmancioglu, and Dröge 2010), economics (Quatrao 2010), strategic management (Benner and Tushman (2002), and innovation (Enkel and Gassmann 2010) have all contributed insight, often with different tools and from different perspectives. With varying emphasis and depending upon the academic discipline, researchers have studied two broad types of investments and innovation: (1) process-based, which leads to efficiency and productivity gains and subsequently lower cost; and (2) product-based which associates with product performance and higher price (Evangelista and Vezzani (2010).

The purpose of our research is to provide insight into R&D from the supply chain perspective. We theorize the existence of and test what we label the process investment – financial performance chain that involves process investment or intensity (Cohen and Klepper 1996), supply chain knowledge (Hult, Ketchen, and Arrfelt 2007), process variance (Schmenner and Swink 1998), and financial performance (Miller 1991). We draw upon various theories and outlooks to support the effects hypothesized in Figure 1, including the theory of swift, even flow (Schmenner and Swink 1998), contingency theory (Woodward 1964; Miller et al. 1991) and knowledge management theory (Roth 1996). A critical contribution of the research involves the role of centralized decision-making over supply chain issues on the process investment – financial performance chain. Centralization, a dimension of formal structure, has been extensively studied in relation to other dimensions of structure (Walton 2005) and in relation to market orientation (Kirca, Jayachandran, and Beardon 2005), buying centers (Lewin and Donthu 2005), trust in channels of distribution (Greyskens, Steenkamp, and Kumar 1998), innovation adoption (Damanpour 1991), and production technology routineness (Miller et al. 1991). These meta-analysis typically summarize centralization main effects, however, very few studies model the interactive or moderating effect of centralization. Given the volume of work on process and product R&D, it is surprising that no studies have modeled the moderating effect, let alone the direct effect, of supply chain centralization in relation to process investment. We propose that centralized supply chain decision-making weakens or cleaves the process investment – financial performance chain, thereby reducing the potency of process intensity in affecting performance. We include three additional variables: production technology routineness and size – context variables (Khandwalla 1974); and integration – a second dimension of formal structure (Germain and Iyer 2006). In addition to providing greater theoretical breadth, we propose that the moderation effect of supply chain centralized decision-making is not universal. The relationship of production technology routineness, size, and integration with one another and with the process investment – financial performance chain is not expected to be moderated by supply chain centralization. From a managerial perspective, the research is intended to identify a condition under which the effect of process investment may not be transmitted to financial performance. This would allow managers to better dictate directed steps for performance improvement.

Figure 1: Theoretical Model



1. Theory

1.1. Decentralization

The pattern and distribution of activities within a firm are in measure reflected by its formal structure, three dimensions having received the most attention. First, centralization refers to the agglomeration of decision rights within upper levels of the firm. Second, formalization refers to rule specification along with the presence of written policies and procedures. Specialization, the third dimension, reflects task subdivision. It is closely linked to horizontal differentiation or the extent to which units, groups, or departments are formed. Due to administrative streamlining and limits on spans of control, units congregate around individuals performing similar specialized tasks. These elements of formal structure are interconnected into patterns. A meta-analysis showed that decentralization associates with vertical differentiation (or the number of layers), task specialization, and horizontal differentiation (Walton 2005). Formalization is not related to decentralization. In general, decentralization shows the weakest link to the remaining elements of formal structure. The work of Walton (2005) shows a persistent pattern across time: that is, newer studies of firms which are more likely to uncover lean, flat structures show no diminution of effects. Analysis of the task and activity patterns has been supplemented by the inclusion of integration, defined as horizontal communication (Miller 1991). Integration as a coordinative mechanism may offset centralization.

During the 1960s, researchers shifted from analyzing the Weber (1946) model of bureaucracy in isolation to analyzing formal structure antecedents such as uncertainty (Burns and Stalker 1961) and production technology (Woodward 1965) and outcomes, especially performance (Miller 1991). For example, a meta-analysis of production technology routineness (Miller et al. 1991) showed positive relationships with centralization (due to simplified coordination needs and fewer novel decisions), formalization (rule specification is simplified when fewer novel decisions are made), and specialization (due to task repetitiveness). Other meta-analyses showed that centralization inversely predicts organizational trust in channels of distribution (Greyskens, Steenkamp, and Kumar 1998) and innovation adoption (Damanpour 1991).

1.2. The process investment – financial performance chain and the role of centralization

As observed in Figure 1, the first step in the process investment – financial performance chain is process investment. The firm invests capital in process R&D to ultimately generate better cost or service positions. The second step in the chain is the application of knowledge. The research focuses on applied supply chain process knowledge and it is quite clear that not all process R&D is applied to supply chain processes. Other processes include those related to finance, marketing, quality, and core production processes (as opposed to the better management of inventory flows through production processes). Applied supply chain knowledge bridges the gap between capital investment and supply chain process outcomes. The latter may be thought of as measurable outcomes. Again, there are many different sets or types of measurable outcomes that could be affected by applied supply chain knowledge including supply chain functional cost, service levels, productivity, speed, and flexibility. We study one particular type of supply chain output – namely, supply chain process variation. Knowledge or understanding is synonymous with reduced variance or control: e.g., "process variance and knowledge related to any single capability co-varies with the others" (Kristal, Huang, and Schroeder 2010, p. 908). These sorts of statements are often made in reference to a narrow piece of knowledge and a single process. For example, the higher level of knowledge and its application about a product trait and how a machine and individuals influence them, the lower the measureable variance in the product trait. In the research, we extend this by suggesting that applied supply chain process knowledge at the supply chain level is connected to process variance at the supply chain level. Specifically, the higher the applied supply chain knowledge in demand pull systems, shared production planning with suppliers and customers, and cellular plant layout (all connected to just-in-time or JIT), the lower the expected variance in lead times and throughput rates. Finally, the theory of swift, even flow provides the basis for relating supply chain process variation to financial performance (Schmenner and Swink 1998). A process undertaken in a more timely fashion (swiftly) or in a more consistent fashion (evenly) will reduce cost. For example, lower lead time variance reduces inventory safety stock levels and a more consistent throughput rate reduces idle time and overtime hours. We model variance at the supply chain level and performance in terms of overall financial performance of the firm. As noted by Benner and Tushman (2002, p. 676), "the promise of process management is that focusing on variance reduction and increased process control will drive both speed and organizational efficiency." The research provides a more finely grained insight into process management in relation to the supply chain function: the process investment – financial performance chain starts with process investment and proceeds through applied supply chain knowledge, supply chain process variance, and finally to financial performance.

1.3. Centralization and the process investment – financial performance chain

A critical consideration in the centralization – decentralization debate is the need to balance control against adaptation (Alonos, Dessien, and Matouschek 2008). In the decentralized firm, local decisions are made by managers possessing relevant information. However, local decisions need to be supplemented by lateral communication to ensure that functional and/or divisional managers are aware of decisions made by others. Decisions made by functional managers interact with and may possess unseen consequences for other functions. In the centralized firm, communication is vertical as information is passed from those who have relevant information to those with decision-making rights. But information when passed upward in the hierarchy will be subject to distortion and hoarding. Information hoarding and distortion occur because of the "unwillingness of individuals…to share information for fear of making themselves redundant" (Teece 2000, p.39). Mid- and lower-level managers are not empowered in a centralized firm, reducing local adaptation and possible response times, especially important factors when uncertainty is prevalent (Burns and Stalker 1961). Furthermore, centralization may over burden senior executives especially when complex decisions require extensive information. If centralization is not accompanied by lateral collaboration and communication, then pockets of knowledge and information emerge that are unable to learn from one another. In general, the decentralized mode is preferred as the managerial cost of information distortion is outweighed by control loss, especially in dynamic environments.

