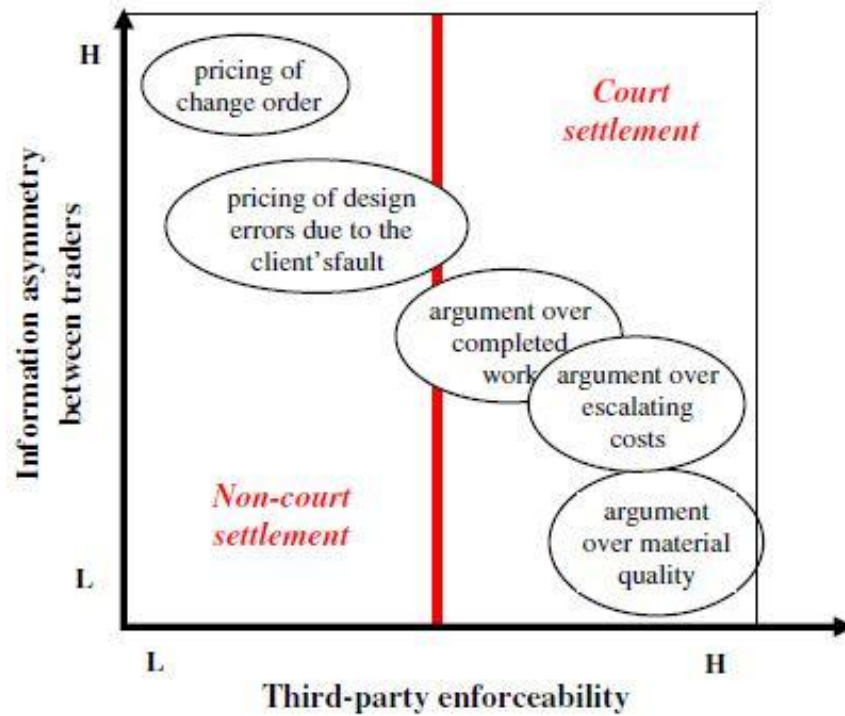


## Appendices

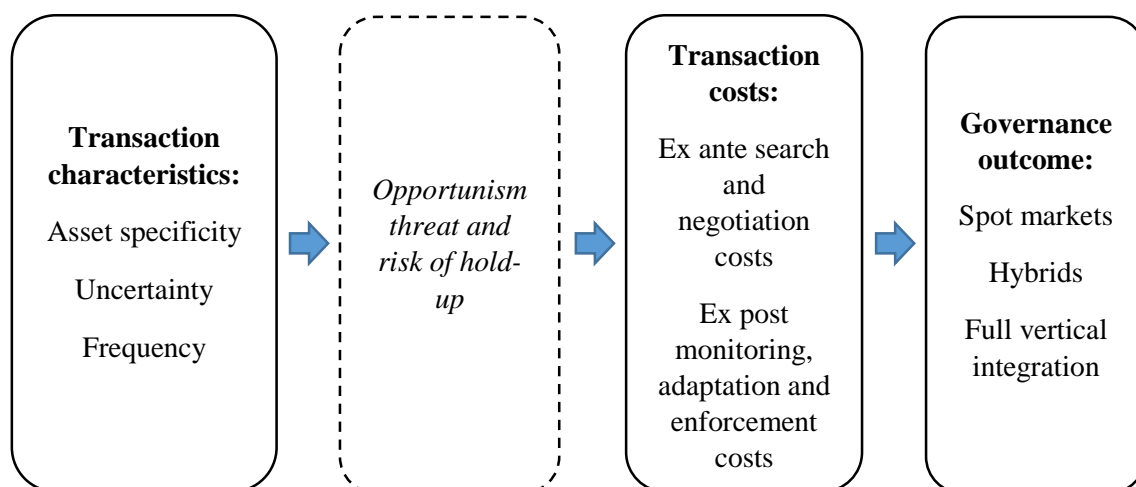
**Appendix 1:** Relation between information asymmetry and third-party enforceability (Chang & Ive, 2007, p. 399)



