



uniongas

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July 14, 2006

Ontario Energy Board  
P.O. Box 2319  
27th Floor,  
2300 Yonge Street  
Toronto, Ontario  
M4P 1E4

Attention: Mr. Peter H. O'Dell, Assistant Board Secretary

**RE: EB-2005-0551 – Natural Gas Electricity Interface Review & Storage Regulation**

Dear Mr. O'Dell,

Attached please find an electronic copy of all undertaking responses from Union Gas with respect to the EB-2005-0551 Hearing.

Yours truly,

A handwritten signature in blue ink, appearing to read 'Connie Burns'.

Connie Burns, CMA, PMP  
Manager, Regulatory Initiatives  
Union Gas Limited  
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Glenn Leslie, Blakes  
All EB-2005-0551 Intervenors

UNION GAS LIMITED

Undertaking of EEA Consultants  
To Board Chair

To provide a breakout of the different elements of non-FERC jurisdictional storage capacity included in the relevant geographic market.

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Please see attached document.

Witness: EEA Consultants  
Question: June 19, 2006  
Answer: June 23, 2006  
Docket: EB-2005-0551

**Physical Storage Capacity In The Union Gas Core and Non-Core Competitive Market Area  
 By Regulatory Authority**

Operating Company	Parent Company	State/ Province	Total Working Gas [MMscf]	Working Gas By Regulatory Authority		
				FERC	State PSC <sup>1</sup>	Province
<i>Union Gas</i>	<i>Duke</i>	<i>Ontario</i>	<i>152,200</i>			<i>152,200</i>
<i>Texas Eastern</i> <sup>2</sup>	<i>Duke</i>	<i>PA</i>	<i>51,001</i>	<i>51,001</i>		
Enbridge	Enbridge	Ontario	92,000			92,000
ANR Pipeline	El Paso	Michigan	117,000	117,000		
ANR Storage	El Paso	Michigan	55,673	55,673		
Blue Lake Storage	El Paso	Michigan	47,086	47,086		
Eaton Rapids Gas Storage	El Paso/Semco	Michigan	13,534	13,534		
Consumers Energy	CMS Energy	Michigan	142,800		142,800	
Mich Con	DTE Energy	Michigan	124,444		124,444	
Washington 10 Storage Corp.	DTE Energy	Michigan	60,500		60,500	
Washington 28	DTE Energy	Michigan	9,725		9,725	
Michigan Gas Utilities	Aquila	Michigan	5,100		5,100	
Semco Energy Gas Co.	Semco Energy	Michigan	5,015		5,015	
Bluewater Gas Storage	Plains All American Pipeline	Michigan	24,500		24,500	
WPI- ESI Gas Storage	WPS Resources	Michigan	3,000	3,000		
Lee 8	Vectren/Citizen's Gas	Michigan	2,450		2,450	
Southwest Gas Storage Co.	Southern Union Co.	MI/IL	20,603	20,603		
National Fuel Gas Supply	National Fuel Gas Supply	NY/PA	84,115	84,115		
Natural Gas Pipeline of America	Kinder Morgan	Illinois	25,000	25,000		
Nicor Gas	Nicor, Inc.	Illinois	144,300		144,300	
Peoples Gas Light & Coke Co.	Peoples Energy	Illinois	28,000		28,000	
Northern Indiana Public Service Co.	NiSource	Indiana	6,663		6,663	
Indiana Gas Company	Vectren	Indiana	2,530		2,530	
Dominion Transmission	Dominion Resources	PA/NY	269,786	269,786		
Columbia Gas Transmission	NiSource	WV/PA/NY	245,000	245,000		
Steuben Gas Storage	Arlington Storage Partners	New York	6,200	6,200		
NYSE&G	Energy East Corp.	New York	1,450		1,450	
Honeoye Storage	EHA LLC	New York	6,718	6,718		
Central New York O&G	Stagecoach Holding LLC	New York	13,600	13,600		
<b>Total</b>			<b>1,759,994</b>	<b>958,317</b>	<b>557,477</b>	<b>244,200</b>

1/ State regulated storage companies (MichCon, Washington 10, Nicor, People's Gas Light & Coke, ...) providing services to third parties, including parties outside the state are required to file statements of operating conditions and tariffs for storage services as well as semi-annual activity reports with the FERC.

2/ Texas Eastern storage capacity operated by Dominion Transmission

Data Sources:

Natural Gas Intelligence, *Natural Gas and Storage in the United States and Canada (2004/2005)*

Michigan Public Service Commission, *Natural Gas Field Storage Summary, 2005*

Company Websites, SEC Filings: Form 10-K

"Jurisdictional Storage Fields in the United States by Owner", U.S. FERC, May 2006.

UNION GAS LIMITED

Undertaking of EEA Consultants  
To Donna Campbell

To provide ANR pipeline expired contracts from 2007 and 2008 for transmission from ANR storage to St. Clair Zone on both the ANR and Vector pipelines; Washington 10 to St. Clair and Great Lakes; Farwell Michigan to St. Clair.

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We have provided a summary of the contract information for each contract for firm transmission capacity listed in the most recent FERC Index of Customers related to the undertaking request for the three requested pipelines (ANR, Great Lakes Gas Transmission, and Vector Pipeline.) The contracts include all contracts expiring between June 1, 2006 and the end of 2008. The remaining contracts expiring after 2008 are also listed to provide an indication of the magnitude of the contracts expiring in the near term relative to the total amount of capacity under contract.

**ANR Pipeline**

ANR pipeline does not have capacity from ANR Storage to St. Clair, hence there are no contracts for transportation services, and no expiring contracts for transportation services between these points. ANR storage would be transported to Dawn using ANR pipeline capacity from the ANR storage zone (ML7S) to the ANR interconnect with Great Lakes Gas Transmission at Farwell. Within the ANR zone including storage and the Farwell interconnect (Zone ML7S) contracts for 475,709 Dth of pipeline capacity are scheduled to expire prior to the end of 2008, while contracts for 432,772 Dth of pipeline capacity contracts are scheduled to expire after 2008.

The Index of Customer data on transportation only contracts for the ANR Storage Zone (ML7S) with MDQ's greater than zero are attached below.

**Great Lakes Gas Transmission**

Contracts on Great Lakes Gas Transmission can provide transportation rights between the Farwell interconnect with ANR Pipeline, and St. Clair in one of four ways:

- Contracts with Farwell as a designated receipt point, and St. Clair as a designated delivery point
- Contracts with Farwell as a designated delivery point, and St. Clair as a designated receipt and delivery point:

Witness: EEA Consultants  
Question: June 20, 2006  
Response: June 26, 2006  
Docket: EB-2005-0551

- Contracts on GLGT with Farwell as a designated delivery point, and St. Clair as a designated receipt point:
- Contracts on GLGT with Emerson as a designated receipt point and St. Clair as a designated delivery point:

The contracts for each approach are summarized below. In total, 1,397,966 Dth of pipeline capacity contracts are scheduled to expire before the end of 2008, and 785,839 of capacity contracts are scheduled to expire after the end of 2008.

The list of contracts includes all contracts providing service, and are sorted by expiration date. Many of the contracts include delivery and receipt points in addition to the points listed below. A complete listing of all of the Index of Customer contracts showing all of the receipt and delivery points is attached.

**A) Contracts on GLGT with Farwell as a designated receipt point, and St. Clair as a designated delivery point**

**Contracts Expiring Prior to the End of 2008**

- 1) Rochester Gas and Electric Company, MDQ of 160,054 Dth/Day, expiring 10/31/2008.
- 2) Rochester Gas and Electric Company, MDQ of 11,601 Dth/Day (receipt at Farwell), expiring 10/31/2008.

**Contracts Expiring After the End of 2008**

- 1) TCPL, MDQ of 37,988 Dth/Day (receipt at Farwell), expiring 10/31/2010.
- 2) Dynegy Marketing and Trade Inc., MDQ of 119,740 Dth/Day, expiring 3/31/2015

**B) Contracts on GLGT with Farwell as a designated delivery point, and St. Clair as a designated receipt and delivery point:**

**Contracts Expiring Prior to the End of 2008**

- 1) Cannat Energy, Inc., MDQ of 50,647 Dth/Day, expiring 10/31/2008.
- 2) Husky Gas Marketing, MDQ of 12,663 Dth/Day, expiring 10/31/2008.
- 3) Husky Gas Marketing, MDQ of 25,326 Dth/Day, expiring 10/31/2008.
- 4) Nexen Energy Marketing, MDQ of 37,989 Dth/Day, expiring 10/31/2008.

**C) Contracts on GLGT with Farwell as a designated delivery point, and St. Clair as a designated receipt point:**

**Contracts Expiring Prior to the End of 2008**

- 1) Tenaska Marketing Ventures, MDQ of 100,000 Dth/Day, expiring 10/31/2007.

Witness: EEA Consultants  
Question: June 20, 2006  
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**D) Contracts on GLGT with Emerson as a designated receipt point and St. Clair as a designated delivery point:**

**Contracts Expiring Prior to the End of 2008**

- 1) TransCanada Pipelines Limited, MDQ of 305,695 Dth/Day, expiring 10/31/2006.
- 2) Midland Cogeneration Venture L.P., MDQ of 25,000 Dth/Day, expiring 10/31/2006.
- 3) Comsatec, Inc., MDQ of 5,390 Dth/Day, expiring 10/31/2006
- 4) Virginia Power Energy Marketing, Inc., MDQ of 8,929 Dth/Day, expiring 3/31/2007.
- 5) Consumers Energy Company, MDQ of 50,000 Dth/Day, expiring 3/31/2007
- 6) Coral Energy Resources, L.P., MDQ of 7,142, Expiring 3/31/2007
- 7) Nexen Marketing USA Inc., MDQ of 8,929 Dth/Day, expiring 3/31/2007.
- 8) Nexen Marketing USA Inc., MDQ of 20,833 Dth/Day, expiring 3/31/2007.
- 9) Virginia Power Energy Marketing, Inc., MDQ of 30,000 Dth/Day, expiring 4/30/2007.
- 10) Murphy Gas Gathering, MDQ of 3,500 Dth/Day, expiring 10/31/2007.
- 11) Coral Energy Resources, L.P., MDQ of 16,800, Expiring 10/31/2007
- 12) Cargill, Inc., MDQ of 4,167 Dth/Day, expiring 10/31/2007
- 13) TransCanada Pipelines Limited, MDQ of 180,000 Dth/Day, expiring 10/31/2007.
- 14) Apache Corporation, MDQ of 5,065 Dth/Day, expiring 10/31/2008
- 15) Cannat Energy, MDQ of 15,000 Dth/Day, expiring 10/31/2008
- 16) Cargill, Inc., MDQ of 30,390 Dth/Day, expiring 10/31/2008
- 17) Devon Louisiana Corporation, MDQ of 8,104, Expiring 10/31/2008
- 18) Husky Gas Marketing, MDQ of 5,000 Dth/Day, expiring 10/31/2008.
- 19) Pengrowth U.S. Corporation, MDQ of 5,065 Dth/Day, expiring 10/31/2008.
- 20) Pengrowth U.S. Corporation, MDQ of 5,000 Dth/Day, expiring 10/31/2008.
- 21) Progas U.S.A., Inc. , MDQ of 25,325 Dth/Day, expiring 10/31/2008.
- 22) Talisman Energy Canada, MDQ of 5,065 Dth/Day, expiring 10/31/2008.
- 23) United States Gypsum Company, MDQ of 2,500 Dth/Day, expiring 10/31/2008.
- 24) TransCanada Pipelines Limited, MDQ of 170,000 Dth/Day, expiring 10/31/2008.

**Contracts Expiring After the End of 2008**

- 1) TransCanada Pipelines Limited, MDQ of 361,000 Dth/Day, expiring 10/31/2010.

**Vector Pipeline**

Witness: EEA Consultants  
Question: June 20, 2006  
Response: June 26, 2006  
Docket: EB-2005-0551

Contracts on Vector Pipeline can provide transportation rights between the Washington 10 interconnect and St. Clair in one of two ways:

- Contracts with Washington 10 and St. Clair designated as receipt and delivery points.
- Contracts with points upstream of Washington 10 designated as a receipt point and St. Clair designated as a delivery point:

The contracts for each approach are summarized below. In total, 224,800 Dth of pipeline capacity contracts on Vector connecting Washington 10 and St. Clair are scheduled to expire before the end of 2008, and 800,000 Dth of capacity contracts are scheduled to expire after the end of 2008.

**A) Summary of contracts on Vector with Washington 10 as a designated receipt point and St. Clair as a designated delivery point:**

**Contracts Expiring Prior to the End of 2008**

- 1) BP Canada Energy Marketing Corp., Winter only MDQ of 95,000 Dth/Day. Expires 3/31/2007.
- 2) Tenaska Marketing Ventures, Winter only MDQ of 10,000 Dth/Day. Expires 3/31/2008.

**Contracts Expiring After the End of 2008**

- 1) ONEOK Energy Services Company, Winter only MDQ of 50,000 Dth/Day. Expires 3/31/2009.

**B) Summary of contracts on Vector with designated receipt points upstream of Washington 10, and St. Clair as a designated delivery point:**

**Contracts Expiring Prior to the End of 2008**

- 1) Nexen Marketing USA Inc., MDQ of 11,600 Dth/Day, expiring 10/31/2006.
- 2) BP Canada Energy Marketing Corp., MDQ of 15,000 Dth/Day, Expires 3/31/2007.
- 3) DTE Energy Trading, MDQ of Winter MDQ of 11,200 Dth/Day, Expires 3/31/2007.
- 4) Peoples Energy Wholesale Marketing LLC, Winter only MDQ of 15,000 Dth/Day, Expires 3/31/2007.
- 5) Sempra Energy Trading Corp., MDQ of 50,000 Dth/Day, expiring 10/31/2007.
- 6) Sempra Energy Trading Corp., MDQ of 17,000 Dth/Day, expiring 10/31/2007.