One exception to the observation that centralization has not been studied in the R&D domain is found in the work of Argyres and Silverman (2004). In a multi-divisional firm, the central consolidation of R&D into a single unit has several benefits: R&D (1) has greater long term impact; (2) crosses a larger number of scientific areas; and (3) leads to more internalization of innovation developed outside the firm. Centralized decision-making at headquarters over the R&D budget, however, interacts with the central consolidation of the R&D function in accentuating some benefits. This research did not examine the centralization of functions other than R&D that are affected by process investment and that would eventually be responsible for translating process investment in performance improvement.

Centralized supply chain decision-making reduces local adaptation by mid-level supply chain managers. This singular feature disrupts connectivity in the process investment – financial performance chain. When supply chain knowledge is applied at the directive of senior managers, mid-level managers may be unable to adapt the knowledge to their local situation. For example, the specific details of shared production planning (e.g., timing, information) with suppliers varies significantly across manufacturing facilities operated by the same buyer, even when the same supplier is involved. In a centralized firm, specific supply chain process variances may be targeted for reduction by senior managers. But the reduction may not influence financial performance because the wrong processes were targeted due to information distortion. In a decentralized firm, local adaptation increase the likelihood that empowered managers select the appropriate processes for variance reduction in terms of their impact on financial performance. Accordingly, the following hypotheses are offered.

H1: The positive effect of process investment on applied supply chain process knowledge is stronger when supply chain-decision making is decentralized as opposed to centralized.

H2: The inverse effect of applied supply chain process knowledge on supply chain process variance is stronger when supply chain decision-making is decentralized as opposed to centralized.

H3: The inverse effect of supply chain process variance on financial performance is stronger when supply chain decision-making is decentralized as opposed to centralized

1.4. The role of production technology routineness, size, and integration

The research models production technology routineness, size, and integration to provide a more complete understanding of contingency effects and to illustrate that centralized supply chain decision-making does not moderate the effect of context (i.e., production technology routineness and size) and integration on the process investment – financial performance chain. Modeling integration is important as it may counter the presumed negative effects of centralization and is a necessary coordination mechanism in a decentralized firm. Supply chain researchers have become particularly interested in integration, have extended the concept to include lateral communication up and downstream in a supply chain, and demonstrated connections to performance (Germain and Iyer 2006; Vickery et al. 2003). Production technology routineness refers to the extent to which the manufacturing technology of the firm involves unvarying or regular procedures. Production continuity increases from custom production of one unit at a time to continuous production technology, with small and large batch and mass assembly as intermediate types. Production technology routineness should associate with integration due to simplified coordination needs. Both production technology routineness and integration should predict process investment. The more repetitive a set of processes and the more that the work flow is integrated, the greater the ability to spread an improved process over a larger number of repetitions of an activity. The investment is spread over a larger scale, thereby creating a scale effect. Production routineness should directly affect supply chain process variance: “repetition through routines reduces not only the time to carry out the activity, but also reduces the variance in performance of the routine” (Benner and Tushman 2002, p. 680). Integration should associate with process investment and applied supply chain process knowledge. Cross-functional coordination eliminates disparate pockets of knowledge and creates a more unified understanding of objectives, capabilities, and functional plans and knowledge. Integrative cohesiveness and linked functional knowledge should enhance awareness that process investment and knowledge application have firm-wide as well as functional implications. Larger firms are typically more formalized, decentralized, integrated, and specialized (Miller 1991). In the research, H4 through H9, which express these sentiments, are universal in that centralized supply chain decision-making is not expected to moderate the relationships.

H4: Production technology routineness and integration associate positively.

H5: Production technology routineness and process investment associate positively.

H6: Production technology routineness and supply chain process variance associate positively

H7: Size and integration associate positively.

H8: Integration and process investment associate positively.

H9: Integration and applied supply chain process knowledge associate positively.

2. Method

A random selection of 402 members from the Institute of Supply Management manufacturers "executive list," which consisted of 1264 contacts, resulted in 210 returned surveys, of which 204 were usable. Potential respondents were contacted by telephone to secure participation and verify key informant status. In 78 cases, a second respondent was identified by referral and 17 completed surveys were obtained. The response rate for firms is thus 52%=210/402. The mean for all items was taken across the 17 instances where two respondents were obtained per firm. Two two-digit SIC industry distribution is provided in Table 1 under the" total" column. The "other" category was created for the purpose of conducting a χ^2 test explained in a later section. As seen there, the most common industrial group is chemicals (16.2%), followed by fabricated metal products (10.3%). The most common respondent title level was director (66%), followed by manager (16%), and vice-president (14%) and the most common respondent functional area was purchasing (72%), followed by materials management (10%). Average annual sales was $1.406 billion (range of $1.25 million and $42 billion) and the average number of employees was 4,573 (ranging from 15 to 122,000). Tests of late versus early respondents were conducted and indicated no difficulties. All sampled firms operated in the United States.

Table 1: Industry Distributions by Centralization Group

Industry (2-digit SIC)	n (percentage of total or within group)		
	Sample	Centralized Group	Decentralized Group
20: Food	17 (8.3)	8 (7.9)	9 (8.7)
28: Chemicals	33 (16.2)	17 (16.8)	16 (15.4)
30: Rubber and plastics	17 (8.3)	11 (10.9)	6 (5.8)
34: Fabricated metal products	21 (10.3)	12 (11.9)	9 (8.7)
35: Industrial machinery	17 (8.3)	6 (5.9)	11 (10.6)
36: Electronics and electrical equipment	14 (6.9)	5 (5.0)	9 (8.7)
39: Miscellaneous	12 (5.9)	5 (5.0)	7 (6.7)
Other 2-digit SIC categories	73 (35.8)	36 (35.6)	37 (35.6)
Total	204	100	104

χ^2=4.872; df=7; p>.10

2.1. Scaling

The scales for centralization, integration, and production technology routineness came from established sources. Decentralization of the logistics function was measured using a slightly modified version of the Miller and Dröge (1986) scale. The scale endpoints were “1=the board of directors” and “7=operatives at the shop level.” Intermediate scale points were labeled with specific organizational levels: e.g., “4=divisional or functional manager.” The specific items were developed for the research to reflect supply chain decisions. A total of nine items were in the scale including decisions over: distribution service levels; the selection of suppliers; production scheduling; inventory planning; and factory / warehouse location planning. The scale displayed satisfactory reliability (α=.783). Production technology routineness was measured using the scale developed by Khandwalla (1974). Low values represent job shop production methods while higher values successively represent small batch, large batch, mass production, and continuous process technologies. Integration and financial performance were measured by the Miller (1991) scales. For integration, 7-point scales anchored by “1=rarely used” and “7=frequently used” were used to assess interdepartmental committees, cross-functional teams, and cross-functional liaison personnel. Financial performance was measured on 7-point scales (1=”well below industry average”; 7=”well above industry average”) for average ROI, average profit, and profit growth over the prior three year period. For process investment, we asked respondents on an open-ended scale the percent of revenue spent on process R&D. This is similar to the common scale for measuring new product R&D intensity (DeCarolis and Deeds 1999) and the scale has the advantage of normalizing for business size. The applied supply chain process knowledge scale was developed for the research. On the survey, knowledge was defined as “understanding a phenomenon” and respondents were asked to rate the level of knowledge applied in five areas: demand-pull systems; cellular plant layout; Kanban support systems; information from customers on their future production plans; and information provided to suppliers to enable integration of their plans with those of the respondent firm. The items reflect internal processes (e.g., demand-pull support) that are often treated as elements of JIT. We specifically omitted applied product and quality knowledge processes that would reflect a total quality management approach (TQM). While TQM and JIT are often treated as a comprehensive strategic thrust developed regardless of competitive priorities (Roth 1996; Sakakibara et al. 1997), we focus on JIT-related applied process knowledge it is conceptually linked to supply chain process variance (i.e., JIT as a variance reduction strategy). The final scale, supply chain process variance, is also original to the research. Four items were measured on 7-point scales with endpoints of “1=always the same, very consistent, low variance” and “7=rarely the same, very inconsistent, high variance” (Germain, Claycomb, and Dröge 2008). The items consisted of lead time to customers, lead time from suppliers, internal factory machine speeds, and daily production output rate.