*Appendix 2: Overview of hold-up theories (Miller, 2011, p. 12)*

	<b>TCE</b>	<b>PRT</b>	<b>RBV</b>	<b>Agency theory</b>	<b>Relational contracting</b>
<b>Unit of analysis</b>	Transaction	Asset	Relationship	Contract	Relationship
<b>Primary area of inquiry</b>	Organizational boundaries and hold-ups	Organizational boundaries and hold-ups	Organizational boundaries	Aligning interests of principal and agent	Lasting exchanges/ interorganizational relationships
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Bounded rationality</li> <li>• Opportunism</li> <li>• Incomplete contract</li> <li>• Risk neutrality</li> <li>• Transaction frequency</li> <li>• Action unobservable</li> </ul>	<ul style="list-style-type: none"> <li>• Incomplete contract</li> <li>• Opportunism</li> </ul>	<ul style="list-style-type: none"> <li>• Incomplete contracts</li> </ul>	<ul style="list-style-type: none"> <li>• Complete contracts</li> <li>• Rationality</li> <li>• Risk preference</li> <li>• Self-interest</li> <li>• Action unobservable</li> </ul>	<ul style="list-style-type: none"> <li>• Income contracts</li> <li>• Action unobservable</li> </ul>
<b>Remedies to the hold-up problem: Formal (F) / Informal (I)</b>	Vertical integration and hybrids (F)	Vertical integration and allocation of property rights (F)	Vertical integration and management of dependence (F)	Contracts (F) Information asymmetry (I)	Prospect of long-term reward

*Appendix 3: Transaction cost economics: conceptual model (based on Weesen et al. (2014, p. 90))*



**Appendix 4: Empirical papers on remedies to hold-up (adapted from Miller (2011))**

Empirical									
Author(s)	Governance structures				Formal tools		Informal mechanisms		Observations/Proposed solutions
	Integration	Hybrid*	Contract types	Contract dimensions	Bilateral investment	Gradualism	Relationship characteristics	Individual characteristics	
Anderson & Dekker (2005)		X		X			X		Alignment between transaction context as well as supplier characteristics and formal control structure
Anderson & Jap (2005)							X		Negative effects, or “dark side” of trust
Artz & Brush (2000)			X				X		Collaboration, continuity expectations and communication strategies moderate negotiation costs of a relational contract
Barthélemy & Quélin (2006)				X					Complex and long-term contract if high specificity and high environmental uncertainty
Berg <i>et al.</i> (1995)								X	Trust, reciprocity and social history
Brinsmead (2007)			X						Robust contract with flexible concession agreement
Carson <i>et al.</i> (2006)			X				X		Relational contracts for volatile environments Formal contracts for ambiguous environments
Chang & Ive (2007)							X	X	Partner selection and relational contracting as complements
Ciccotello <i>et al.</i> (2004)				X					The influence of technological novelty on contract duration
Cheng <i>et al.</i> (2013)							X		Positive impact of relational contracting on information sharing
Dekker (2004)		X					X		Combination of formal governance and relational contract mechanisms
Dekker (2008)								X	Combination of formal governance and partner selection
Dekker & Van den Abbeele (2010)							X	X	Partner experience and partner research as substitutes and complements to formal mechanisms

Author(s)	Governance structures				Formal tools		Informal mechanisms		Observations/Proposed solutions
	Integration	Hybrid*	Contract types	Contract dimensions	Bilateral investment	Gradualism	Relationship characteristics	Individual characteristics	
Delerue (2004)		X					X		Strategic alliances and perception of relational risk Trust
Dyer (1997)					X		X		Joint investment and close relationships when high asset specificity (relational contracts)
Ellingsen & Johannesson (2004a)							X	X	Communication and inequity aversion make promises more credible than threats
Fee <i>et al.</i> (2006)		X					X		Moderate equity stake related to longer-lasting relationships
Henderson & Cool (2010)							X		Negotiation experience
Hoppe & Schmitz (2011)				X					Non-renegotiable option contract better than renegotiable contract Renegotiable contract better than no contract
Jap & Anderson (2003)					X		X		Goal congruence and interpersonal trust in bilateral investments
Jiang <i>et al.</i> (2011)							X	X	Significance of reliance to long-term orientation
Joskow (1987)				X					Asset specificity and long-term contracts
Krishnan <i>et al.</i> (2010)		X					X		Collaborative contracting
Kultti & Takalo (2002)						X			Staggered fee schedule if knowledge transfer
Lioliou <i>et al.</i> (2014)							X		Relational governance (trust, open communication, commitment and dependency)
Masten & Crocker (1985)				X					Long-term contracts and pricing adjustments
Miller (2007)								X	Aggregated cost information and fairness
Morita & Servatka (2013)	X							X	Integration with group identity
Ouimet (2012)	X								Minority and majority acquisition