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**Contracts Expiring After the End of 2008**

- 2) ONEOK Energy Services Company L.P., MDQ of 50,000 Dth/Day, Expires 3/31/2009.
- 3) DTE Energy Trading, MDQ of 200,000 Dth/Day, Expires 11/30/2015.
- 4) Enbridge Gas Distribution, MDQ of 96,000 Dth/Day, Expires 11/30/2015.
- 5) Enbridge Gas Distribution, MDQ of 79,000 Dth/Day, Expires 11/30/2015.
- 6) Enbridge Gas Distribution, MDQ of 85,000 Dth/Day, Expires 11/30/2015.
- 7) Union Gas Limited, MDQ of 80,000 Dth/Day, expiring 11/30/2015.
- 8) Westcoast Energy U.S. Inc., MDQ of 160,000 Dth/Day, expiring 11/30/2015.

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<b>ANR Pipeline Capacity Under Contract at the ML7S (Storage) Zone</b>			
<b>Shipper Name</b>	<b>Rate Schedule</b>	<b>MDQ</b>	<b>End Date</b>
<b>ANR Pipeline Capacity Under Contract at the ML7S (Storage) Zone Expiring After 2008</b>			
NICOR ENERCHANGE, L.L.C.	FTS-1	2,615	10/31/2006
WISCONSIN GAS LLC	FTS-1	6,148	10/31/2006
WISCONSIN ELECTRIC POWER COMPANY	FTS-1	6,563	10/31/2006
EAGLE ENERGY PARTNERS I, L.P.	FTS-1	7,500	10/31/2006
CENTRAL ILLINOIS LIGHT COMPANY	FTS-1	7,628	10/31/2006
INTERSTATE POWER AND LIGHT COMPANY	ETS	9,141	10/31/2006
SEQUENT ENERGY MANAGEMENT, L.P.	FTS-1	12,000	10/31/2006
NJR ENERGY SERVICES COMPANY	FTS-2	15,000	10/31/2006
BP CANADA ENERGY MARKETING CORP.	FTS-1	33,000	10/31/2006
BP CANADA ENERGY MARKETING CORP.	FTS-1	33,000	10/31/2006
NORTHERN INDIANA PUBLIC SERVICE COMPANY	FTS-1	34,872	10/31/2006
WEST TENNESSEE PUBLIC UTILITY DISTRICT	FTS-1	1,587	3/31/2007
NEXEN MARKETING U.S.A. INC.	FTS-1	4,092	3/31/2007
PROLIANCE ENERGY, LLC	ETS	25,719	3/31/2007
NORTHERN INDIANA FUEL & LIGHT CO., INC.	FTS-1	835	10/31/2007
NORTHERN INDIANA FUEL & LIGHT CO., INC.	FTS-1	7,540	10/31/2007
NORTHERN INDIANA PUBLIC SERVICE COMPANY	ETS	618	3/31/2008
NORTHERN INDIANA PUBLIC SERVICE COMPANY	ETS	1,097	3/31/2008
NORTHERN STATES POWER COMPANY OF MINNESOTA	FTS-1	4,921	3/31/2008
WISCONSIN ELECTRIC POWER COMPANY	ETS	13,078	3/31/2008
WISCONSIN GAS LLC	ETS	24,411	3/31/2008
NORTHERN INDIANA PUBLIC SERVICE COMPANY	ETS	30,000	3/31/2008
MIDAMERICAN ENERGY COMPANY	ETS	660	10/31/2008
ATMOS ENERGY CORPORATION	ETS	1,119	10/31/2008
OHIO VALLEY GAS CORPORATION	ETS	1,198	10/31/2008
OHIO VALLEY GAS CORPORATION	FTS-1	1,758	10/31/2008
WISCONSIN PUBLIC SERVICE CORP.	ETS	10,620	10/31/2008
WISCONSIN PUBLIC SERVICE CORP.	ETS	13,810	10/31/2008
UGI UTILITIES, INC.	FTS-1	13,979	10/31/2008
ROCHESTER GAS & ELECTRIC CORPORATION	FTS-1	151,200	10/31/2008
<b>Total</b>		<b>475,709</b>	
<b>ANR Pipeline Capacity Under Contract at the ML7S (Storage) Zone Expiring After 2008</b>			
OHIO GAS COMPANY	ETS	436	3/31/2009
ATMOS ENERGY CORPORATION	FTS-1	967	3/31/2009

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ATMOS ENERGY CORPORATION	FTS-1	1,400	3/31/2009
NORTH SHORE GAS COMPANY	FTS-1	20,000	3/31/2009
AQUILA, INC.	ETS	33,000	3/31/2009
UNITED STATES GYPSUM COMPANY	FTS-1	900	9/30/2009
BP CANADA ENERGY MARKETING CORP.	FTS-1	2,000	10/31/2009
WISCONSIN PUBLIC SERVICE CORP.	ETS	46,267	10/31/2009
SEMCO ENERGY GAS COMPANY	ETS	5,086	3/31/2010
WISCONSIN POWER & LIGHT CO.	ETS	9,922	3/31/2010
WISCONSIN POWER & LIGHT CO.	ETS	10,000	3/31/2010
WISCONSIN POWER & LIGHT CO.	ETS	13,013	3/31/2010
WISCONSIN ELECTRIC POWER COMPANY	ETS	26,346	3/31/2010
WISCONSIN GAS LLC	ETS	48,415	3/31/2010
WISCONSIN PUBLIC SERVICE CORP.	FTS-1	52,694	3/31/2010
WISCONSIN ELECTRIC POWER COMPANY	ETS	3,981	10/31/2010
WISCONSIN GAS LLC	ETS	7,388	10/31/2010
BP CANADA ENERGY MARKETING CORP.	FTS-1	8,000	10/31/2010
WISCONSIN POWER & LIGHT CO.	ETS	9,989	10/31/2010
MADISON GAS & ELECTRIC COMPANY	FTS-1	13,154	10/31/2010
MADISON GAS & ELECTRIC COMPANY	ETS	10,907	10/31/2011
CENTRA GAS MANITOBA, INC.	FTS-1	21,212	10/31/2012
CENTRA GAS MANITOBA, INC.	FTS-1	7,450	3/31/2013
CENTRA GAS MANITOBA, INC.	FTS-1	49,711	3/31/2013
WISCONSIN ELECTRIC POWER COMPANY	FTS-3	10,192	10/31/2015
PANHANDLE EASTERN PIPE LINE COMPANY, LLC	FTS-1	20,342	3/31/2016
<b>Total</b>		<b>432,772</b>	

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<b>Great Lakes Gas Transmission Limited Partnership</b>						
<b>Index of Customers With Contracts Providing Service Between Farwell and St. Clair Expiring Before the End of 2008</b>						
<b>Saturday, April 01, 2006</b>						
Shipper Name	Shipper ID	Shipper	Rate Schedule	Contract No.	Effective Date	Expiration Date
		Aff. ID				
CITY OF COHASSET	044129567	N	FT	0311	11/1/1996	10/31/2006
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	CLOQUET	29	11847	West	507
	RECEIPT	SOUTH CHESTER	29	11568	East	507
	RECEIPT	WILDERNESS	29	132788	East	507
	RECEIPT	DEWARD	29	40792	East	507
	RECEIPT	FARWELL	29	11601	East	507
	RECEIPT	CHIPPEWA	29	17406	East	507
	RECEIPT	MIDLAND	29	169334	East	507
	RECEIPT	BIRCH RUN	29	11760	East	507
	RECEIPT	OTISVILLE	29	17529	East	507
	RECEIPT	CAPAC	29	11744	East	507
	RECEIPT	MUTTONVILLE-ANR	29	11767	East	507
	RECEIPT	BAUMAN	29	132789	East	507
	RECEIPT	BELLE RIVER MILLS	29	11771	East	507
	RECEIPT	ST. CLAIR	29	11772	East	507
	DELIVERY	COHASSET	29	216501	West	507
COMSATEC INC.	252031398	N	FT	3052	5/1/2003	10/31/2006
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	5390
	DELIVERY	ST. CLAIR	29	11772	East	5390
TRANSCANADA PIPELINES LIMITED	249052259	Y	FT	4765	11/1/2005	10/31/2006
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	305965
	DELIVERY	ST. CLAIR	29	11772	East	305965
TRANSCANADA PIPELINES LIMITED	249052259	Y	FT	4766	11/1/2005	10/31/2006
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>

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			<u>Q</u>	<u>DRN</u>		
	RECEIPT	EMERSON	29	33975	West	200000
	DELIVERY	ST. CLAIR	29	11772	East	200000
CORAL ENERGY RESOURCES, L.P.	015014421	N	FT	5128	11/1/2005	10/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	16800
	DELIVERY	ST. CLAIR	29	11772	East	16800
MURPHY GAS GATHERING INC.	617346424	N	FT	4574	11/1/2004	10/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	3500
	DELIVERY	ST. CLAIR	29	11772	East	3500
TENASKA MARKETING VENTURES	624240628	N	FT	5751	11/1/2005	10/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	ST. CLAIR	29	11772	East	100000
	DELIVERY	THIEF RIVER FALLS	29	11983	West	0
	DELIVERY	CARLTON	29	11842	West	40000
	DELIVERY	FORTUNE LAKE	29	11655	Central	10000
	DELIVERY	DEWARD	29	40792	East	35000
	DELIVERY	FARWELL	29	11601	East	35000
	DELIVERY	CHIPPEWA	29	17406	East	25000
	DELIVERY	RATTLE RUN	29	387249	East	35000
	DELIVERY	BELLE RIVER MILLS	29	11771	East	35000
	DELIVERY	CHINA TOWNSHIP	29	293839	East	50000
TRANSCANADA PIPELINES LIMITED	249052259	Y	FT	4764	11/1/2005	10/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	180000
	DELIVERY	ST. CLAIR	29	11772	East	180000
APACHE CORPORATION	006961551	N	FT	3139	7/1/2003	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	5065
	DELIVERY	ST. CLAIR	29	11772	East	5065

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CANNAT ENERGY INC.	249982372	N	FT	1007	4/1/2000	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	15000
	DELIVERY	ST. CLAIR	29	11772	East	15000
CANNAT ENERGY INC.	249982372	N	FT	2932	2/1/2003	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	ST. CLAIR	29	11772	East	50647
	DELIVERY	SOUTH CHESTER	29	11568	East	50647
	DELIVERY	WILDERNESS	29	132788	East	14586
	DELIVERY	DEWARD	29	40792	East	50647
	DELIVERY	GOOSE CREEK	29	199466	East	44569
	DELIVERY	FARWELL	29	11601	East	50647
	DELIVERY	CHIPPEWA	29	17406	East	25999
	DELIVERY	MIDLAND	29	169334	East	19999
	DELIVERY	BIRCH RUN	29	11760	East	14181
	DELIVERY	OTISVILLE	29	17529	East	50647
	DELIVERY	CAPAC	29	11744	East	50647
	DELIVERY	MUTTONVILLE-ANR	29	11767	East	50647
	DELIVERY	MUTTONVILLE-GREENWOOD	29	184107	East	50647
	DELIVERY	BAUMAN	29	132789	East	6077
	DELIVERY	BELLE RIVER MILLS	29	11771	East	10129
	DELIVERY	ST. CLAIR	29	11772	East	50647
CARGILL INCORPORATED	006249189	N	FT	3171	7/8/2003	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	30390
	DELIVERY	ST. CLAIR	29	11772	East	30390
DEVON LOUISIANA CORPORATION	067266551	N	FT	0302	11/1/1998	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	8104
	DELIVERY	ST. CLAIR	29	11772	East	8104
HUSKY GAS MARKETING INC.	249496076	N	FT	0733	11/1/1998	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>

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			<u>Q</u>	<u>DRN</u>		
	RECEIPT	ST. CLAIR	29	11772	East	12663
	DELIVERY	SOUTH CHESTER	29	11568	East	12663
	DELIVERY	WILDERNESS	29	132788	East	3647
	DELIVERY	DEWARD	29	40792	East	12663
	DELIVERY	GOOSE CREEK	29	199466	East	11143
	DELIVERY	FARWELL	29	11601	East	12663
	DELIVERY	CHIPPEWA	29	17406	East	6500
	DELIVERY	MIDLAND	29	169334	East	5000
	DELIVERY	BIRCH RUN	29	11760	East	3546
	DELIVERY	OTISVILLE	29	17529	East	12663
	DELIVERY	CAPAC	29	11744	East	12663
	DELIVERY	MUTTONVILLE-ANR	29	11767	East	12663
	DELIVERY	MUTTONVILLE-GREENWOOD	29	184107	East	12663
	DELIVERY	BAUMAN	29	132789	East	1520
	DELIVERY	BELLE RIVER MILLS	29	11771	East	5000
	DELIVERY	ST. CLAIR	29	11772	East	12663
HUSKY GAS MARKETING INC.	249496076	N	FT	4734	11/1/2004	10/31/2008
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	ST. CLAIR	29	11772	East	25326
	DELIVERY	SOUTH CHESTER	29	11568	East	25326
	DELIVERY	WILDERNESS	29	132788	East	7294
	DELIVERY	DEWARD	29	40792	East	25326
	DELIVERY	GOOSE CREEK	29	199466	East	22287
	DELIVERY	FARWELL	29	11601	East	25326
	DELIVERY	CHIPPEWA	29	17406	East	13000
	DELIVERY	MIDLAND	29	169334	East	10000
	DELIVERY	BIRCH RUN	29	11760	East	7091
	DELIVERY	OTISVILLE	29	17529	East	20259
	DELIVERY	CAPAC	29	11744	East	25326
	DELIVERY	MUTTONVILLE-ANR	29	11767	East	25326
	DELIVERY	MUTTONVILLE-GREENWOOD	29	184107	East	25326
	DELIVERY	BAUMAN	29	132789	East	3039
	DELIVERY	BELLE RIVER MILLS	29	11771	East	5065