2.2. Grouping and validity analysis

The sample was grouped on the median split of the nine centralization items (median = 3.95) with 100 and 104 firms in the centralized and decentralized group, respectively. A χ^2 test revealed that the industry distributions are similar across groups (see Table 1). The mean decentralization in the centralized group equals 3.52 and in the decentralized group equals 4.43. This suggests that decisions in the decentralized group are made on average below the level of the divisional or functional manager while decisions in centralized group are made above the level of divisional or functional manager.

Given our modeling choice of two-group SEM (Jöreskog and Sörbom 1993), the next step is to examine various confirmatory factor analysis (CFA) models to assess metric invariance (Hair et al. 2006), the results of which are provided in Table 2. In the baseline CFA, factor loadings, error variances, and the correlation between latent variables were estimated freely in each group (χ^2=299.640; df=234). In the subsequent model, the error variances were constrained to equality across groups (χ^2=325.129; df=249). However, fixing the error variances to equality across groups led to a significant loss of model fit ($\Delta\chi^2$=25.489; Δdf=15; $p<.01$). We then fixed each error variance one-at-a-time and determined that the problem existed with the first financial performance item. When the test of error variance equivalency was repeated while allowing the error variance of this item to remain free across groups, the $\Delta\chi^2$ test revealed error variance equivalency across groups. The freeing of this one error variance across groups is the only empirical caveat in the two-group SEM modeling process. In the next CFA, factor loadings and error variances were declared invariant across groups. The non-significance of the $\Delta\chi^2$=24.210 (Δdf=32; $p>.10$) indicates that, with the one exception, metric invariance is present.

Table 2: Testing Error Variance and Loading Equivalence Across Groups

CFA Model (and constraints)	χ^2(df)	$\Delta\chi^2$ (Δdf)
Baseline model: Error variance and loadings free across groups	299.640 (234)	
Error variances constrained equal across groups	325.129 (249)	25.489a (15)
Error variances constrained equal across groups: Except performance item 1	310.925 (248)	11.285 (14)
Final CFA: Error variances (except performance item 1) and loadings equal across groups	323.850 (266)	24.210 (32)

a, p<.01

Table 3: CFA Model Results

Latent variable	Items	λ	ρ
Production technology routineness	Weighted production technology scale	.983	n.a.
Size	Natural logarithm of number of employees	.982	n.a.
Integration	Interdepartmental committees set up to allow departments to engage in joint decision-making	.777	.811
	Temporary cross-functional teams set up to facilitate interdepartmental collaboration on specific projects	.835	
	Liaison personnel whose job it is to coordinate the efforts of several departments for the purposes of a specific project	.711	
Process investment	Percent of revenue spent on process R&D	.997	n.a.
Applied supply chain process knowledge	Kanban support systems	.667	.775
	Demand-pull support systems	.687	
	Methods for reducing machine set-up times	.670	
	Cellular plant layout	.617	
	Total preventative maintenance methods	.561	
Supply chain process variance	Lead time from suppliers	.573	.702
	Lead time to customers	.539	
	Individual factory machine speeds	.617	
	Daily production output rate	.692	
Financial performance	Average ROI over the past 3 years	.931	.962
	Average profit over the past 3 years	.960	
	Profit growth over the past 3 years	.915	

CFA model fit statistics: χ^2=323.850; df=266; p=.009; RMSEA=.051; CFI=.943;

NNFI=.934
λ= Common metric completely standardized loading
ρ = scale composite reliability
n.a. = not applicable
All loadings are significant at $p<.01$

The final CFA was then used to assess reliability and validity (Table 3) The overall model fit well (χ^2=328.180; df=272; p=.011; RMSEA=.049; CFI=.940; NNFI=.933), all of the factor loadings exceeded .400, and all of the scale composite reliabilities exceed .700. As a test of discriminant validity, we fixed the non-causal correlation between pairs of latent variables to equality one-at-a-time both within each group and then as a single parameter across groups. As desired, all of the tests were significant.

3. Results

The one-group representation of the two-group SEM is provided in Figure 2. A multi-step process was utilized for both evaluating the hypotheses and for providing a clear managerial understanding of the model results. In the initial model, all paths were estimated freely in each group (metric invariance with the one exception was maintained in all subsequent models).[1] Modification indices provided no indication that additional paths were required. Each path was then constrained to equality across groups. This provides a specific test for each hypothesis. We subsequently created a parsimonious model based on the results of the initial SEM. If a path in the initial SEM could be constrained to equality without overall loss of model fit and if it was significant, then it was estimated in the parsimonious model and fixed equal across groups. If a path could not be constrained to equality across groups without loss of fit and the path was significant in both groups, then the path was estimated freely in each group. Otherwise, non-significant paths were fixed to zero in

[1] The entire set of two-group structural models was analyzed with the error variance of all items declared invariant across both groups. Two issues arose. First, the overall fit statistics were somewhat dampened from the baseline (χ^2=354.747; df=290; p=.006; RMSEA=.052; CFI=.939; NNFI=.936) and parsimonious models (χ^2=376.461; df=292; $p<.001$; RMSEA=.059; CFI=.919; NNFI=.915). RMSEA, CFI, and NNFI values continue to meet acceptable cutoff values. Second, all tests of path equivalency across groups resulted in identical conclusions. Analyzing the model with all error variances invariant across groups dampened overall fit statistics, but had no impact on the substantive results.

the parsimonious model. The covariance matrices were used as inputs in all models.

Figure 2: Empirical Model (Single Group Representation)