Author(s)	Governance structures				Formal tools		Informal mechanisms		Observations/Proposed solutions
	Integration	Hybrid*	Contract types	Contract dimensions	Bilateral investment	Gradualism	Relationship characteristics	Individual characteristics	
Pisano (1989)		X							Equity stake
Robson <i>et al.</i> (2008)		X					X		Trust in small international strategic alliances rather than large
Sloof <i>et al.</i> (2007)								X	Unobservable investment and fairness
Wang <i>et al.</i> (2013)							X	X	Frequent social interactions and shared values
Weseen <i>et al.</i> (2014)				X					Types dependent on transaction characteristics
Wuyts & Geyskens (2005)				X			X	X	Closer partner selection and more detailed contract if collectivist firm

\* Hybrid includes strategic alliances and equity stake

*Appendix 5: Analytical papers on remedies to hold-up (adapted from Miller (2011))*

Analytical									
Author(s)	Governance structures				Formal tools		Informal mechanisms		Observations/Proposed solutions
	Integration	Hybrid*	Contract types	Contract dimensions	Bilateral investment	Gradualism	Relationship characteristics	Individual characteristics	
Aghion <i>et al.</i> (1994)				X					Renegotiation design
Agrell & Kasperzec (2010)					X				Joint investments if buyer as coordinator
Baiman & Rajan (2002)		X		X	X				Initial contract if selfish investment Joint investment and equity stake
Baker <i>et al.</i> (2002)	X						X		Relational contracts with/ without vertical integration
Castaneda (2006)	X		X						Possibility of renegotiation and non-exclusive contract
Che (2000)					X	X			Sequencing investments if externalities
Che & Hausch (1999)				X					Different solutions depending on selfish or cooperative investments
Edlin (1996)			X			X			Initial contract (“Cadillac contract”) and upfront payment
Edlin & Reischelstein (1996)				X					Initial contract and breach remedies
Ellingsen & Johannesson (2004b)							X		Communication as a coordination device
Ewerhart (2006)					X			X	Inequity aversion with bilateral investments
Kvaløy (2007)	X			X					Non-integration, relational contract with high-powered incentives if high asset specificity
Lau (2008)				X					Repeated bargaining and renegotiation

Author(s)	Governance structures				Formal tools		Informal mechanisms		Observations/Proposed solutions
	Integration	Hybrid*	Contract types	Contract dimensions	Bilateral investment	Gradualism	Relationship characteristics	Individual characteristics	
Lyon & Rasmussen (2004)			X	X					Buyer-option contracts with unilateral final option, if no cost of renegotiation
Nöldeke & Schmidt (1995)		X	X						Option contracts with particular renegotiation procedure
Ornelas & Turner (2008)	X								Investment and integration effects with trade liberalization
Pitchford & Snyder (2004)				X		X			Gradualism and simple contract if costless observable investment
Ruzzier (2009)	X								Non-integration if high asset specificity
Schmitz (2012)				X					Absence of liability constraints with hold-up, limited liability with overinvestment
Segal & Whinston (2002)				X					Renegotiation design necessary with both selfish and cooperative investments
Smirnov & Wait (2004)						X			Sequencing investments reduce welfare depending on the time horizon
Taylor & Plambeck (2002)				X					More inflexible contract that anticipate renegotiation
Taylor & Plambeck (2007)							X		Monitoring Relational contract and repeated interaction when innovative product
von Siemens (2009)								X	Private seller's fairness preferences with strong belief in a fair-minded seller
Wickelgren (2007)			X	X					Buyer-option contract with discounting and long time horizon

\* Hybrid includes strategic alliances and equity stake

*Appendix 6: Forms of opportunism and possible outcomes (Heide & Wathne, 2000, p. 41)*

		Circumstances	
		Existing	New
Behaviour	Passive	<p><b>1 Evasion</b></p> <p><b>Cost effect:</b> Decrease for O (short-term) Increase for E (long-term)</p> <p><b>Revenue effect:</b> Decrease for E, S (long-term)</p>	<p><b>2 Refusal to adapt</b></p> <p><b>Cost effect:</b> Minimal</p> <p><b>Revenue effect:</b> Increase for O (short-term), decrease for E and O (long-term, forgone revenues due to maladaptation)</p>
	Active	<p><b>3 Violation</b></p> <p><b>Cost effect:</b> Increase for E (long-term)</p> <p><b>Revenue effect:</b> Increase for O (short-term) Decrease for E, S (long-term)</p>	<p><b>3 Forced renegotiation</b></p> <p><b>Cost effect:</b> Increase for E (haggling, concessions)</p> <p><b>Revenue effect:</b> Increase for O (short-term, from concessions) Decrease for E and O (long-term, forgone revenues due to maladaptation)</p>

Note: O = Party engaging in opportunistic behaviour; E = Exchange partner; S = System (e.g., other parties)