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	DELIVERY	ST. CLAIR	29	11772	East	25326
HUSKY GAS MARKETING INC.	249496076	N	FT	0735	11/1/1998	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID- Q</u></b>	<b><u>Point ID- DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	5000
	DELIVERY	ST. CLAIR	29	11772	East	5000
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID- Q</u></b>	<b><u>Point ID- DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	25000
	DELIVERY	MIDLAND	29	169334	East	25000
	DELIVERY	ST. CLAIR	29	11772	East	25000
NEXEN MARKETING U.S.A. INC.	248834186	N	FT	4518	8/1/2004	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID- Q</u></b>	<b><u>Point ID- DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	ST. CLAIR	29	11772	East	37989
	DELIVERY	SOUTH CHESTER	29	11568	East	37989
	DELIVERY	WILDERNESS	29	132788	East	10941
	DELIVERY	DEWARD	29	40792	East	37989
	DELIVERY	GOOSE CREEK	29	199466	East	33431
	DELIVERY	FARWELL	29	11601	East	37989
	DELIVERY	CHIPPEWA	29	17406	East	19501
	DELIVERY	MIDLAND	29	169334	East	15000
	DELIVERY	BIRCH RUN	29	11760	East	10637
	DELIVERY	OTISVILLE	29	17529	East	30388
	DELIVERY	CAPAC	29	11744	East	37989
	DELIVERY	MUTTONVILLE- ANR	29	11767	East	37989
	DELIVERY	MUTTONVILLE- GREENWOOD	29	184107	East	37989
	DELIVERY	BAUMAN	29	132789	East	4559
	DELIVERY	BELLE RIVER MILLS	29	11771	East	7598
	DELIVERY	ST. CLAIR	29	11772	East	37989
PENGROWTH U. S. CORPORATION	248691495	N	FT	4362	7/1/2004	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID- Q</u></b>	<b><u>Point ID- DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	5065
	DELIVERY	ST. CLAIR	29	11772	East	5065
PENGROWTH U. S.	248691495	N	FT	4363	7/1/2004	10/31/2008

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CORPORATION						
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	EMERSON	29	33975	West	5000
	DELIVERY	ST. CLAIR	29	11772	East	5000
PROGAS U.S.A., INC.	252066782	N	FT	0270	11/1/1998	10/31/2008
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	EMERSON	29	33975	West	25325
	DELIVERY	ST. CLAIR	29	11772	East	25325
ROCHESTER GAS AND ELECTRIC CORPORATION	006994040	N	FT	0056	11/1/1993	10/31/2008
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	FARWELL	29	11601	East	160054
	RECEIPT	CAPAC	29	11744	East	160054
	RECEIPT	MUTTONVILLE- ANR	29	11767	East	160054
	DELIVERY	ST. CLAIR	29	11772	East	160054
ROCHESTER GAS AND ELECTRIC CORPORATION	006994040	N	FT	0067	11/1/1994	10/31/2008
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	FARWELL	29	11601	East	37481
	RECEIPT	CAPAC	29	11744	East	37481
	RECEIPT	MUTTONVILLE- ANR	29	11767	East	37481
	DELIVERY	ST. CLAIR	29	11772	East	37481
TALISMAN ENERGY CANADA	249063835	N	FT	0558	11/1/1998	10/31/2008
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	EMERSON	29	33975	West	10130
	DELIVERY	ST. CLAIR	29	11772	East	10130
TALISMAN ENERGY CANADA	249063835	N	FT	2324	11/1/2001	10/31/2008
	<u>Point ID</u>	<u>Point Name</u>	<u>Point ID-Q</u>	<u>Point ID-DRN</u>	<u>Zone</u>	<u>MDQ</u>
	RECEIPT	EMERSON	29	33975	West	5065
	DELIVERY	ST. CLAIR	29	11772	East	5065

Witness: EEA Consultants  
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TRANSCANADA PIPELINES LIMITED	249052259	Y	FT	4763	11/1/2005	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	170000
	DELIVERY	ST. CLAIR	29	11772	East	170000
UNITED STATES GYPSUM COMPANY	005212600	N	FT	3140	8/1/2003	10/31/2008
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	2500
	DELIVERY	CARLTON	29	11842	West	2500
	DELIVERY	ST. CLAIR	29	11772	East	2500
<b>Great Lakes Gas Transmission Limited Partnership</b>						
<b>Index of Customers With Contracts Providing Service Between Farwell and St. Clair Expiring After 2008</b>						
<b>Saturday, April 01, 2006</b>						
Shipper Name	Shipper ID	Shipper	R/S	Contract No.	Effective Date	Expiration Date
		Aff. ID				
TRANSCANADA PIPELINES LIMITED	249052259	Y	FT	4762	11/1/2005	10/31/2009
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	80000
	DELIVERY	ST. CLAIR	29	11772	East	80000
TRANSCANADA PIPELINES LIMITED	249052259	Y	FT	4761	11/1/2005	10/31/2010
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	361000
	RECEIPT	SOUTH CHESTER	29	11568	East	37988
	RECEIPT	DEWARD	29	40792	East	37988
	RECEIPT	FARWELL	29	11601	East	37988
	RECEIPT	CAPAC	29	11744	East	37988
	RECEIPT	MUTTONVILLE-ANR	29	11767	East	37988
	RECEIPT	BELLE RIVER MILLS	29	11771	East	37988
	DELIVERY	FARWELL	29	11601	East	29377
	DELIVERY	ST. CLAIR	29	11772	East	361000

Witness: EEA Consultants  
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CARGILL INCORPORATED	006249189	N	LFT	5000	4/1/2005	3/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	4167
	DELIVERY	ST. CLAIR	29	11772	East	4167
CONSUMERS ENERGY COMPANY	006959803	N	FT	3143	11/1/2003	3/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	100000
	DELIVERY	CHIPPEWA	29	17406	East	100000
	DELIVERY	ST. CLAIR	29	11772	East	50000
CORAL ENERGY RESOURCES, L.P.	015014421	N	FT	4989	4/1/2005	3/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	7142
	DELIVERY	ST. CLAIR	29	11772	East	7142
NEXEN MARKETING U.S.A. INC.	248834186	N	FT	4990	4/1/2005	3/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	8929
	DELIVERY	ST. CLAIR	29	11772	East	8929
NEXEN MARKETING U.S.A. INC.	248834186	N	LFT	5001	4/1/2005	3/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	20833
	DELIVERY	ST. CLAIR	29	11772	East	20833
VIRGINIA POWER ENERGY MARKETING, INC.	027046650	N	FT	4991	4/1/2005	3/31/2007
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>
	RECEIPT	EMERSON	29	33975	West	8929
	DELIVERY	ST. CLAIR	29	11772	East	8929
DYNEGY MARKETING & TRADE INC.	137619136	N	FT	2321	8/1/2001	3/31/2015
	<b><u>Point ID</u></b>	<b><u>Point Name</u></b>	<b><u>Point ID-Q</u></b>	<b><u>Point ID-DRN</u></b>	<b><u>Zone</u></b>	<b><u>MDQ</u></b>

Witness: EEA Consultants  
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	RECEIPT	FARWELL	29	11601	East	119740
	DELIVERY	ST. CLAIR	29	11772	East	119740
ENSERCO ENERGY INC.	957194541	N	FT	6111	4/1/2006	4/3/2006
	<b>Point ID</b>	<b>Point Name</b>	<b>Point ID-Q</b>	<b>Point ID-DRN</b>	<b>Zone</b>	<b>MDQ</b>
	RECEIPT	EMERSON	29	33975	West	25685
	DELIVERY	ST. CLAIR	29	11772	East	25685
WPS ENERGY SERVICES INC.	841739824	N	FT	6112	4/1/2006	4/3/2006
	<b>Point ID</b>	<b>Point Name</b>	<b>Point ID-Q</b>	<b>Point ID-DRN</b>	<b>Zone</b>	<b>MDQ</b>
	RECEIPT	EMERSON	29	33975	West	13699
	DELIVERY	ST. CLAIR	29	11772	East	13699
VIRGINIA POWER ENERGY MARKETING, INC.	027046650	N	FT	5136	11/1/2005	4/30/2007
	<b>Point ID</b>	<b>Point Name</b>	<b>Point ID-Q</b>	<b>Point ID-DRN</b>	<b>Zone</b>	<b>MDQ</b>
	RECEIPT	EMERSON	29	33975	West	30000
	DELIVERY	ST. CLAIR	29	11772	East	30000
NORTHERN STATES POWER COMPANY (MN)	006962419	N	FT	0142	11/1/1994	4/30/2011
	<b>Point ID</b>	<b>Point Name</b>	<b>Point ID-Q</b>	<b>Point ID-DRN</b>	<b>Zone</b>	<b>MDQ</b>
MDQ IS 15,195 FOR NOVEMBER 1 THROUGH APRIL 30 AND 0 FOR MAY 1 THROUGH OCTOBER 31.	RECEIPT	DEWARD	29	40792	East	15195
	RECEIPT	FARWELL	29	11601	East	15195
	RECEIPT	BELLE RIVER MILLS	29	11771	East	15195
	RECEIPT	ST. CLAIR	29	11772	East	15195
	DELIVERY	EMERSON	29	33975	West	15195
	DELIVERY	CARLTON	29	11842	West	15195
	DELIVERY	ASHLAND	29	132785	Central	15195
	DELIVERY	FORTUNE LAKE	29	11655	Central	15195
	DELIVERY	DEWARD	29	40792	East	15195
NORTHERN STATES POWER COMPANY (WI)	007945868	N	FT	0143	11/1/1994	4/30/2011
	<b>Point ID</b>	<b>Point Name</b>	<b>Point ID-Q</b>	<b>Point ID-DRN</b>	<b>Zone</b>	<b>MDQ</b>
MDQ IS 40,520 FOR	RECEIPT	W/C BOUNDARY	29	295291	West	40520

Witness: EEA Consultants  
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NOVEMBER 1						
THROUGH APRIL 30	RECEIPT	FORTUNE LAKE	29	11655	Central	40520
AND 0 FOR MAY 1 THROUGH	RECEIPT	C/E BOUNDARY	29	295292	Central	40520
OCTOBER 31.	RECEIPT	DEWARD	29	40792	East	40520
	RECEIPT	FARWELL	29	11601	East	40520
	RECEIPT	ST. CLAIR	29	11772	East	40520
	DELIVERY	EMERSON	29	33975	West	40520
	DELIVERY	CLOW	29	132780	West	40520
	DELIVERY	CARLTON	29	11842	West	40520
	DELIVERY	ASHLAND	29	132785	Central	15195
	DELIVERY	IRONWOOD	29	132787	Central	15195
	DELIVERY	FORTUNE LAKE	29	11655	Central	40520
	DELIVERY	DEWARD	29	40792	East	40520

Witness: EEA Consultants  
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UNION GAS LIMITED

Undertaking of Steve Baker  
To Peter Thompson

The company will perform a calculation of the costs of capital in the 30 cents shown in undertaking U.16 from the technical conference in this hearing.

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As a result of the EB-2005-0520 Settlement Agreement, the cost based storage rate will be approximately 30 cents/GJ which is made up as follows:

	<u>Cents/GJ</u>
Return – Equity	5
Debt & Preference Shares	7
Income Tax	2
Capital & Property Tax	1
Accumulated Deferred Tax Drawdown	(1)
Depreciation	6
O&M	<u>10</u>
Total	<u>30</u>

In Union's view the storage market in and around Ontario is competitive and the Board should refrain from regulating rates for ex-franchise storage services. To refrain from the regulation of rates pursuant to Section 29, it is Union's view that this would require all revenues and costs associated with competitive services to be outside of regulation. As such, the calculation of return on rate base would no longer be meaningful or appropriate.

However, if 2007 forecast revenues and costs were used to complete a return on rate base calculation for ex-franchise storage services the following would be the result. Union notes that storage services are valued by the market, largely based on seasonal natural gas commodity pricing spreads which fluctuate widely from year to year. The revenues forecast for 2007 represent a point in time estimate of storage service values. As seasonal natural gas commodity pricing spreads change so will the value of storage services. Union also notes that the rate base associated with ex-franchise storage services in 2007 reflects depreciated assets that were developed years ago.

Witness: Steve Baker  
Question: June 20, 2006  
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	<u>\$000's</u>
Rate base – ex-franchise storage	102,916
Equity component @ 36%	37,050
Return @ 9.63%	3,568
Add \$44.5 million additional revenue	44,530
Less tax @ 36.12%	(16,084)
Adjusted net income	32,014
Adjusted return on equity	<u>86.41%</u>

Witness: Steve Baker  
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UNION GAS LIMITED

Undertaking of Steve Baker  
To Board Chair

To provide the calculation of the premium amount annually for the last ten years.

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The attached chart provides the S&T transactional gross margin before deferrals for the short term peak storage and balancing services and the long term peak storage services. Only nine years of data were readily available.

The short term peak storage and balancing margin captures the margin from the sale of peak storage, off peak storage and balancing service sales with a contract term of one year or less.

Long term peak storage contracts have terms longer than one year. The long term peak storage margins include C1 peak storage contracts and M12 contracts that have moved to C1 market based rates as they renew. For example, the GMi 22.6 PJ M12 storage contract moved to market based rates in 2001, and the Enbridge 21.6 PJ M12 storage contract moved to market based rates in 2006.

The chart also includes the high and low seasonal price spreads (summer to winter) which are a measure of the potential storage values for the upcoming winter season. As can be seen, the storage values can fluctuate during the year and have in fact been negative over this period.