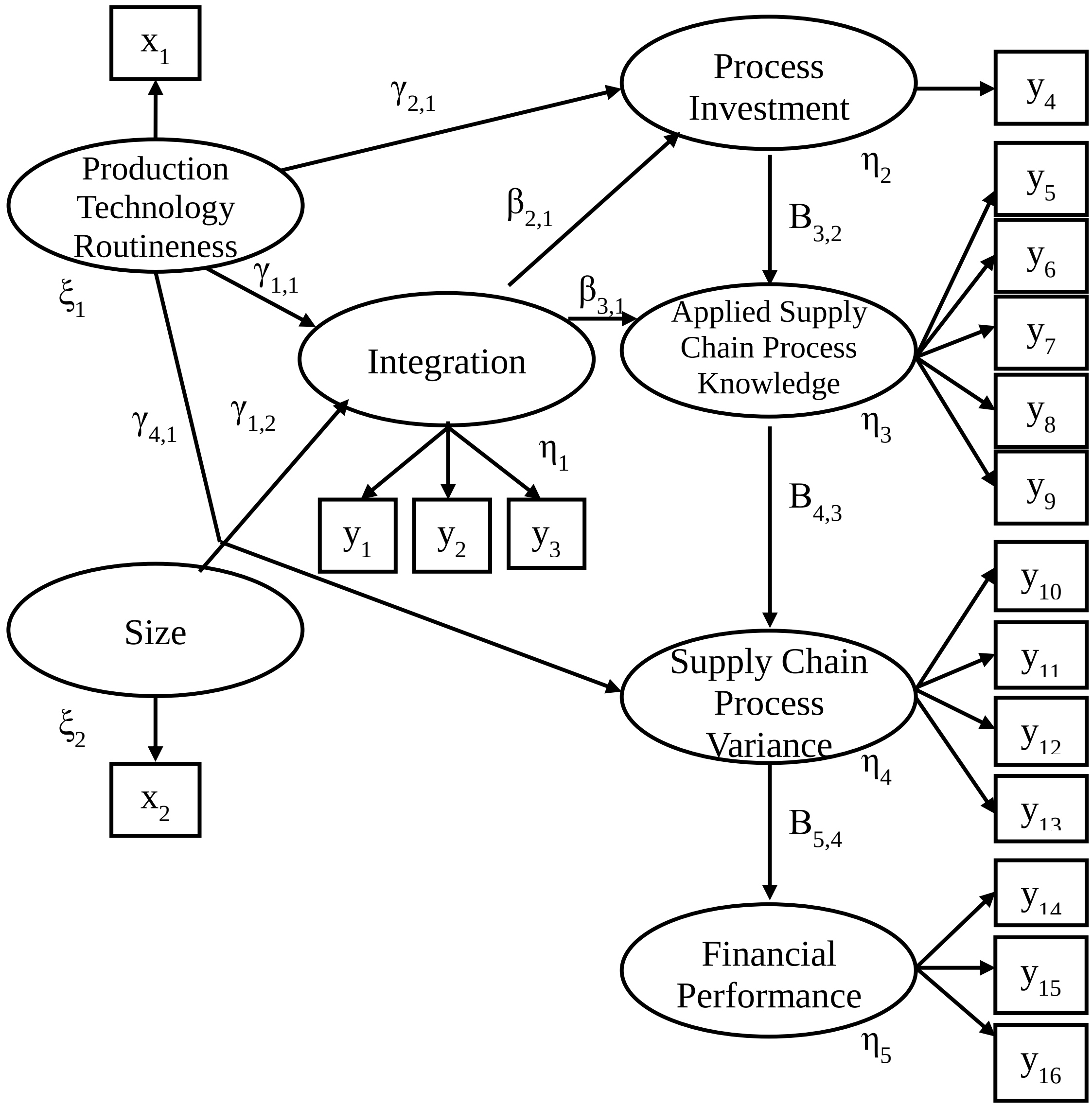


Table 4: Two-Group SEM Results

Baseline Model: Structural Paths Estimated Freely in each Group	Parameter estimate (t-value)		
Part A: Hypothesis & Path	Centralized Group	Decentralized Group	$\Delta\chi^2$ (Δdf=1)
H1 (β3,2): Process investment → applied supply chain process knowledge	.177 (1.638)	.287 (2.457a)	0.405
H2 (β4,3): Applied supply chain process knowledge → supply chain process variance	-.179 (-1.256)	-.427 (-2.614a)	0.856
H3 (β5,4): Supply chain process variance→ financial performance	-.140 (-1.096)	-.449 (-3.364a)	3.296c
H4 (γ1,1): Production technology routineness → integration	.351 (3.029a)	.119 (.995)	0.361
H5 (γ2,1): Production technology routineness → process investment	.192 (1.677b)	.123 (1.094)	0.352
H6 (γ4,1): Production technology routineness → supply chain process variance	-.011 (-.082)	-.286 (-2.104b)	2.785c
H7 (γ1,2): Size → integration	.090 (.792)	.428 (3.491a)	3.054c
H8 (β2,1): Integration → process investment	.244 (1.925b)	-.285 (-2.384a)	14.561a
H9 (β3,1): Integration → applied process knowledge	.637 (4.352a)	.677 (4.569a)	0.280

Baseline model fit statistics: χ^2=338.535; df=289; p=.024; RMSEA=.045; CFI=.947; NNFI=.944

$\Delta\chi^2$ (Δdf=1) is the test of structural path equality across groups one path at a time

Part B: Parsimonious Model	Centralized Group	Decentralized Group
H1 (β3,2): Process investment → applied supply chain process knowledge	.220(2.846a)	.220(2.846a)
H2 (β4,3): Applied supply chain process knowledge → supply chain process variance	-.279(-2.535a)	-.279(-2.535a)
H3 (β5,4): Supply chain process variance→ financial performance	fixed to zero	-.444 (-3.252a)
H4 (γ1,1): Production technology routineness → integration	.276 (3.370a)	.276 (3.370a)

H5 (γ2,1): Production technology routineness → process investment	———— .170 (2.096b) ———	
H6 (γ4,1): Production technology routineness → supply chain process variance	fixed to zero	-.315 (-2.314b)
H7 (γ1,2): Size → integration	fixed to zero	.400 (3.362a)
8 (β2,1): Integration → process investment	.254 (2.049b)	-.288 (-2.493a)
H9 (β3,1): Integration → applied process knowledge	———— .642 (5.476a) ———	

Parsimonious model fit statistics: χ^2=344.135; df=297; *p*=.031; RMSEA=.044; CFI=.948; NNFI=.946

a, *p*<.01; b, *p*<.05; c, *p*<.10

Parameter estimates are common metric completely standardized estimates

$\Delta\chi^2$ =3.213 (Δdf=3) between baseline and parsimonious models is not significant

The initial (baseline) SEM displayed satisfactory fit statistics: χ^2=338.535; df=289; *p*=.024; RMSEA=.045; CFI=.947; NNFI=.944. Even though the χ^2 test revealed a significant difference between the observed and recreated covariance matrices, the RMSEA, CFI, and NNFI indicators are more than adequate. The results of the baseline and parsimonious models are provided in Table 4.

H1 stated that the inverse effect of process investment on applied supply chain process knowledge is stronger for decentralized versus centralized firms. This hypothesis is not supported. The path is not significant in centralized firms (β3,2=.177; t=1.638), but is in decentralized firms (β3,2=.287; t=2.457; *p*<.01). The right hand column in the upper panel of Table 4 shows the results of $\Delta\chi^2$ (Δdf=1) tests. The test assesses whether the overall model fit is affected when a path is constrained to equality across groups. β3,2 may be set equal without loss of model fit ($\Delta\chi^2$=.405; *p*>.10). As seen in the lower panel of Table 4 where the results of the parsimonious model are shown, the pooled estimate is significant (β3,2=.220; t=2.846; *p*<.01).

H2 stated that the positive effect of applied supply chain process knowledge on supply chain process variance is stronger for decentralized firms. The path is not significant in the centralized group (β4,3=-.179; t=-1.256), but significant in the decentralized group (β4,3=.427; t=-2.614; *p*<.01). Setting the path equal across groups resulted in no loss of fit ($\Delta\chi^2$=.856). In the parsimonious model, the pooled estimate is significant (β4,3=-.279; t=-2.535; *p*<.01). H2 is supported.

H3 stated that the inverse effect of supply chain process variance on financial performance is stronger for decentralized firms. The path is significant only in the decentralized group (β5,4=.449; t=-3.364; $p<.01$) and the path cannot be fixed equal without significant loss of model fit ($\Delta\chi^2$=3.296; $p<.05$). In the parsimonious model the path was fixed to zero in the centralized group and estimated in the decentralized group (β5,4=.444; t=-3.252; $p<.01$). The hypothesis is supported.