Witness: Steve Baker / Steve Poredos  
Question: June 20, 2006  
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Union Gas Limited  
Summary of Historical Storage Transactional Services sold at Market Based Rates  
For the Years Ending December 31  
 (\$000's)

Line No.	Particulars	Actual								
		1997 (a)	1998 (b)	1999 (c)	2000 (d)	2001 (e)	2002 (f)	2003 (g)	2004 (h)	2005 (i)
1	<u>Short term storage and balancing services margin</u>									
	Gross Margin	8,625	11,110	6,736	2,417	2,847	14,950	11,463	22,027	15,306
2	<u>Long term storage services margin</u>									
	Gross Margin	-	1,427	(1,179) (1)	242	1,669	5,169	9,014	16,271	16,451
3	<u>Total Storage Services Margin</u>	<u>8,625</u>	<u>12,537</u>	<u>5,557</u>	<u>2,659</u>	<u>4,516</u>	<u>20,119</u>	<u>20,476</u>	<u>38,299</u>	<u>31,757</u>
	Seasonal price spreads (Potential storage value)									
	US/MMBTU (also shown in Exhibit D Tab 2 Appendix L)									
	High		0.72	0.69	0.40	0.91	0.96	0.69	1.86	1.35
	Low		0.17	0.21	-0.05	0.18	0.44	-0.25	0.25	0.45

Notes:

- (1) Timing Differences
- (2) Line 1 would be credited to Account 179-70
- (3) Line 2 would be credited to Account 179-72
- (4) Gmi's 22.6 PJ of M12 storage is converted to C1 market based storage in 2001



UNION GAS LIMITED

Undertaking of Steve Poredos  
To Patrick Moran

To provide the chronology of development of the existing storage capacity that Union operates and to identify the nature of the development that was taking place.

---

Table 1 attached provides a chronology of Union Gas' Greenfield storage developments and enhancements for existing storage capacity since 1970.

Witness: Steve Poredos  
Question: June 26, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

**Table 1**  
**Union Gas Limited**  
**Space Development Chronology**

Year	Development Type	Change in Working Capacity (PJ)
2005	Enhancement	0.5
2004	Enhancement	2.0
2002	Enhancement	2.1
2001	Enhancement	5.7
2000	Greenfield	8.3
	Enhancement	0.2
1999	Greenfield	6.8
1998	Acquisition	3.0
1997	Enhancement <sup>(1)</sup>	-0.4
1995	Enhancement	0.4
1994	Enhancement <sup>(2)</sup>	-0.8
1993	Greenfield	1.7
	Enhancement	3.1
1992	Greenfield	3.8
	Enhancement	1.1
1991	Greenfield	2.1
	Enhancement	0.6
1990	Greenfield	0.7
	Enhancement	3.3
1989	Greenfield	1.9
	Enhancement	4.3
1988	Greenfield	2.3
	Enhancement	4.1
1987	Enhancement	4.2
1986	Enhancement	3.5
1976	Greenfield	1.6
1975	Greenfield	12.0
1974	Greenfield	4.7
1972	Greenfield	18.1
Pre-1970		60.6

Note:

- 1) Includes conversion of Bentpath-Rosedale from base load to peaking.
- 2) Change in pool operating characteristics.

UNION GAS LIMITED

Undertaking of Steve Baker  
To David Brown

To provide whether due diligence report was done to address difficulty in financing F24-S, UPBS and DPBS assets in the absence of market pricing.

---

Union's evidence does not explicitly address the issue of Union's ability to attract capital without market pricing for storage and no such report exists. However, Union's storage evidence found at Exhibit C, Tab 1 makes numerous references to the framework necessary to support new storage development. Specifically, at page 14, Union states in respect of the current framework where in-franchise rates are subsidized through the allocation of the ex-franchise premium in excess of cost based rates that:

“This treatment is not appropriate and such treatment will not encourage or support the development of new storage in Ontario”

Further, Union identifies the benefits of its proposals at page 23. One of the benefits that Union identified would result from the Board forbearing was the encouragement of storage development. Specifically, Union's evidence states that:

“Forbearing from the regulation of storage in this manner will support and encourage the development of new storage within and connected to Ontario by providing storage providers with the opportunity to manage the costs and revenues associated with operating in the competitive storage market. It will continue to attract economic development of storage and related infrastructure in Ontario as well as gas volumes moving into and through Ontario which is critical to Ontario's security of supply.”

Witness: Steve Baker  
Question: June 26, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

UNION GAS LIMITED

Undertaking of Mark Isherwood  
To David Brown

To indicate whether Union has an objection to publishing information required under FERC regulation in relation to its own customers, should forbearance be granted.

-----  
Union was asked whether it would be willing to file customer information should “forbearance be granted”. On page 142 of the June 20, 2006 transcript, Mr. Baker was asked a similar question by Mr. Thompson. Mr. Baker’s response was

*“I think, going forward, that's certainly something we'd be prepared to look at in terms of -- we're certainly not going to disclose price or commercial details, but I think we would look to have some disclosure, whether that's on our website or through another forum.”*

Specifically for this undertaking, Union was asked to comment on providing similar information as mandated by FERC under S284.13 pages 745-746 (attached). The following FERC sections have been reviewed:

1. Under the Index of Customers (C.1 & 2 on page 745), FERC requires interstate pipelines and storage companies to provide for each firm contract;
  - i. Full legal name and identification number of shipper
  - ii. Applicable rate schedule
  - iii. Contract number
  - iv. Effective and expiration dates of the contract
  - v. For Transportation Service – Daily Contract Quantity  
For Storage Service – Maximum Storage Quantity
  - vi. Receipts and Delivery Points for transportation service
  - vii. Indicate as to whether contract includes negotiated rates
  - viii. Names of any agent or asset manager managing shipper transportation
  - ix. Any affiliate relationships to be identified

The above information is to be filed with FERC and posted on the company’s website no later than the first business day following the start of each calendar quarter. The posted listing will be a listing as of the first day of the calendar quarter. FERC requests the information be posted on the companies’ website in a downloadable format.

Witness: Mark Isherwood  
Question: June 26, 2006  
Answer: July 13, 2006  
Docket: EB-2005-0551

Under a forbearance framework, Union would be prepared to post the above for firm M12 transportation contracts and firm C1 storage contracts that are one year or longer in term, with the exception of item viii. Union often would not be aware of any formal ties between a shipper and an asset manager.

2. Under Section D.1 (page 745), pipelines are to post available capacity by receipt and delivery points. Union currently indicates on its website the overall system status using a “stop light” as a visual signal. A “green” signal indicates available capacity. Given Union’s system is a winter peaking system, interruptible capacity is available on all but a few days. This system has been accepted and used by customers for some time. Union does not believe any further enhancement is required at this time.
3. Under Section D.2 interstate pipelines must make an annual filing by March 1 on the estimate of the peak day transportation capacity, storage capacity and maximum daily delivery capability. Union would be prepared to make such a filing under a forbearance framework.
4. Under Section E.1-4, interstate pipelines must file within 30 days of the end of the injection and withdrawal season the following information – “Semi-Annual Storage Report”
  - i. Identity of each customer injecting and withdrawing gas and if there is any affiliate relationship.
  - ii. Rate Schedule under which the service was provided.
  - iii. The maximum storage quantity and withdrawal quantity applicable to each customer.
  - iv. The volume of gas injected and withdrawn by the customer during the period.
  - v. The unit charge and total revenue received during the period from each customer, noting any discounts.

Union would be prepared under a forbearance framework to file with the OEB items i. to iv. identified above for any firm contracts that are one year in length or longer. Item v. would be commercially sensitive information. It is Union’s understanding that where FERC grants market based rates to a storage provider, this information is not required to be filed.

Witness: Mark Isherwood  
Question: June 26, 2006  
Answer: July 13, 2006  
Docket: EB-2005-0551

## § 284.13

## 18 CFR Ch. I (4–1–05 Edition)

(B) Users must be able to search an entire document online for selected words, and must be able to copy selected portions of the documents; and

(C) Documents on the web site should be directly downloadable without the need for users to first view the documents on the web site.

(iii) If a pipeline uses a numeric or other designation to represent information, an electronic cross-reference table between the numeric or other designation and the information represented must be available to users, at a cost not to exceed reasonable shipping and handling.

(iv) A pipeline must provide the same content for all information regardless of the electronic format in which it is provided.

(v) A pipeline must maintain, for a period of three years, all information displayed and transactions conducted electronically under this section and be able to recover and regenerate all such electronic information and documents. The pipeline must make this archived information available in electronic form for a reasonable fee.

(vi) A pipeline must post notices of operational flow orders, critical periods, and other critical notices on its Internet web site and must notify affected parties of such notices in either of the following ways to be chosen by the affected party: Internet E-Mail or direct notification to the party's Internet URL address.

[Order 587, 61 FR 39068, July 26, 1996, as amended by Order 587-B, 62 FR 5525, Feb. 6, 1997; Order 587-C, 62 FR 10690, Mar. 10, 1997; Order 587-G, 63 FR 20095, Apr. 23, 1998; Order 587-H, 63 FR 39514, July 23, 1998; Order 587-I, 63 FR 53576, Oct. 6, 1998; Order 587-K, 64 FR 17278, Apr. 9, 1999. Redesignated and amended by Order 637, 65 FR 10220, Feb. 25, 2000; Order 637-A, 65 FR 35765, June 5, 2000; Order 587-M, 65 FR 77290, Dec. 11, 2000; Order 587-N, 67 FR 11916, Mar. 18, 2002; Order 587-O, 67 FR 30794, May 8, 2002; Order No. 587-R, 68 FR 13819, Mar. 21, 2003; 69 FR 18803, Apr. 9, 2004]

### § 284.13 Reporting requirements for interstate pipelines.

An interstate pipeline that provides transportation service under subparts B or G of this part must comply with the following reporting requirements.

(a) *Cross references.* The pipeline must comply with the requirements in Part

358, Part 250, and Part 260 of this chapter, where applicable.

(b) *Reports on firm and interruptible services.* An interstate pipeline must post the following information on its Internet web site, and provide the information in downloadable file formats, in conformity with § 284.12 of this part, and must maintain access to that information for a period not less than 90 days from the date of posting.

(1) For pipeline firm service and for release transactions under § 284.8, the pipeline must post with respect to each contract, or revision of a contract for service, the following information no later than the first nomination under a transaction:

(i) The full legal name of the shipper, and identification number, of the shipper receiving service under the contract, and the full legal name, and identification number, of the releasing shipper if a capacity release is involved or an indication that the pipeline is the seller of transportation capacity;

(ii) The contract number for the shipper receiving service under the contract, and, in addition, for released transactions, the contract number of the releasing shipper's contract;

(iii) The rate charged under each contract;

(iv) The maximum rate, and for capacity release transactions not subject to a maximum rate, the maximum rate that would be applicable to a comparable sale of pipeline services;

(v) The duration of the contract;

(vi) The receipt and delivery points and zones or segments covered by the contract, including the industry common code for each point, zone, or segment;

(vii) The contract quantity or the volumetric quantity under a volumetric release;

(viii) Special terms and conditions applicable to a capacity release transaction, including all aspects in which the contract deviates from the pipeline's tariff, and special details pertaining to a pipeline transportation contract, including whether the contract is a negotiated rate contract, conditions applicable to a discounted transportation contract, and all aspects in which the contract deviates from the pipeline's tariff.

(ix) Whether there is an affiliate relationship between the pipeline and the shipper or between the releasing and replacement shipper.

(2) For pipeline interruptible service, the pipeline must post on a daily basis no later than the first nomination for service under an interruptible agreement, the following information:

(i) The full legal name, and identification number, of the shipper receiving service;

(ii) The rate charged;

(iii) The maximum rate;

(iv) The receipt and delivery points covered between which the shipper is entitled to transport gas at the rate charged, including the industry common code for each point, zone, or segment;

(v) The quantity of gas the shipper is entitled to transport;

(vi) Special details pertaining to the agreement, including conditions applicable to a discounted transportation contract and all aspects in which the agreement deviates from the pipeline's tariff.

(vii) Whether the shipper is affiliated with the pipeline.

(c) *Index of customers.* (1) On the first business day of each calendar quarter, an interstate pipeline must file with the Commission an index of all its firm transportation and storage customers under contract as of the first day of the calendar quarter that complies with the requirements set forth by the Commission. The Commission will establish the requirements and format for such filing. The index of customers must also be posted on the pipeline's Internet web, in accordance with standards adopted in §284.12 of this part, and made available from the Internet web site in a downloadable format complying with the specifications established by the Commission. The information posted on the pipeline's Internet web site must be made available until the next quarterly index is posted.

(2) For each shipper receiving firm transportation or storage service, the index must include the following information:

(i) The full legal name, and identification number, of the shipper;

(ii) The applicable rate schedule number under which the service is being provided;

(iii) The contract number;

(iv) The effective and expiration dates of the contract;

(v) For transportation service, the maximum daily contract quantity (specify unit of measurement), and for storage service, the maximum storage quantity (specify unit of measurement);

(vi) The receipt and delivery points and the zones or segments covered by the contract in which the capacity is held, including the industry common code for each point, zone, or segment;

(vii) An indication as to whether the contract includes negotiated rates;

(viii) The name of any agent or asset manager managing a shipper's transportation service; and

(ix) Any affiliate relationship between the pipeline and a shipper or between the pipeline and a shipper's asset manager or agent.

(3) The requirements of this section do not apply to contracts which relate solely to the release of capacity under §284.8, unless the release is permanent.

(4) Pipelines that are not required to comply with the index of customers posting and filing requirements of this section must comply with the index of customer requirements applicable to transportation and sales under Part 157 as set forth under §154.111(b) and (c) of this chapter.

(5) The requirements for the electronic index can be obtained from the Federal Energy Regulatory Commission, Division of Information Services, Public Reference and Files Maintenance Branch, Washington, DC 20426.

(d) *Available capacity.* (1) An interstate pipeline must provide on its Internet web site and in downloadable file formats, in conformity with §284.12 of this part, equal and timely access to information relevant to the availability of all transportation services whenever capacity is scheduled, including, but not limited to, the availability of capacity at receipt points, on the mainline, at delivery points, and in storage fields, whether the capacity is available directly from the pipeline or through capacity release, the total design capacity of each point or segment

## § 284.14

on the system, the amount scheduled at each point or segment whenever capacity is scheduled, and all planned and actual service outages or reductions in service capacity.

(2) An interstate pipeline must make an annual filing by March 1 of each year showing the estimated peak day capacity of the pipeline's system, and the estimated storage capacity and maximum daily delivery capability of storage facilities under reasonably representative operating assumptions and the respective assignments of that capacity to the various firm services provided by the pipeline.

(e) *Semi-annual storage report.* Within 30 days of the end of each complete storage injection and withdrawal season, the interstate pipeline must file with the Commission a report of storage activity. The report must be signed under oath by a senior official, consist of an original and five conformed copies, and contain a summary of storage injection and withdrawal activities to include the following:

(1) The identity of each customer injecting gas into storage and/or withdrawing gas from storage, identifying any affiliation with the interstate pipeline;

(2) The rate schedule under which the storage injection or withdrawal service was performed;

(3) The maximum storage quantity and maximum daily withdrawal quantity applicable to each storage customer;

(4) For each storage customer, the volume of gas (in dekatherms) injected into and/or withdrawn from storage during the period; and (5) The unit charge and total revenues received during the injection/withdrawal period from each storage customer, noting the extent of any discounts permitted during the period.

(f) *Notice of bypass.* An interstate pipeline that provides transportation (except storage) to a customer that is located in the service area of a local distribution company and will not be delivering the customer's gas to that local distribution company, must file with the Commission, within thirty days after commencing such transportation, a statement that the interstate pipeline has notified the local distribu-

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tion company and the local distribution company's appropriate regulatory agency in writing of the proposed transportation prior to commencement.

[Order 637, 65 FR 10221, Feb. 25, 2000, as amended by Order 637-A, 65 FR 35765, June 5, 2000; Order 2004, 68 FR 69157, Dec. 11, 2003]

### § 284.14 [Reserved]

## Subpart B—Certain Transportation by Interstate Pipelines

### § 284.101 Applicability.

This subpart implements section 311(a)(1) of the NGPA and applies to the transportation of natural gas by any interstate pipeline on behalf of:

- (a) Any intrastate pipeline; or
- (b) Any local distribution company.

### § 284.102 Transportation by interstate pipelines.

(a) Subject to paragraphs (d) and (e) of this section, other provisions of this subpart, and the conditions of subpart A of this part, any interstate pipeline is authorized without prior Commission approval, to transport natural gas on behalf of:

- (1) Any intrastate pipeline; or
- (2) Any local distribution company.

(b) Any rates charged for transportation under this subpart may not exceed the just and reasonable rates established under subpart A of this part.

(c) An interstate pipeline that engages in transportation arrangements under this subpart must file reports in accordance with § 284.13 and § 284.106 of this chapter.

(d) Transportation of natural gas is not on behalf of an intrastate pipeline or local distribution company or authorized under this section unless:

(1) The intrastate pipeline or local distribution company has physical custody of and transports the natural gas at some point; or

(2) The intrastate pipeline or local distribution company holds title to the natural gas at some point, which may occur prior to, during, or after the time that the gas is being transported by the interstate pipeline, for a purpose related to its status and functions as an intrastate pipeline or its status and



UNION GAS LIMITED

Undertaking of Steve Baker  
To Michael Janigan

To inform whether split rate base study examining the feasibility of allocating Union's storage and transportation rate base between competitive and regulated activities was prepared.

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In its E.B.R.O. 486 Decision, the Board directed Union to examine the feasibility of allocating rate base between Union's storage and transportation Strategic Business Unit ("SBU") and its distribution SBU and to report on its conclusions in the next rates case. In the E.B.R.O. 493/494 proceeding, Union indicated that the results of its cost allocation study would be used to allocate rate base between the storage and transportation SBU and the distribution SBU. In its E.B.R.O. 493/494 Decision with Reasons, the Board indicated that Union should continue to work on the proper methodology for the allocation of rate base to SBUs so that there was a sound basis for consideration of any proposed change in Union's business structure. No change in the business structure was ever proposed so no study was ever prepared.

In its RP-1999-017 Decision with Reasons, the Board directed Union to file with the Board financial information segregated by line of business. Before a response to the Board's line of business reporting directive could be considered, Union assessed whether it made business sense to functionally realign the company by line of business. Based on this investigation, which identified that it would cost approximately \$19.3 million in capital to functionally realign the Company along its two primary lines of business: storage/transportation and distribution, Union did not propose that the Company be functionally realigned (RP-2002-0130, Exhibit B, Tab 7, pages 8-10 and Appendix A).

Witness: Steve Baker  
Question: June 26, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

UNION GAS LIMITED

Undertaking of Professor Richard Schwindt  
To Michael Janigan

To provide paper authored by Baziliauskas and Ross.

-----  
Please see attached copy of paper noted above.

Witness: Professor Richard Schwindt  
Question: June 26, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

as specific performance against a trustee who would otherwise seek to breach the implicit negative covenant contained in the licence agreement, a licensee would need to convince courts to establish a new line of jurisprudence on the basis that consistency in the law of remedies applicable in the pre- and post-bankruptcy contexts should be maintained. If courts decline to enforce such negative covenants, however, a licensee would need to argue that despite judicial authority to the contrary, a licence agreement is capable of conferring a proprietary interest in these limited circumstances and therefore should be excluded from the bankrupt's estate on the basis of the property exception to the *pari passu* imperative. Each of these alternatives is uncertain, however, and imposes additional unnecessary costs on the parties to licensing transactions. The solution preferred by the authors is that of a legislative amendment harmonizing Canadian law with the U.S. approach whereby licensees may elect to retain their rights under rejected contracts so long as the required royalty payments are maintained.

## LESSENING OF COMPETITION IN MERGERS UNDER THE COMPETITION ACT: UNILATERAL AND INTERDEPENDENCE EFFECTS

*Thomas W. Ross and Andy Baziliauskas\**

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\* Andy Baziliauskas is a Senior Consultant with LECC/Navigant Consulting, Inc. Thomas Ross is a Professor at the Faculty of Commerce and Business Administration, University of British Columbia. The authors gratefully acknowledge helpful discussions with Andrew Dick, Ron Giammarino, Don McFetridge, Robert Porter, Margaret Sanderson, Roger Ware, Gregory Werden, Robert Willig and many colleagues at the Canadian Competition Bureau. Very helpful comments on an earlier version of this article were received from Richard Annan, Neil Campbell, Paul Crampton, Richard Elliott, Don McFetridge, Raymond Pierce, Anindya Sen and Michael Trebilcock. Much of this work was completed while the first author was with the Competition Bureau and the second author was a Visiting Professor of Policy Modelling in the Institute for Policy Analysis at the University of Toronto. The views expressed here are solely those of the authors and are not necessarily those of any other directors, Principals, affiliates or staff of LECC/Navigant Consulting Inc. The authors are also grateful for the financial support of the SFU-UBC Centre for the Study of Government and Business, the Institute for Policy Analysis at the University of Toronto, the Social Sciences and Humanities Research Council of Canada, and the UBC Hampton Fund as well as for the capable research assistance of Andrew Tepperman and the editorial assistance of Sarah Yao and Katherine Hensel, LL.B. II, University of Toronto.

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## I. INTRODUCTION

A merger law permitting authorities to block or restructure anticompetitive mergers is a core element of most antitrust policies of developed nations. Distinguishing merger law from most of the rest of antitrust is the fact that it is prophylactic in nature — rather than attempting to control the exercise or abuse of market power, it seeks to prevent its creation in the first place. It does this because market power imposes certain costs on society: the well-known effects of accumulated market power include higher prices with the associated transfers of wealth from buyers to sellers; reduced levels of service, product quality and innovation; inefficiently lower volumes of trade; and higher costs of production as sellers faced with less competition become less efficient.<sup>1</sup>

1. These effects are not unrelated to each other. For a fuller discussion, see any good industrial organization text, e.g., Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 2nd ed. (New York, Harper Collins, 1994), or F.M. Scherer and David Ross, *Industrial Market Structure and Industrial Performance*, 3rd ed. (Boston, Houghton Mifflin, 1990). To most antitrust economists, the transfer of wealth from consumers to producers is not a social cost since it does not reduce total social wealth. Their concern is more typically focused on the deadweight loss created when higher

To justify an active merger policy, however, it must be the case that the structural changes in a market due to an impending merger will likely build market power.<sup>2</sup> While not uncontroversial, the potential for such effects finds support in both economic theory and empirical work.<sup>3</sup> The challenge for economic theory here is to explain the conditions under which an increase in concentration is likely to lead to the above-mentioned social costs.

This article presents a review of the economic theory that explains how mergers can lead to a lessening of competition, resulting in higher prices or other harm to consumers. It goes on to apply this theory in a discussion of current Canadian law and policy and of recent Canadian cases.

A troubled history of enforcement in Canada resulted in the creation of a very new merger law and review process in the Competition Act of 1986.<sup>4</sup> Early merger cases in the United States centred primarily around market definition and the measurement of concentration, with high levels of concentration creating a presumption that competition would be lessened substantially. Arguments advanced by Harold Demsetz and others challenged the view that

prices lead to fewer units being bought and sold. In some jurisdictions, however, transfers from consumers to producers are not viewed as harmless.

2. In some cases, the building of market power might seem to come more from behavioural changes than from structural changes. For example, a merger that removes a small but aggressive "maverick" firm might have little effect on the structure of a market (as measured by market shares) but might nevertheless lessen competition significantly.
3. Schmalensee reviews empirical evidence derived from studies of concentration and price levels (or profits) across a variety of industries: see Richard Schmalensee, "Inter-Industry Studies of Structure and Performance", in R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization* (Amsterdam and New York, North Holland, 1989). Other work has focused on the relationship between prices and concentration in localized markets for the same good or service. Perhaps no industry has been as studied as intensively this way as banking. See, e.g., Leonard Weiss, "A Review of Concentration-Price Studies in Banking", Chapter 12 in Leonard Weiss, ed., *Concentration and Price* (Cambridge, MIT Press, 1989), pp. 219-54; Stephen A. Rhodes, "Competition and Bank Mergers: Directions for Analysis from Available Evidence" (1996), 41 *Antitrust Bulletin* 339; and Allen N. Berger and Timothy H. Hannan, "The Price-Concentration Relationship in Banking" (1989), 71 *Rev. of Economics and Statistics* 291.
4. For a review of the history, see, e.g., Christopher Green, *Canadian Industrial Organization and Policy* (Toronto, McGraw-Hill Ryerson, 1990), pp. 300-84; Bruce Dunlop, D. McQueen and Michael Trebilcock, *Canadian Competition Policy: A Legal and Economic Analysis* (Aurora, Ont., Canada Law Book, 1987); or William T. Stanbury, "The Legislative Development of Canadian Competition Policy, 1888-1981" (1981), 2 *Can. Comp. Pol. Rec.* 1. A more detailed treatment focused on the merger area is contained in Paul Crampton, *Mergers and the Competition Act* (Toronto, Carswell, 1990), c. 1.

industry concentration was always detrimental to consumers.<sup>5</sup> Demsetz' efficiency hypothesis counters that some industries may be concentrated simply because a few firms are more efficient than the rest and that this efficiency leads to their securing high market shares and to market concentration. In this view, competition policy that seeks to limit concentration penalizes firms for lowering costs and providing more valuable goods and services to consumers and hurts consumers in the long run.

The recognition that not all concentrating structural changes should be prohibited has led courts, law-makers and antitrust enforcement agencies to seek out ways beyond the mere measurement of concentration to differentiate between pro- and anti-competitive mergers. For example, an assessment of the barriers to entry is now a standard feature of merger analysis. In the 1960s, the American enforcement agencies, influenced by the work of George Stigler,<sup>6</sup> introduced into their analyses a number of factors that could facilitate collusion after the merger. More recent developments include the explicit consideration of the potential for the unilateral exercise of market power by merging firms, particularly in markets featuring differentiated products. This analysis often involves explicit economic modeling, sometimes including simulation, of competition in a market that allows the analyst to make explicit predictions of the price effects of a merger.

Advances in economic theory and econometrics have occurred concurrently with, and have in many ways facilitated, the movement towards a more discriminating approach to merger policy. In addition to an increased emphasis on barriers to entry and factors that facilitate collusion, antitrust enforcement has seen an increase in the application of theories of anti-competitive harm in order to identify mergers that are likely to raise prices or otherwise harm consumers.

The remainder of this article is structured as follows. The next section reviews the economic theory behind the lessening of competition via either unilateral market power or increased interdependence post-merger. In light of this theory, Section III reviews the current Canadian approach, focusing on the text of the Competition Act, the Competition Bureau's enforcement policy as described by

5. See Harold Demsetz, "Two Systems of Belief about Monopoly", in H. Goldschmid, M. Mann and F. Weston, eds., *Industrial Concentration: The New Learning* (Boston, Little, Brown, 1974).

6. George J. Stigler, "A Theory of Oligopoly" (1964), 72 J. of Political Econ. 44.

the *Merger Enforcement Guidelines* (MEGs) and the more recent *Merger Enforcement Guidelines as Applied to a Bank Merger* (BMEGs), and the few decisions in merger cases under the Competition Act. The final section offers a summary and our conclusions.