H4 stated that production technology routineness and integration would associate positively. The path is significant in the centralized group (γ1,1=.351; t=3.029; $p<.01$), but not in the decentralized group (γ1,1=.119; t=.995). However, the path may be set equal across groups without loss of model fit ($\Delta\chi^2$=.361) and is significant in the parsimonious model (γ1,1=.276; t=3.370; $p<.01$). H4 is supported.

H5 stated that production technology routineness predicts process investment. The path is significant in the centralized group (γ2,1=.192; t=1.677; $p<.05$), not significant in the decentralized group (γ2,1=.123; t=1.093), and may be set equal across groups with loss of model fit ($\Delta\chi^2$=.352). The pooled estimate is significant in the final model (γ2,1=.170; t=2.096; $p<.05$). H5 is supported.

A negative effect of production technology routineness on supply chain process variance was stated in H6. The path is significant only among decentralized firms (γ4,2=-.286; t=-2.140; $p<.05$). The paths are not equal ($\Delta\chi^2$=2.785, p<.10). The path IS significant in the final model (γ4,2=-.315; t=-2.314; $p<.05$).

A positive association between size and integration was expressed in H7. The relationship is significant only for decentralized firms (γ1,2=.428; t=3.491; $p<.01$). Fixing the path equal across groups resulted in a loss of fit ($\Delta\chi^2$=3.054; $p<.10$). In the parsimonious model, the path was fixed to zero for centralized firms and estimated for decentralized firms (γ1,2=.400; t=3.362; $p<.01$). H7 is not supported.

H8 stated that integration and process investment associate positively. The path in the centralized group is positive and significant (β2,1=.244; t=1.925; $p<.05$), but inverse in the decentralized group (β2,1=-.285; t=-2.384; $p<.01$). The path cannot be set equal with loss of fit ($\Delta\chi^2$=14.561; $p<.01$). In the parsimonious model, the path was estimated freely in each group. The difference in directionality across groups is not a matter of suppression, or sign reversal, as the simple correlation between integration and process investment equals .238 ($p<.05$) in the centralized group and -.228 ($p<.05$) in the decentralized group. H3 is not supported. The inverse effect of integration on process investment was unexpected. It might be that in decentralized firms, authority over the process R&D

budget may also be decentralized and process R&D units may be dispersed through divisions or functions. This combination may lead to confusion in the ranks and a loss of control by senior staff. Integration may exacerbate the situation by introducing lateral infighting.

H9, the final hypothesis, stated that integration and applied supply chain process knowledge associate positively. The path is significant in both the centralized (β3,1=.637; t=4.352; p<.01) and decentralized group (β3,1=.677; t=4.569; p<.01). Equalizing the path across groups did not significantly affect model fit ($\Delta\chi^2$=.280). The path is significant in the parsimonious model (β3,1=.642; t=5.476; p<.01). H9 is therefore supported.

The parsimonious model fit relatively well: χ^2=344.135; df=297; p=.031; RMSEA=.044; CFI=.948; NNFI=.946. The difference between the baseline and parsimonious model was not significant ($\Delta\chi^2$ =5.600; Δdf=8; p>.10). From the parsimonious model, the standardized total effect of production technology routineness (.156; t=7.331), size (.027; t=2.450), integration (.072; t=2.455), and process investment (.026; t=2.013) on financial performance are significant at p<.01. This holds only for organizations that have decentralized supply chain decision-making. The model shows that centralization over the logistics function cleaves the “causal” knowledge chain: centralized firms apply a higher level of supply chain process knowledge resultant from process investment, however, they are unable to translate or leverage applied process knowledge into meaningful supply chain process variance reductions. Nor are they able to leverage reductions in supply chain process variance into financial performance gains.

Conclusion

The research proposed a chain of events that translates process investment into financial performance. The chain involves process investment, applied supply chain process knowledge, supply chain process variance, and financial performance. The research also identified a critical and overlooked variable that disrupts the chain: namely, centralized supply chain decision-making. Prior research has studied centralization of the firm’s process and product R&D function and reported positive outcomes related to patents and resultant citation trails (Argyres and Silverman 2004). In our case, we examined centralization of a function other than R&D that is in part responsible for the conversion of process R&D funds into improved performance. We found that centralized supply chain decision-making penetrates and severs the process investment – financial performance chain and renders it null. The key explanatory factor is that centralization interferes with local adaptation by supply chin managers who are critical to the conversion process. This constitutes the crucial finding that managers can utilize to better understand centralization's role within the firm.

We also theorized that centralization would not moderate the relationships of size, production technology routineness, and integration with one another or with the process investment – financial performance chain. While we met with less success in this regard, our results are no less informative. First, size predicts integration only when the supply chain function is decentralized. In other words, as a decentralized supply chain firms become larger, it becomes more integrated. This is vital as integration should be used to ensure non-contradictory local adaptation by supply chain managers in the face of loss of control by senior most executives. In contrast, the centralized supply chain firm does not utilize lateral integration as size increases possibly because senior level managers are themselves ensuring, or are supposed to ensure, that their decisions are effective from the local perspective. However, it appears that the result may not be such. The process investment – performance chain is cleaved when decision-making is centralized. Furthermore, large scale confers superior financial performance, but centralized supply chain firms are not the recipient of the benefit. Large scale confers superior performance to the decentralized supply chain firm precisely because they integrate at a higher rate. This has a subsequent effect on process investment and on applied supply chain knowledge.

Production technology routineness also confers superior financial performance, but again the benefit is provided only to decentralized supply chain firms. This is not a case of the "fit" of production technology routineness with integration or with process investment (the effects are equal in centralized and decentralized firms). Managers in both centralized and decentralized firms appreciate the need to integrate and invest in innovative processes as manufacturing continuity increases. Neither, in the end, does the interference of integration with process investment among decentralized supply chain firms function discordantly. The inverse effect of integration with process investment among decentralized firms, while a potential source of confusion and infighting as well as collaboration, does not abate the financial performance benefit derived from production technology continuity. Two factors are critical: (1) the decentralized supply chain firm is able to directly reduce supply chain process variance from production continuity; and (2) the decentralized supply chain firm is able to translate reduced process variance into financial performance. In contrast, the centralized firm, even if integration is used to trigger the allocation of capital to create innovative processes, does not obtain superior financial performance from production continuity or from firm scale.

Classic contingency theory focuses on how the "fit" of formal structure and of strategy with environment affects performance. The Fisher (1997) model, which consists of flexibility versus efficiency strategic choice in dynamic versus stable environments, is the classic supply chain example. We adopted a very different contingency approach and studied how centralization, one dimensions of formal structure, moderates (or does not moderate), the relationships among context (production technology, size), integration and the process investment – financial performance chain. There are a number of departure points for further research suggested by the study, some of which involve limitations. First, new processes and products exist along an incremental – radical continuum. Benner and Tushman (2002) portrayed exploitation as involving existing and incrementally new processes and products that reduce process variance. They discussed exploration as requiring more radical departures from the extant knowledge base as creating variance. The firm must therefore balance variance reduction driven by an incremental, lower risk approach against variance creation driven by radical, higher risk departures and balance research investments that are expected to yield short and long term returns. Further research is required to elaborate how the firm manages variance reduction and variance creation from a supply chain perspective. We can ask how the process investment – financial performance chain along is affected by policies that promote variance creation.