## II. THE ECONOMIC THEORY OF LESSENING OF COMPETITION

Mergers will not be socially damaging under certain conditions. If the market is competitive both before and after the merger, perhaps because of the presence of a large number of firms and/or low barriers to further entry, the increase in concentration will not create lasting market power. And if the merger generates significant efficiencies it could be that the savings in resources associated with the combination will justify some increase in market power.<sup>7</sup> Just how efficiency considerations are to be weighed against market power effects will vary from jurisdiction to jurisdiction but the principle that efficiencies can offset market power remains, at least in economic theory.<sup>8</sup>

In other cases — for example, in oligopolies with barriers to entry — mergers can raise concerns about the build-up of market power. While this market power can be manifested in a number of ways, for expositional ease we will use "price increases" to represent the variety of harms possible. Both the Canadian and American antitrust agencies' merger guidelines outline two categories of potential anticompetitive effects arising from mergers, namely unilateral and interdependence effects.<sup>9</sup> Unilateral effects can result when the merger moves the control of more output into the hands of one decision-making unit, potentially giving this firm a greater influence on market price than it had previously and causing an increase in the market equilibrium price (or prices). Alternatively, by removing one player and further concentrating the market, a merger can increase the possibility that the remaining players will

7. For the classic analysis of the trade-off, see Oliver E. Williamson, "Economies as an Antitrust Defense: The Welfare Tradeoffs" (1968), 58 Am. Econ. Rev. 18, and "Economies as an Antitrust Defense Revisited" (1977), 125 U. Pa. L. Rev. 699.

8. On the Canadian approach, and the challenges it faces, see, e.g., Donald G. McFetridge, "The Prospects for the Efficiency Defence" (1996), 26 C.B.L.J. 321; Crampton, *supra*, footnote 4; and Lawrence P. Schwartz, "The 'Price Standard' or the 'Efficiency Standard'? Comments on the Hillsdown Decision" (1992), Can. Comp. Pol. Rec. 42.

9. Director of Investigation and Research, Competition Bureau, *Merger Enforcement Guidelines* (Ottawa: Industry Canada, 1991), and U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (Washington, 1992), revised with inclusion of new Section 4 on efficiencies in 1997.

compete less aggressively. This represents a concern over the expansion of collective market power through enhanced interdependence among firms in the market.<sup>10</sup>

Unilateral effects concerns arise most naturally, though not exclusively, in cases in which a merger creates a dominant firm and in mergers in differentiated products industries of firms that produce each other's next best substitutes. In such cases, the merger can convey upon the firm the power to profitably raise prices even absent any accommodating response on the part of other firms. Depending on market conditions and the nature of competition among firms, the merger can also lead to an increase in the prices of all firms in the market.

Interdependence or co-ordinated effects arise when a merger reduces the competitive vigour in a market by removing a particularly aggressive competitor or by simply facilitating the reaching of understandings, explicit or otherwise, to compete less aggressively.<sup>11</sup>

This section reviews the economic theory behind these two types of anticompetitive effects. A prior question, however, asks why we bother to make these distinctions. That is, why do we care whether a merger is anticompetitive because it poses unilateral rather than interdependence risks? As will become clear, the value of distinguishing between the two types of problems lies in the fact that there are different sets of theories and models for each. The theories, in turn, direct us to look for different types of evidence in the two cases. In addition, the different theories do not all enjoy the same degree of acceptance among antitrust scholars,

10. The American guidelines refer to interdependence as "co-ordinated interaction": see U.S. Department of Justice and Federal Trade Commission, *ibid.*, at s. 2.1.

11. Willig explains:

Unilateral effects are changes in the actions of the merging firms that would be profitable for them as a result of the merger if the nonparties did not alter their actions or if the nonparties reacted unilaterally themselves. Coordinated effects are changes in the actions of merging firms that would be profitable for them as a result of the merger only if the changes are accompanied by the alterations in the actions of the nonparties that are motivated in part by fears of reprisals.

See Robert D. Willig, "Merger Analysis, Industrial Organization Theory, and Merger Guidelines" (1991), *Brookings Papers: Microeconomics* 1991, pp. 281-332, at p. 292.

suggesting that some results from the forward-looking process of merger review may be less reliable than others.<sup>12</sup>

We might also ask why theories of competitive effects are important at all — why can we not simply impose some simple structural (*e.g.* based upon market shares) thresholds and use them to approve or reject mergers? As discussed above, high market shares or high levels of concentration are not sufficient to condemn a merger if the objective is to prevent only those mergers that increase prices or reduce economic welfare. Then, if some mergers in concentrated markets will lead to higher prices, while others will not, how do we differentiate between the two? Concentration statistics together with an evaluation of barriers to entry may be sufficient in some cases; economic theory tells us that mergers in highly concentrated markets with significant barriers to new entry are likely to lead to higher prices absent substantial efficiencies. More difficult to assess are mergers in moderately concentrated industries. Economic theory cannot be called upon to conclude that all mergers in such industries will lead to significant price increases — some will and some will not. What theory can do, as discussed below, is identify the factors that make price increases more or less likely.

Furthermore, most merger proposals are accompanied by claims that significant cost savings are possible only if the merger is allowed to proceed. When these claims are credible, the magnitude of price increases can become even more important because the harm from potential price increases must be compared to the benefits of lower costs. This is true whatever the welfare standard is. If one adopts a total welfare standard, the deadweight loss associated with a merger will depend on, among other factors, the expected price increase. When a consumer welfare standard is adopted, and a merger is expected to decrease marginal costs, the efficiencies will put downward pressure on prices even as the

12. The discussion of the various theories will be very brief. The reader interested in more detail should consult an industrial organization text such as Jeffrey Church and Roger Ware, *Industrial Organization: A Strategic Approach* (San Francisco, McGraw-Hill/Irwin, 2000); Carlton and Perloff, *supra*, footnote 1; or the chapter by Carl Shapiro, "Theories of Oligopoly Behavior", in R. Schmalensee and Robert D. Willig, eds., *Handbook of Industrial Organization*, *supra*, footnote 3.

reduced competition tends to push them up.<sup>13</sup> Economic theory can help in predicting the net effect of these two forces.<sup>14</sup>

### 1. Unilateral Effects

While drawing general distinctions between unilateral and interdependence effects is rather intuitive and straightforward, defining the precise boundary between the two is somewhat less so. As indicated above, the term "unilateral effects" refers to the potential for the merger to increase market prices even without any sort of understanding with other firms in the relevant market. This is seen most clearly in the *dominant firm model* in which there is one firm, typically much larger than the rest, that sets the market price, which is then taken as a given and fixed by all other sellers.<sup>15</sup> The other sellers typically have limited capacities in this model, so at this price they cannot supply the whole market. A merger or series of mergers that creates this dominant firm-leader would provide the

13. The MEGs and the *Merger Enforcement Guidelines as Applied to a Bank Merger* (BMEGs) indicate that the Competition Bureau will adopt a total surplus standard when assessing the effects of a merger: see *supra*, footnote 9, and Director of Investigation and Research, Competition Bureau, *Merger Enforcement Guidelines as Applied to a Bank Merger* (Ottawa, Industry Canada, 1998). Under this standard, a merger resulting in anti-competitive harm to consumers can still go unchallenged if the cost savings to the firms resulting from the merger outweigh the harm to consumers. However, documents filed in the recent *Propane* case suggest that the bureau may be moving away from the application of this standard in some circumstances. See also Gwilym Allen, *The Treatment of Efficiencies in Merger Analysis* (notes from an address given to the conference "Meet the Competition Bureau", Toronto, May 3, 1999), published on the Competition Bureau website at <http://strategis.ic.gc.ca/SSG/ct01548e.html>, June 25, 1999.

The U.S. enforcement agencies use a price standard in evaluating efficiencies. The new section on efficiencies in the revised *Horizontal Merger Guidelines* states that "[T]he Agency will not challenge a merger if cognizable efficiencies are of a character and magnitude such that the merger is not likely to be anticompetitive in any relevant market. To make the requisite determination, the Agency considers whether cognizable efficiencies likely would be sufficient to reverse the merger's potential to harm consumers in the relevant market by preventing price increases in that market." Cognizable efficiencies are "merger-specific efficiencies that have been verified and do not arise from anticompetitive reductions in output or service". See "Revised Section 4 Horizontal Merger Guidelines Issued by the U.S. Department of Justice and the Federal Trade Commission" (April 8, 1997).

14. For a discussion of how the various welfare standards would affect merger review, see Lin Bian and Donald McFetridge, "The Efficiencies Defence in Merger Cases: Implications of Alternate Standards" (Carleton Industrial Organization Research Unit Working Paper 97-03, Department of Economics, Carleton University, 1997) and Paul Crampton, "Alternative Approaches to Competition Law: Consumer Surplus, Total Surplus and Total Welfare" (1994), 17 *World Comp. Law and Econ. Rev.* 55.

15. That is, they do not believe that any quantity they choose to produce will have any effect on the price obtained in the market.

cleanest example of anticompetitive unilateral effects. The dominant firm, once created, would raise price above the competitive level and make greater profits even though all other firms are acting as perfect competitors, taking price as given and selling as much as they can.<sup>16</sup>

In the more famous *Cournot oligopoly model* of competition, firms select the quantities they will produce to maximize their individual profits and there is no collusion or co-operation. However, they all take into account the quantities they expect their rivals to produce and the depressing effect on price of expanding total output. Thus, no firm in this model behaves as a perfect competitor. The quantities in the Cournot model are termed "strategic substitutes", meaning that an anticipated expansion by one firm would be met with contractions by other firms. As a result, while a merger in a Cournot model, absent large efficiencies, will lead the merging firms to reduce output below the combined pre-merger levels, other firms will expand to make up some of the reduction.<sup>17</sup> Thus, the rivals' response cannot be said to be accommodating.<sup>18</sup>

A model that shares certain features of the dominant firm and Cournot models and that can be used to analyze some markets is the *Stackelberg oligopoly model*. Here, firms select their quantities, as in the Cournot model, and all firms appreciate the effect their outputs will have on price. As in the dominant firm model, however, one firm is the "leader". It selects (and commits to) its rate of output first, leaving the other firms (the "followers") to react to that quantity in making their own decisions. Like in the

16. The capacities of the firms in the "competitive fringe" need not be fixed literally. It is enough that their marginal costs are rising sufficiently quickly that they can sell all they want to sell at the dominant firm's price without taking so much market that the price increase is unprofitable for the dominant firm.

17. There is a substantial literature on the profitability of mergers in Cournot and other models of competition, beginning with Steven Salant, Sheldon Switzer and Robert J. Reynolds, "Losses from Horizontal Merger: the Effects of an Exogenous Change in Industry Structure on Cournot-Nash Equilibrium" (1983), 48 *Quarterly J. Econ.* 185, and including Martin K. Perry and Robert H. Porter, "Oligopoly and the Incentive for Horizontal Merger" (1985), 75 *Am. Econ. Rev.* 219; Raymond Deneckere and Carl Davidson, "Incentives to Form Coalitions with Bertrand Competition" (1985), 16 *Rand J. Econ.* 473; and Joseph Farrell and Carl Shapiro, "Horizontal Mergers: An Equilibrium Analysis" (1990), 80 *Am. Econ. Rev.* 107.

18. The extent to which the other firms will expand output will depend on their costs and the shape of the market demand curve. It is important to recognize, however, that price will typically rise after a merger in Cournot oligopoly — the expansion by non-merging firms is not enough to make up for the contraction by the merging firms.

Cournot model, mergers (either between two followers or the leader and a follower) will typically lead the non-merging firms to expand output even as the merging firms contract theirs.

How one categorizes the effect of mergers in the *Bertrand oligopoly model* with differentiated products depends on one's precise definition of "accommodation". In this model, each firm chooses its price to maximize its own profits, taking into account the prices it expects its rivals to be charging for their related (but not identical) products. The prices charged by the various firms are, in this model, typically "strategic complements", meaning that when a firm expects its rivals to raise their prices, it will be in its interest to increase its price as well. As a result of a merger in a Bertrand market, the merged firm will typically raise its price, which will lead its rivals to raise theirs. While this would appear to be an accommodating response, it is based solely on each firm's maximization of its own profits and not on any co-operative arrangement between firms.<sup>19</sup>

With an appreciation of the kinds of models that can underlie a concern for unilateral effects, we can consider the sorts of evidence that would be helpful. Certainly the pre-merger market shares of the merging firms will be useful, as would any evidence regarding the extent to which there would be some leakage of market share post-merger,<sup>20</sup> although the information content of market shares

19. Another way to express the difference between unilateral and co-ordinated effects, as explained by Willig, *supra*, footnote 11, and others, is to argue that unilateral effects can be represented in a static oligopoly model in which the actions of firms do not depend on histories of rivals' actions. Allowing history-dependent strategies permits punishments that are the basis for co-ordinated behaviour. This way of looking at the distinction recalls the struggles to distinguish between collusion and conscious parallelism in the literature on the "oligopoly problem". See, e.g., John Howard and William T. Stanbury, "Oligopoly Power, Co-ordination and Conscious Parallelism", c. 8 in F. Mathewson, M. Trebilcock and M. Walker, eds., *The Law and Economics of Competition Policy* (Vancouver: The Fraser Institute, 1990), pp. 219-94; William T. Stanbury and G.B. Reschenthaler, "Oligopoly and Conscious Parallelism: Theory, Policy and the Canadian Cases" (1977), 15 *Osgoode Hall L.J.* 617; Donald F. Turner, "The Definition of Agreements Under the Sherman Act: Conscious Parallelism and Refusals to Deal" (1962), 75 *Harvard L. Rev.* 655; Richard A. Posner, "Oligopoly and the Antitrust Laws: A Suggested Approach" (1969), 21 *Stanford L. Rev.* 1562-606; Jonathan B. Baker, "Two Sherman Act section 1 dilemmas: parallel pricing, the oligopoly problem, and contemporary economic theory" (1993), 38 *Antitrust Bulletin* 143; John E. Lopatka, "Solving the oligopoly problem: Turner's try" (1996), 41 *Antitrust Bulletin* 843; and Dennis A. Yao and Susan S. DeSanti, "Game theory and the legal analysis of tacit collusion" (1993), 38 *Antitrust Bulletin* 113. We return to this point below.