Second, the proportion of a firm's R&D budget spent on process innovation relative to product innovation is highly dependent on industry: e.g., the proportion in the petroleum industry is much higher than in the pharmaceutical industry (Cohen and Klepper 1996). Returns to innovation are partly determined by exogenous industry factors that are naturally favorable to process or product innovation. This explains the importance of the equality of the industry distributions of the centralized versus decentralized firms in the sample. However, we lacked sufficient sample size to conduct tests within specific industries of centralized versus decentralized firms. What we gain in external validity (a multi-industry study), we lose in internal validity (controlling for industry effects). Further research should assess whether our findings hold at the industry level.

Third, many R&D studies focus on patents and related indicators of R&D value. Patents are particularly useful for studying product innovations. Indeed, companies openly promote new products in the furtherance of marketing objectives. Process improvements are much more difficult to capture in patents. Many firms do not announce process improvements and patents are not taken out as they are difficult to enforce. Secrecy is the operative mechanism along with non-disclosure agreements. Furthermore, secrecy may apply more to innovative production processes than to supply chain processes. Many new supply chain processes require adoption by vendors and customers to create desired scale effects. A classic example is collaborative planning, forecasting, and replenishment. After proofing the process, Wal-Mart freely distributed it in the furtherance of a common industry platform. It is an open issue as to whether patents and citation trails are subject to differences based on functional centralization other than within the R&D function and whether such differences apply to supply chain versus production processes.

References

1. Alonos, Ricardo, Wouter Dessien, and Niko Matouschek (2008), "When Does Coordination Require Centralization?" *American Economic Review*, 98 (1), 145-179.
2. Argyres, Nicholas S. and Brian S. Silverman (2004), "R&D Organization Structure and the Development of Corporate Technological Knowledge," *Strategic Management Jo*urnal, 25 (8/9), 929-958.
3. Benner, M.J. and Michael Tushman (2002), "Process Management and Technological Innovation: A Longitudinal Study of the Photography and Paint Industries," *Administrative Science Quarterly*, 47 (4), 676-706.
4. Burns, Tom, and G.M. Stalker (1961), *The Management of Innovation*, London: Tavistock.
5. Roger J. Calantone, Nukhet Harmancioglu, and Cornelia Dröge (2010), "Inconclusive Innovative "Returns": A Meta-Analysis of Research on Innovation in New Product Development, *Journal of Product Innovation Management*, 27 (7), 1065-1076.
6. Cohen, Wesley M., and Steven Klepper (1996), "Firm Size and the Nature of Innovation within Industries: The Case of Process and Product R&D," *The Review of Economics and Statistics*, 78 (2), 232-243.
7. Damanpour, Faribouz (1991), "Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators," *Academy of Management Journal*, 34 (3), 555-590.
8. DeCarolis, Donna M. and David L. Deeds (1991), "The Impact of Stocks and Flows of Organizational Knowledge on Firm Performance: An Empirical Investigation of the Biotechnology Industry," *Strategic Management Journal*, 20 (1), 953-968.
9. Enkel, Ellen, and Oliver Gassmann (2010), "Creative Imitation: Exploring Case of Cross-industry Innovation," *R&D Management*, 40 (3), 256-270.
10. Evangelista, Rinaldo and Antonio Vezzani (2010), "The Economic Impact of Technological and Organizational Innovations," *Research Policy*, 39 (10), 1253-1263.
11. Fisher, Marshall L. (1997), "What is the Right Supply Chain for Your Product?" *Harvard Business Review*, 75 (2), 105–117.
12. Germain, Richard, Cindy Claycomb, and Cornelia Dröge (2008), "Supply Chain Variability, Organizational Structure, and Performance: The Moderating Effect of Demand Unpredictability," *Journal of Operations Management*, 26 (5), 557-570.

13. Germain, Richard and Karthik Iyer (2006), "The Interaction of Internal and Downstream Integration and its Association with Performance," *Journal of Business Logistics*, 27 (2), 29-52.
14. Greyskens, Inge, Jan-Benedict Steenkamp, and Nirmalya Kumar (1998), "Generalizations about Trust in Marketing Channel Relationships using Meta-Analysis," *International Journal of Research in Marketing*, 15 (3), 223-248.
15. Grueber, Martin and Tim Studt (2009), "2010 Global R&D Funding Forecast: An Overview," *R&D Magazine*, December, 22: At: http://www.rdmag.com/Featured-Articles/2009/12/Policy-and-Industry-2010-Global-R-D-Funding-Forecast-An-Overview/.
16. Hair, Joseph F., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham (2006), *Multivariate Data Analysis*, 6th Edition, Pearson Prentice Hall, Upper Saddle River, NJ.
17. Hult G. Thomas M., David J. Ketchen, and Mathias Arrfelt (2007), "Strategic Supply Chain Management: Improving Performance Through a Culture of Competitiveness and Knowledge Development," *Strategic Management Journal*, 28 (10), 1035-1052.
18. Jöreskog, Karl G. and Dag Sörbom (1993), *LISREL 8: User's Reference Guide*, Scientific Software International, Chicago, IL.
19. Khandwalla, Pradip N. (1974), "Mass Output Orientation of Operations Technology and Organizational Structure," *Administrative Science Quarterly*, 19 (1), 74-97.
20. Kirca, Ahmet H., Satish Jayachandran and William O. Beardon (2005), "Market Orientation: A Meta-Analytic Review and Assessment of Its Antecedents and Impact on Performance," *Journal of Marketing*, 69 (2), 24-41.
21. KPMG (2011), http://www.kpmg.com/global/en/whatwedo/special-interests/business-outlook-survey/spring-2011/global-indicators-manufacturing/pages/rd.aspx.
22. Kristal, Mehmet M., Xiaowen Huang, and Roger G. Schroeder (2010), "The Effect of Quality Management on Mass Customization Capability," *International Journal of Operations & Production Management*, 30 (9), 900-922.
23. Lewin, Jeffrey E. and Naveen Donthu (2005), "The Influence of Purchase Situation on Buying Center Structure and Involvement: A Select Meta-analysis of Organizational Buying Behavior Research," *Journal of Business Research*, 58 (10), 1381-1409.
24. Miller, C. Chet, William H. Glick, Yau-De Wang, and George P. Huber (1991), "Understanding Technology-Structure

Relationships: Theory Development and Meta-Analytic Theory Testing," *Academy of Management Journal*, 34 (2) 370-399.

25. Miller, Danny (1991), "Stale in the Saddle: CE Tenure and the Match between Organization and Environment," *Management Science*, 37 (1), 34-52.

26. Miller, Danny and Cornelia Dröge (1986), "Psychological and Traditional Determinants of Structure," *Administrative Science Quarterly*, 31 (4) 539-560.

27. Quataro, Francesco (2010), "Knowledge Coherence, Variety and Economic Growth: Manufacturing Evidence from Italian Regions," *Research Policy*, 39 (10), 1289-1302.

28. Roth, Aleda V. (1996), "Achieving Strategic Agility through Economies of Knowledge," *Strategy and Leadership*, 24 (2), 30-37.

29. Schmenner, Roger W. and Morgan L. Swink (1998), "On Theory in Operations Management," *Journal of Operations Management*, 17 (1), 97–113.

30. Sakakibara, Sadao, Barbara B. Flynn, Roger G. Schroeder, and William T. Morris (1997), "The Impact of Just-in-time Manufacturing and its Infrastructure on Manufacturing Performance," *Management Science*, 43 (9), 1246-1257.

31. Schiele, Holger (2010), "Early Supplier Integration: The Dual Role of Purchasing in New Product Development" *R&D Management*, 40 (2), 138-153.

32. Teece, David J. (2000), " Strategies for Managing Knowledge Assets: The Role of Firm Structure and Industrial Context," *Long Range Planning*, 33 (1), 35-54.

33. Vickery, Shawnee, Jay Jayaram, Cornelia Dröge, Roger Calantone (2003), "The Effects of an Integrative Supply Chain Strategy on Customer Service and Financial Performance: An Analysis of Direct versus Indirect Relationships, *Journal of Operations Management*, 21 (5), 523-539.

34. Walton, Eric J. (2005), "The Persistence of Bureaucracy: A Meta-analysis of Weber's Model of Bureaucratic Control," *Organization Studies*, 26 (4), 569-600.

35. Weber, Max (1946) *From Max Weber: Essays in Sociology*. Hans H. Gerth and C. Wright Mills (eds). New York: Oxford University Press.

36. Woodward, Joan (1965), *Industrial Organization: Theory and Practice*, London: Tavistock.

Опубликованные научные доклады

№ 1(R)–2005	А. В. Бухвалов Д. Л. Волков	Фундаментальная ценность собственного капитала: использование в управлении компанией
№ 2(R)–2005	В. М. Полтерович О. Ю. Старков	Создание массовой ипотеки в России: проблема трансплантации
№1(E)–2006	I. S. Merkuryeva	The Structure and Determinants of Informal Employment in Russia: Evidence From NOBUS Data
№ 2(R)–2006	Т. Е. Андреева В. А. Чайка	Динамические способности фирмы: что необходимо, чтобы они были динамическими?
№ 3(R)–2006	Д. Л. Волков И. В. Березинец	Управление ценностью: анализ основанных на бухгалтерских показателях моделей оценки
№ 4(R)–2006	С. А. Вавилов К. Ю. Ермоленко	Управление инвестиционным портфелем на финансовых рынках в рамках подхода, альтернативного стратегии самофинансирования
№ 5(R)–2006	Г. В. Широкова	Стратегии российских компаний на разных стадиях жизненного цикла: попытка эмпирического анализа
№ 6(R)–2006	Д. В. Овсянко В. А. Чайка	Особенности организации процесса непрерывного улучшения качества в российских компаниях и его связь с процессами стратегического поведения
№ 7(R)–2006	А. Н. Козырев	Экономика интеллектуального капитала
№ 8(R)–2006	Н. А. Зенкевич, Л. А. Петросян	Проблема временной состоятельности кооперативных решений
№ 9(R)–2006	Е. А. Дорофеев, О. А. Лапшина	Облигации с переменным купоном: принципы ценообразования
№ 10(E)–2006	T. E. Andreeva V. A. Chaika	Dynamic Capabilities: what they need to be dynamic?
№11(E)–2006	G. V. Shirokova	Strategies of Russian Companies at Different Stages of Organizational Life Cycle: an Attempt of Empirical Analysis
№12(R)–2006	А. Е. Лукьянова, Т. Г. Тумарова	Хеджевые фонды как инструменты снижения рисков и роста ценности компании
№13(R)–2006	Л. Н. Богомолова	Применение этнографических методов для изучения процессов принятия потребительских решений

№14(R)–2006	Е. К. Завьялова	Особенности профессионально-личностного потенциала и развития карьеры линейных менеджеров отечественных производственных предприятий
№15(R)–2006	С. В. Кошелева	Удовлетворенность трудом как комплексный диагностический показатель организационных проблем в управлении персоналом
№16(R)–2006	А. А. Румянцев, Ю. В. Федотов	Экономико-статистический анализ результатов инновационной деятельности в промышленности Санкт-Петербурга
№17(R)–2006	Е. К. Завьялова	Взаимосвязь организационной культуры и систем мотивации и стимулирования персонала
№18(R)–2006	А. Д. Чанько	Алгебра и гармония HR-менеджмента. Эффективность обучения персонала и диагностика организационной культуры
№19(E)–2006	T. E. Andreeva	Organizational change in Russian companies: findings from research project
№20(E)–2006	N. E. Zenkevich, L. A. Petrosjan	Time-consistency of Cooperative Solutions
№21(R)–2006	Т. Е. Андреева	Организационные изменения в российских компаниях: результаты эмпирического исследования
№22(R)–2006	Д. Л. Волков, Т. А. Гаранина	Оценивание интеллектуального капитала российских компаний
№23(R)–2006	А. В. Бухвалов, Ю. Б. Ильина, О. В. Бандалюк	Электронное корпоративное управление и проблемы раскрытия информации: сравнительное пилотное исследование
№24(R)–2006	С. В. Кошелева	Особенности командно-ролевого взаимодействия менеджеров среднего и высшего звена международной и российских компаний
№25(R)–2006	Ю. В. Федотов, Н. В. Хованов	Методы построения сводных оценок эффективности деятельности сложных производственных систем
#26(E)–2006	S. Kouchtch, M. Smirnova, K. Krotov, A. Starkov	Managing Relationships in Russian Companies: Results of an Empirical Study
№27(R)–2006	А. Н. Андреева	Портфельный подход к управлению люксовыми брендами в фэшн-бизнесе: базовые концепции, ретроспектива и

		возможные сценарии
№28(R)–2006	Н. В. Хованов, Ю. В. Федотов	Модели учета неопределенности при построении сводных показателей эффективности деятельности сложных производственных систем
№29(R)–2006	Е. В. Соколова, Ю. В. Федотов, Н. В. Хованов.	Построение сводной оценки эффективности комплексов мероприятий по повышению надежности функционирования объектов электроэнергетики
#30(E)–2006	M. Smirnova	Managing Buyer-Seller Relationships in Industrial Markets: A Value Creation Perspective
№31(R)–2006	С. П. Кущ, М. М. Смирнова	Управление взаимоотношениями в российских компаниях: разработка концептуальной модели исследования
№32(R)–2006	М. О. Латуха, В. А. Чайка, А. И. Шаталов	Влияние «жестких» и «мягких» факторов на успешность внедрения системы менеджмента качества: опыт российских компаний
№33(R)–2006	А. К. Казанцев, Л. С. Серова, Е. Г. Серова, Е. А. Руденко	Индикаторы мониторинга информационно-технологических ресурсов регионов России
№34(R)–2006	Т. Е. Андреева, Е. Е. Юртайкин, Т. А. Солтицкая	Практики развития персонала как инструмент привлечения, мотивации и удержания интеллектуальных работников
#35(E)–2006	T. Andreeva, E. Yurtaikin, T. Soltitskaya	Human resources development practices as a key tool to attract, motivate and retain knowledge workers
№36(R)–2006	А. В. Бухвалов, В. Л. Окулов.	Классические модели ценообразования на капитальные активы и российский финансовый рынок. Часть 1. Эмпирическая проверка модели CAPM. Часть 2. Возможность применения вариантов модели CAPM
№37(R)–2006	Е. Л. Шекова	Развитие корпоративной социальной ответственности в России: позиция бизнеса (на примере благотворительной деятельности компаний Северо-Западного региона)
№38(R)–2006	Н. А. Зенкевич, Л. А. Петросян	Дифференциальные игры в менеджменте