20. Some buyers adopt a strategy of deliberately spreading their purchases among a number of sellers. In such cases, even if prices did not change at all, the merged firm would find its post-merger market share reduced from the sum of the pre-merger shares.

varies widely among industries. In a homogenous products market, the pre-merger market shares of the merged firm are a good measure of the benefit it would derive from restricting output. A firm that contemplates restricting output to raise price post-merger has to weigh the costs, less output sold, with the benefits of a higher price and greater profits on the remaining sales. In the Cournot model, the most-applied model when describing competition in homogeneous products industries, firms with the lowest marginal costs gain the highest market share. Mergers among firms with high market shares leave firms with relatively small market shares, and by implication high marginal costs, as competitors. Since firms with high costs are less able to discipline post-merger price increases, a merger among firms with high pre-merger shares is more problematic than a merger among low-share firms, all else being equal.<sup>21</sup>

Information about the ability of firms in the market to expand output is also useful when determining whether prices are likely to increase post-merger. In general, when non-merging firms can increase output without significantly increasing their marginal costs, post-merger price increases will be lower. The reasoning here is straightforward. Firms are less inclined to increase price if their competitors can absorb additional sales to customers who switch suppliers in response to the price increase. The ability to absorb these additional purchases depends largely on the costs of expanding output: the higher the costs of servicing incremental customers, the less effectively will competitors constrain a price increase. Mergers in markets in which non-merging firms have excess capacity — the ability to increase output without large increases in marginal costs — are less likely to result in price increases. Conversely, when competitors are capacity-constrained, or when incremental costs are high (*i.e.*, marginal costs are increasing sharply), post-merger price increases are likely to be higher.

Interpreting market shares when firms in a market produce differentiated outputs is less straightforward. In these types of markets, estimates of the substitutability of the products of two merging firms for each other relative to the substitutability of the outputs of other firms in the market for the products of the merging

21. See Farrell and Shapiro, *supra*, footnote 17, for an analysis of mergers in a Cournot oligopoly.



firms can be much more informative than simple market shares.<sup>22</sup> It is easy to construct scenarios in which theory would predict that a merger among firms with high market shares but whose outputs are not closely substitutable leads to a lower price increase than a merger among firms with low market shares but whose products are highly substitutable for each other. The U.S. guidelines anticipate situations of this kind:

Purchasers of one of the merging firms' products may be more or less likely to make the other their second choice than market shares alone would indicate. The market shares of the merging firms' products may understate the competitive effect of concern, when, for example, the products of the merging firms are relatively more similar in their various attributes to one another than to other products in the relevant market. On the other hand, the market shares alone may overstate the competitive effects of concern when, for example, the relevant products are less similar in their attributes to one another than to other products in the relevant market.<sup>23</sup>

The BMEGs, unlike the MEGs, also explicitly name the substitutability among the products of the merging firms as important factors to be considered when evaluating the competitive effects of a merger.<sup>24</sup>

Finally, a consideration of barriers to entry is always an important part of the evaluation of the potential competitive effects of a merger, unilateral or interdependent.<sup>25</sup> With low barriers to entry, current market shares are relatively uninformative — increases in price would simply be met by entry and the price increase would not be profitable. In the limiting case of a "contestable market" even a merger to monopoly would not result in prices above competitive levels.<sup>26</sup>

22. This observation is the main theoretical justification for using simulations rather than a structural analysis to estimate the effects of mergers in differentiated products industries: see Gregory J. Werden and Luke M. Froeb, "Simulation as an Alternative to Structural Merger Policy in Differentiated Products Industries", in M. Coate and A. Kleit, eds., *The Economics of the Antitrust Process* (Boston, Kluwer, 1996), and Gregory J. Werden, "Simulating Unilateral Competitive Effects from Differentiated Products Mergers" (1997), 11 *Antitrust* 27.

23. *Supra*, footnote 9, at s. 2.2.

24. *Supra*, footnote 13.

25. On barriers to entry and exit see, e.g., Richard Gilbert, "Barriers to Mobility and the Value of Incumbency", c. 8 in R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization*, *supra*, footnote 3; Paul Geroski, Richard Gilbert and Alexis Jacquemin, *Barriers to Entry and Strategic Competition* (Chur, Switzerland, Harwood Academic Publishers, 1990); and Thomas W. Ross, "Barriers to Entry", in R.S. Khemani, ed., *A Framework for the Implementation of Competition Law-Policy* (Washington, World Bank, 1998).

26. See William J. Baumol, John Panzar and Robert D. Willig, *Contestable Markets and the Theory of Industrial Structure* (New York, Harcourt Brace Jovanovich, 1982).

### (a) Predicting Unilateral Effects

Given the rather precise predictions generated by the theoretical models of oligopoly described briefly above, with enough data it is possible to simulate the effects of the merger and predict its effect on price, output, consumers' surplus and profits.<sup>27</sup> This is a developing area of antitrust enforcement policy, though the simulations are not necessarily used as substitutes for more traditional techniques, but often as complements.<sup>28</sup> Our discussion here will be very brief; the interested reader is urged to follow up with the references provided.

Csorgo and Sanderson review recent developments in the empirical estimation of the effects of mergers, with particular reference to mergers in differentiated products industries.<sup>29</sup> Techniques have been developed and applied that employ versions of the dominant firm model and the Bertrand model. With each approach there are two basic steps, referred to as the "front and back" ends of the analysis. In the front end, basic parameters of demand and (possibly) cost are estimated from available data. These parameters would include own and cross-price elasticities and, depending on the approach, marginal costs. While this has become easier to do for some consumer goods given the relatively recent availability of scanner data, there are still a number of issues of methodology and application to be resolved.

In the back end, these estimates are combined with a model of oligopoly to predict the effect of the merger. In some cases, if we are willing to make strong assumptions, the data requirements can be fairly modest. For example, a model of homogeneous product Cournot competition is easily used to simulate a merger if we make certain assumptions about the nature of costs and the shape

27. Oligopoly theory is precise in one sense and famously imprecise in another. By "precise" here we mean that *each* oligopoly model will make a precise prediction when we plug in data on market demand and costs. However, there is no single generally accepted oligopoly model and different models can make *very* different predictions.

28. The use of these techniques has been quite limited in Canada to date, but Csorgo and Sanderson expect that to change. See Lilla Csorgo and Margaret Sanderson, *Differentiated Products Mergers: Recent Experience in Canada and the U.S.* (paper delivered to the Competition Law Section Meetings of the Canadian Bar Association, Ottawa, Canada, September 24-25, 1998).

29. See *ibid.* See also Thomas Overstreet, James Keyte and John Gale, "Understanding Econometric Analysis of the Price Effects of Mergers Involving Differentiated Products" (1996), 10 *Antitrust* 30.

of the demand curve.<sup>30</sup> The Diversion Ratio approach, described by Shapiro,<sup>31</sup> focuses on the closeness of the products of the merging firms and estimates the effect on price of the merger using data on the proportion of consumers who would switch from one to the other in response to price increases. More ambitious models of differentiated product Bertrand competition are currently being used by the antitrust agencies in the United States as part of their merger review process.<sup>32</sup>

One of the interesting features of these new simulation techniques is the reduced emphasis they place on the contentious process of defining the relevant market.<sup>33</sup> Traditional structural analysis typically requires that firms be classified as either "in" the market or "outside" the market and the resulting market shares do not reflect the impact of certain firms on certain other firms in differentiated products markets. The new approaches either do away with market definition altogether by focusing solely on the relationship between the products of the merged firms (as in the Diversion Ratio approach), or they allow for firms to have varying degrees of influence on the pricing of the merging firms. While some decision must still be made about which products to include in the simulation, the errors flowing from failing to include some distant competitor will generally be small.<sup>34</sup>

30. This can be done, for example, using a program accessed on the web page of the SFU-UBC Centre for the Study of Government and Business: <http://csgb.ubc.ca/ccpp/>. To simulate the merger, all one needs to provide are data on market shares for every firm in the market, the current market price and total unit sales (or dollar sales), and an estimate of the price elasticity of demand. No data on costs need be provided as the program can infer the costs necessary to generate the market shares supplied. Needless to say, there are a number of very strong assumptions needed to support the use of this approach.

31. See Carl Shapiro, "Mergers with Differentiated Products" (1996), 10 *Antitrust* 23.

32. On simulating mergers using this model see, e.g., Werden and Froeb, and Werden, both *supra*, footnote 22. Other online simulation programs can be reached at <http://www.antitrust.org>.

33. However, James Rill makes a strong case for not abandoning the traditional task of market definition. For example, he claims that the new empirical approaches "take insufficient account of market dynamics, and are limited by the assumptions and data on which they rely": see James F. Rill, "Practicing What they Preach: One Lawyer's View of Econometric Models in Differentiated Products Mergers" (1997), 5 *Geo. Mason U.L. Rev.* 393 at p. 393.

34. One has to be a little cautious here, as there can be cases in which there are a number of excluded firms that, though individually too small to have much of an effect, when taken together can significantly constrain the ability of other firms to profitably raise price.

## (b) Unilateral Concerns in Canadian and American Cases

Section III contains a discussion of the relative importance of unilateral and interdependence concerns in Canadian cases. In Canada, unilateral concerns have dominated the treatment of merger cases under the Competition Act. In the United States, this has not been the case. It was the 1992 DOJ-FTC Merger Guidelines that stated explicitly, for the first time, the agencies' concern that some mergers might lead to unilateral exercises of market power.<sup>35</sup> In contrast to the period prior to 1992, a considerable amount of enforcement activity has recently been directed at differentiated products industries and focused on concerns of unilateral effects.<sup>36</sup>

## 2. Interdependence

Interdependence theories involve a range of behaviours that serve to elevate prices. In all of these theories, firms recognize their interdependence when making their own decisions. Specifically, in evaluating the desirability of a certain price increase or decrease, a firm will take into account the likely reactions of its rivals. A reduction in price will be much less profitable if rivals follow quickly with their own price reductions, and it may even be disastrous if a price war ensues.

Interdependence can manifest itself in a number of ways, and is typically assigned to three general categories: (i) explicit (or "express") collusion; (ii) tacit collusion and (iii) conscious parallelism.

### (a) Explicit Collusion

Explicit collusion refers to, more or less, the sort of conduct reached by s. 45 (and s. 47) of the Competition Act and Section 1

35. This statement requires some qualification. Section 3.12 of the 1984 Department of Justice Guidelines contained a "leading firm proviso" which indicated that, in order to resist the development of dominant firms, the department was likely to challenge the merger of any firm with a market share of at least one percent with the leading firm in the market, providing the leading firm had a market share of at least 35%. This little-used section is not part of the 1992 Guidelines: see Kevin J. Arquit, "Perspectives on the 1992 U.S. Government Horizontal Merger Guidelines" (1992), 61 *Antitrust L.J.* 121.

36. A former Director of the Bureau of Economics at the Federal Trade Commission claims that "Unilateral theories are now by far the most common in the internal analyses of the antitrust enforcement agencies, particularly among agency economists." See Jonathan B. Baker, "Unilateral Competitive Effects Theories in Merger Analysis" (1997), 11 *Antitrust* 21. For references to some of the cases, see Csorgo and Sanderson, *supra*, footnote 28, and Constance K. Robinson, "Quantifying Unilateral Effects in Investigations and Cases" (1997), 53 *Geo. Mason U.L. Rev.* 387.

of the U.S. Sherman Act. These are conspiracies to reduce competition between firms. The agreements can take any number of forms including price fixing, bid-rigging, market allocation and customer allocation. They are typically designed through direct communication between the parties and include well-defined roles and responsibilities for each of the parties.

The modern theory of explicit collusion derives from Stigler's<sup>37</sup> pioneering work, which has been embellished somewhat by modern game theory.<sup>38</sup> Stigler noted that firms wishing to establish an agreement to restrict competition face three problems. First, they must come to an agreement — for example, to find a set of prices for the variety of products they offer — to which they are all prepared to hold. Stigler recognized that when an agreement is successful at raising prices above competitive levels, each member of the collusive group will generally have an incentive to expand its profitable sales by cheating via undercutting price or otherwise stealing business from its rivals. Thus, the second problem relates to finding a way to monitor each other's compliance with the agreement. Finally, they must have a way to deal with cheating — that is, some way of punishing those who defect from the agreement.

In contrast to the precise predictions of price effects provided by models of unilateral market power, economic cartel theory provides only fairly general advice about the conditions that facilitate collusion. These conditions, which also relate to lesser forms of interdependence, are described below. While this lack of precision is unfortunate, and may have played some part in the recent shift of enforcement attention in the United States toward cases involving unilateral market power, it should not be a reason for dismissing concerns regarding co-ordinated effects.<sup>39</sup> It may, however, argue for considerable caution in attempts to predict heightened risks of interdependent behaviour.

37. See Stigler, *supra*, footnote 6.

38. See Baker, *supra*, footnote 19.

39. There is, in fact, no evidence in speeches or policy statements that the American authorities are losing interest in taking cases based upon co-ordinated effects. More likely they are moving toward a "balanced portfolio" of the two types of cases. This would be a reasonable prediction for the future direction of the Competition Bureau as well. In our view, this represents a sort of convergence between the approaches taken in the two countries.

#### (b) Tacit Collusion

Tacit collusion is more difficult to define. Indeed, as Howard and Stanbury point out, the term is used in a variety of ways by economists, lawyers and judges.<sup>40</sup> In some cases, allegedly explicit agreements have been referred to by courts as tacit when there has been no direct evidence of the conspiracy and the case is built on purely circumstantial evidence.<sup>41</sup> In this sense, the term "tacit" was describing the evidence, not the agreement.