№39(R)–2006	В. Г. Беляков, О. Р. Верховская, В. К. Дерманов, М. Н. Румянцева	Глобальный мониторинг предпринимательской активности Россия: итоги 2006 года
№40(R)–2006	В. А. Чайка, А. В. Куликов	Динамические способности компании: введение в проблему
№41(R)–2006	Ю. Е. Благов	Институционализация менеджмента заинтересованных сторон в российских компаниях: проблемы и перспективы использования модели «Арктурус»
№42(R)–2006	И. С. Меркурьева, Е. Н. Парамонова, Ю. М. Битина, В. Л. Гильченок	Экономический анализ на основе связанных данных по занятым и работодателям: методология сбора и использования данных
#43(E)–2006	I. Merkuryeva, E. Paramonova, J. Bitina, V. Gilchenok	Economic Analysis Based on Matched Employer-Employee Data: Methodology of Data Collection and Research
№44(R)–2006	Н. П. Дроздова	Российская «артельность» — мифологема или реальность' (Артельные формы хозяйства в России в XIX — начале XX в.: историко-институциональный анализ)
№1(R)–2007	Е. В. Соколова	Бенчмаркинг в инфраструктурных отраслях: анализ методологии и практики применения (на примере электроэнергетики)
№2(R)–2007	С. П. Кущ, М. М. Смирнова	Управление поставками в российских компаниях: стратегия или тактика
№3(R)–2007	Т. М. Скляр	Проблема ленивой монополии в российском здравоохранении
№4(R)–2007	Т. Е. Андреева	Индивидуальные предпочтения работников к созданию и обмену знаниями: первые результаты исследования
№5(R)–2007	А. А. Голубева	Оценка порталов органов государственного управления на основе концепции общественной ценности
№6(R)–2007	С. П. Кущ, М. М. Смирнова	Механизм координации процессов управления взаимоотношениями компании с партнерами
#7(E)–2007	D. Volkov, I. Berezinets	Accounting-based valuations and market prices of equity: case of Russian market

№8(R)–2007	М. Н.Барышников	Баланс интересов в структуре собственности и управления российской фирмы в XIX – начале XX века
#9(E)–2007	D. Volkov, T. Garanina	Intellectual capital valuation: case of Russian companies
№10(R)–2007	К. В. Кротов	Управление цепями поставок: изучение концепции в контексте теории стратегического управления и маркетинга.
№11(R)–2007	Г. В. Широкова, А. И. Шаталов	Характеристики компаний на ранних стадиях жизненного цикла: анализ факторов, влияющих на показатели результативности их деятельности
№12(R)–2007	А. Е. Иванов	Размещение государственного заказа как задача разработки и принятия управленческого решения
№ 13(R)-2007	О. М. Удовиченко	Понятие, классификация, измерение и оценка нематериальных активов (объектов) компании: подходы к проблеме
№14(R)–2007	Г. В. Широкова, Д. М. Кнатько	Влияние основателя на развитие организации: сравнительный анализ компаний управляемых основателями и наемными менеджерами
#15(E)–2007	G. Shirokova, A. Shatalov	Characteristics of companies at the early stages of the lifecycle: analysis of factors influencing new venture performance in Russia
#16(E)–2007	N. Drozdova	Russian “Artel’nost” — Myth or Reality' Artel’ as an Organizational Form in the XIX — Early XX Century Russian Economy: Comparative and Historical Institutional Analysis
#1(E)–2008	S. Commander, J. Svejnar, K. Tinn	Explaining the Performance of Firms and Countries: What Does the Business Environment Play'
№1(R)–2008	Г. В. Широкова, В. А. Сарычева, Е. Ю. Благов, А. В. Куликов	Внутрифирменное предпринимательство: подходы к изучению вопроса
№1A(R)–2008	Г. В. Широкова, А. И. Шаталов, Д. М. Кнатько	Факторы, влияющие на принятие решения основателем компании о передаче полномочий профессиональному менеджеру: опыт стран СНГ и Центральной и Восточной Европы

№ 2(R)–2008	Г. В. Широкова, А. И. Шаталов	Факторы роста российских предпринимательских фирм: результаты эмпирического анализа
№ 1(R)–2009	Н. А. Зенкевич	Моделирование устойчивого совместного предприятия
№ 2 (R)–2009	Г. В. Широкова, И. В. Березинец, А. И. Шаталов	Влияние организационных изменений на рост фирмы
№ 3 (R)–2009	Г. В. Широкова, М. Ю. Молодцова, М. А. Арепьева	Влияние социальных сетей на разных этапах развития предпринимательской фирмы: результаты анализа данных Глобального мониторинга предпринимательства в России
# 4 (E)–2009	N. Drozdova	Russian Artel Revisited through the Lens of the New Institutional Economics
№ 5 (R)–2009	Л. Е. Шепелёв	Проблемы организации нефтяного производства в дореволюционной России
№ 6 (R)–2009	Е. В. Соколова	Влияние государственной политики на инновационность рынков: постановка проблемы
№ 7 (R)–2009	А. А. Голубева, Е. В. Соколова	Инновации в общественном секторе: введение в проблему
# 8 (E)–2009	A. Damodaran	Climate Financing Approaches and Systems: An Emerging Country Perspective
№ 1 (R)–2010	И. Н. Баранов	Конкуренция в сфере здравоохранения
№ 2 (R)–2010	Т. А. Пустовалова	Построение модели оценки кредитного риска кредитного портфеля коммерческого банка (на основе методологии VAR)
№ 3 (R)–2010	Ю. В.Лаптев	Влияние кризиса на стратегии развития российских МНК
№ 4 (R)–2010	А. В. Куликов, Г. В. Широкова	Внутрифирменные ориентации и их влияние на рост: опыт российских малых и средних предприятий
# 5 (E)–2010	M. Storchevoy	A General Theory of the Firm: From Knight to Relationship Marketing
№ 6 (R)–2010	А. А. Семенов	Появление систем научного менеджмента в России
# 7 (E)–2010	D. Ivanov	An optimal-control based integrated model of supply chain scheduling
№ 8 (R)–2010	Н. П. Дроздова, И.Г.Кормилицына	Экономическая политика государства и формирование инвестиционного климата:

		опыт России конца XIX — начала XX вв.
№ 9 (R)–2010	Д. В. Овсянко	Направления применения компонентов менеджмента качества в стратегическом управлении компаниями
# 10 (E)–2010	V. Cherenkov	Toward the General Theory of Marketing: The State of the Art and One More Approach
№ 11 (R)–2010	В. Н. Тишков	Экономические реформы и деловая среда: опыт Китая
№ 12 (R)–2010	Т. Н. Клёмина	Исследовательские школы в организационной теории: факторы формирования и развития
№ 13 (R)–2010	И. Я. Чуракова	Направления использования методик выявления аномальных наблюдений при решении задач операционного менеджмента
№ 14 (R)–2010	К. В. Кротов	Направления развития концепции управления цепями поставок
№ 15 (R)–2010	А. Г. Медведев	Стратегические роли дочерних предприятий многонациональных корпораций в России
№ 16 (R)–2010	А. Н. Андреева	Влияние печатной рекламы на восприятие бренда Shalimar (1925 – 2010)
№ 17 (R)–2010	В. Л. Окулов	Ценность хеджирования для корпорации и рыночные ожидания
№ 1 (R)–2011	А. А. Муравьев	О российской экономической науке сквозь призму публикаций российских ученых в отечественных и зарубежных журналах за 2000–2009 гг.
№ 2 (R)–2011	С. И. Кирюков	Становление и развитие теории управления маркетинговыми каналами
№ 3 (R)–2011	Д. И. Баркан	Общая теория продаж в контексте дихотомии «развитие – рост»