More conventionally now, antitrust scholars view tacit collusion as something more like explicit collusion but without any direct, explicit communication between the parties — "a meeting of the minds without the meeting". Even absent explicit communication regarding prices to charge, markets to serve and so on, there are ways firms can communicate ideas and signal intentions, and these means can be employed to fashion an understanding. Signaling and communication can take place through the repeated interactions of the firms — a price cut made by one firm met with bigger cuts by its rivals, entry by A into B's most important market met with counter-entry by B into a market dominated by A, etc. Communication can be somewhat more explicit without triggering conspiracy laws, as when the president of a leading firm, in a public address, laments the excess capacity in the market and indicates his firm's interest in closing some facilities. By definition, tacit agreements must be inferred from circumstantial evidence as there is no trail, paper or otherwise, of a formal agreement.

Recent developments in game theory related to "supergames" have provided economists with a formal way to model tacit collusion.<sup>42</sup> Supergames in this context model the repeated interactions

40. See *supra*, footnote 19.

41. See William E. Kovacic, "The identification and proof of horizontal agreements under the antitrust laws" (1993), 38 *Antitrust Bulletin* 5.

42. For important developments in the theory of supergames as applied to oligopolies, see, e.g., James W. Friedman, *Oligopoly and the Theory of Games* (Amsterdam, North Holland, 1977); Robert H. Porter, "Optimal Cartel Trigger Price Strategies" (1983), 29 *J. Econ. Theory* 313; Edward J. Green and Robert H. Porter, "Non-Cooperative Collusion under Imperfect Information" (1984), 52 *Econometrica* 87 and Dilip Abreu, David Pearce and Ennio Stacchetti, "Optimal Cartel Equilibria with Imperfect Monitoring" (1986), 39 *J. Econ. Theory* 251. The textbook by Jean Tirole, *The Theory of Industrial Organization* (Cambridge, MA, MIT Press, 1988), also covers the topic. Shorter discussions of game theory's applications to the issues discussed here can be found in Baker, *supra*, footnote 19, and Yao and DeSanti, *supra*, footnote 19. Willig, *supra*, footnote 11, explains the new formal approach to tacit collusion: "Today, with the research literature squarely committed to the conceptual framework of game theory, tacit collusion is

of firms in a market. Each period, firms choose price (and/or other strategic variables) and collect that period's profits. In a supergame this period-by-period game (the "stage game") is repeated either infinitely many times, or it is repeated finitely many times but without firms knowing when they are in the last period. In most one-shot games, it is difficult to get the firms to co-operate without an explicit, enforceable agreement. As Stigler observed, the temptation to cheat and steal rivals' business is simply too great.<sup>43</sup> What the theory of supergames tells us is that, in the repeated versions of the same stage game, co-operation between the firms is indeed possible. In this case cheating behaviour can be punished by more aggressive play in the following periods.

Of course, the restrictions placed on firms by conspiracy laws do have some effect, and we would expect tacit collusion to vary in its effectiveness. In some cases, firms may be able to do as well as if they had met and signed enforceable contracts. In other cases, however, the understanding and commitment is far less complete. For example, prices may be set lower to discourage cheating, or some aspects of competition such as product quality may be left out of the tacit agreement altogether. The 1992 Merger Guidelines of the U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC) recognize (at s. 2.11) the potential imperfections of this co-operation: "firms coordinating their interactions need not reach complex terms concerning the allocation of the market output across firms or the level of the market prices, but may instead, follow simple terms such as a common price, fixed price differentials, stable market shares, or customer or territorial restrictions". Areeda recognizes that firms might simply choose to avoid price competition while accepting that there will be competition in other dimensions.<sup>44</sup>

associated with a particular class of equilibria in supergames, while other forms of oligopolistic behavior have their own and distinct representations."

43. See *supra*, footnote 6.

44. See Phillip E. Areeda, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* (Toronto, Little, Brown, 1986) at p. 177. In general, competition in these other dimensions (e.g. advertising, quality, service levels) cannot generate as efficient an outcome as would be obtained were competition permitted in all dimensions. There can even be too much non-price competition in the sense that, for example, quality is set above efficient levels. It has been argued, for example, that in the period of tight regulatory control of airfares in the United States, the airlines competed away much of their economic profits with excessive flight frequency: see Richard A. Posner, "The Social Costs of Monopoly and Regulation" (1975), 83 *J. Political Econ.* 807, and G. Douglas and J. Miller III., *Economic Regulation of Domestic Air Transport: Theory and Policy* (Washington: Brookings Institution, 1974).

As discussed by Baker, the theory of supergames also tells us that many outcomes are possible and that the selection of one particular outcome might depend on which outcome the firms see as focal.<sup>45</sup> Here the term "focal" refers to outcomes (or processes to reach outcomes) that are self-evident. They may become self-evident because of experience playing the game before, or because of communication between the players, or they may simply reflect some social convention. For example, a historical pattern of price leadership by one firm might persist because, out of all the possible outcomes, it has the weight of history on its side, making it focal for the players. Importantly, there is no guarantee that the outcome that would be produced by an explicit agreement would be the one determined to be focal in a tacit co-ordination setting.<sup>46</sup>

While it is true that most writers have used supergame models to describe tacit collusion, it should be noted that supergames can be part of traditional cartel behaviour. Put another way, a particular outcome could become focal because the parties talked about it. Indeed, since the parties to a conspiracy cannot count on courts to enforce their illegal promises to each other, they must find agreements that are self-enforcing. Selecting one equilibrium (out of many possible) in which credible punishments for cheating support non-competitive prices is certainly an example of explicit collusion in a supergame.

How one defines tacit collusion will determine whether or not such agreements can be reached by the conspiracy provisions contained in s. 45 of the Competition Act or s. 1 of the Sherman Act.<sup>47</sup> To some, a tacit agreement is the same thing as an explicit one except for the process by which it was achieved. In this view, it may be reached by ss. 45 and 1.

45. See *supra*, footnote 19, at pp. 162-69.

46. An important recent example of firms finding a focal point involves the convention adopted by many National Association of Securities Dealers Automated Quotations (NASDAQ) market makers for perhaps three decades to avoid quoting prices in odd-eighths, thereby guaranteeing a minimum spread of 25 cents. When uncovered by academic research, the practice led to a Department of Justice investigation, several class action lawsuits and regulatory changes at the Securities and Exchange Commission. For a discussion see William G. Christie and Paul H. Schultz, "Did Nasdaq Market Makers Implicitly Collude?" (1995), 9 *J. Econ. Perspectives* 199.

47. The Canadian jurisprudence on the question of what constitutes an agreement or arrangement is reviewed in Russell W. Lusk, "Conspiracy: From What Evidence Is It Appropriate to Find an Agreement", c. 7 in R.S. Khemani and W.T. Stanbury, eds., *Canadian Competition Law and Policy at the Centenary* (Halifax, Institute for Research on Public Policy, 1991).

## (c) Conscious Parallelism

Conscious parallelism is another term that has had different meanings. Today, the term generally refers to the practice by which close rivals in an oligopoly setting, recognizing their interdependence, adopt a strategy of matching each other's actions. This is not part of any explicit agreement; in fact, it is often thought to be the most natural behaviour for oligopolists.<sup>48</sup> Admittedly, the line between consciously parallel behaviour and tacit collusion is difficult to draw: at what point does behaviour become so co-ordinated as to form a tacit agreement?<sup>49</sup> Indeed, MacLeod presents a formal model in which conscious parallelism is a plausible outcome of a particular tacit collusion supergame.<sup>50</sup>

However, there is another sense in which the term conscious parallelism captures the idea of reduced competitive vigour in a market, not necessarily due to a well understood supergame-type equilibrium, but more from a joint sense that aggressively competitive acts will not go without a response from rivals.<sup>51</sup> To dress this up in game-theoretic jargon as a "tacit agreement" in a supergame is to risk exaggerating the degree to which the firms have consciously co-ordinated their conduct.<sup>52</sup> The danger is that we will miss conscious parallelism when there is little evidence of an agreement. It is important to recognize that what constitutes a supergame equilibrium to a game theorist may not constitute a collusive agreement in antitrust law. Conscious parallelism can manifest

48. See, e.g., Edward H. Chamberlin, *The Theory of Monopolistic Competition* (Cambridge, Harvard University Press, 1933). Chamberlin saw such interdependence as natural but distinguished it from tacit agreements. As noted by Pennel J. in the *Canadian General Electric* case, "the oligopolist is behaving in exactly the same way as is a rational seller in a competitively structured market; he is simply taking into account the reactions of his rivals to any price cut or increase which he has to take into account because of the situation in which he finds himself": *R. v. Canadian General Electric* (1974), 17 C.C.C. (2d) 433 (Ont. H.C.J.) at p. 499. Turner, *supra*, footnote 19, agrees that consciously parallel behaviour is inevitable in oligopoly but has difficulty seeing the line between it and a tacit agreement.

49. See, e.g., Howard and Stanbury, *supra*, footnote 19, at pp. 231-32.

50. W. Bentley MacLeod, "A Theory of Conscious Parallelism" (1985), 27 *European Econ. Rev.* 25.

51. This is not inconsistent with an imperfect information supergame model, but without the formality. It may, however, come closer to expressing the way the firms themselves see their situation.

52. For example, supergame models of tacit collusion would typically include punishment phases after cheating is detected. In contrast, firms behaving in a consciously parallel way would respond to a rival's price cut by simply matching it and no more. There would certainly be no evidence of a co-ordinated response.

itself in many non-collusive ways — an unwillingness to engage in aggressive price competition for fear of triggering a damaging price war, or a willingness to tolerate a rival's price cutting that is an attempt to restore lost market share coupled with a strategy of responding aggressively when that rival's share grows beyond historical levels, for example.<sup>53</sup> Under some conditions, the results of consciously parallel behaviour can approximate those of collusion. For example, Stanbury and Reschenthaler state that the accused in the *Atlantic Sugar*<sup>54</sup> case, convicted in earlier years of conspiracy to lessen competition, "achieved through conscious parallelism that which had previously required collusion".<sup>55</sup>

Whether there is a difference between pure conscious parallelism and agreements reachable by the conspiracy provisions is a subject of longstanding debate.<sup>56</sup> The "oligopoly problem", as it became known, asks how the antitrust laws should treat oligopolies in which prices may be above competitive levels, but for which there is no direct evidence of collusion.<sup>57</sup> At present, in both Canada and the United States, it would appear that the law is clear that pure conscious parallelism is not an offence. At a very minimum, some additional "plus factors", such as facilitating practices, poorly explained meetings or voluntary information exchanges must be demonstrated.<sup>58</sup>

Fortunately, we do not have to wade into this debate. In our view, a sound merger policy will consider the possibilities for a loss of competition by any means, collusion (explicit or tacit) or conscious parallelism. Through any of these mechanisms, prices can rise and market outcomes can be rendered less efficient. Turner is probably right that some degree of supracompetitive pricing is likely in highly concentrated markets with high barriers to entry

53. Dennis W. Carlton, Robert H. Gertner and Andrew M. Rosenfield, "Communication Among Competitors: Game Theory and Antitrust" (1997), 5 *Geo. Mason U.L. Rev.* 423, provides a nice example that illustrates quite plausibly how two gasoline stations could settle into an equilibrium involving monopoly-level prices with no attempt to conspire but merely through the recognition of the interdependence of their actions.

54. *R. v. Atlantic Sugar Refineries Co. Ltd* (1976), 26 C.P.R. (2d) 14 (Que. S.C.).

55. *Supra*, footnote 19, at p. 649.

56. See Turner, and Posner, *supra*, footnote 19, for important early contributions. Lopatka, *supra*, footnote 19, offers a nice analysis of the positions taken by Turner and Posner. See Howard and Stanbury, *supra*, footnote 19, for a Canadian perspective.

57. For a review of the evolution of the legal standards governing tacit collusion in the United States, see Kovacic, *supra*, footnote 41. See also Areeda, *supra*, footnote 44, for a discussion of a number of the cases.

58. See Howard and Stanbury, and Stanbury and Reschenthaler, both *supra*, footnote 19.

and that there is therefore not much that can be done *ex post*.<sup>59</sup> Justice Breyer expressed a similar view when he found that oligopoly pricing does not violate s. 1 of the *Sherman Act*, "not because such pricing is desirable (it is not), but because it is close to impossible to devise a judicially enforceable remedy for 'interdependent' pricing. How does one order a firm to set its prices *without regard* to the likely reactions of its competitors?"<sup>60</sup>

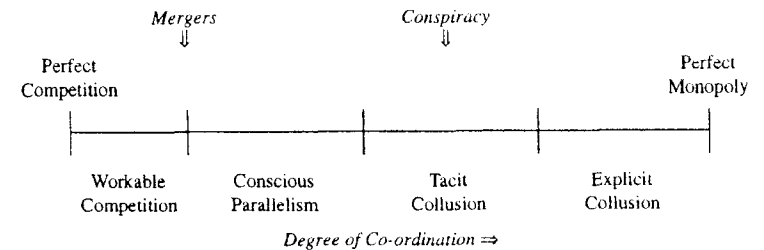
However, merger review allows us to take action *ex ante* to prevent the change in market structure and dynamics that contribute to this interdependence. In fact, a case could be made that merger review should pay particular attention to the possibilities for conscious parallelism post-merger because such behaviour cannot be reached and controlled *ex post* by the conspiracy provisions.<sup>61</sup>

For illustrative purposes, we can use the following diagram, which presents the degree of co-ordination in a market along a line stretching from perfect competition (in which firms essentially ignore each other, each seeing itself as too small to affect the market) at one end to perfect monopoly at the other. Near-perfect competition is what is often referred to as "workable competition" — a level of competition that, while not satisfying completely the demands of perfect competition, comes quite close. Near the opposite end is the level of co-operation achievable with a detailed explicit agreement. Tacit agreements will frequently (but not necessarily) be incomplete and may therefore not be as anticompetitive as explicit agreements. The range attributed to conscious parallelism covers a level of co-ordination that cannot be described as an agreement, but nevertheless represents an attenuation of competitive behaviour.

59. See Turner, *supra*, footnote 19.

60. *Clamp-All Corp. v. Cast Iron Soil Pipe Institute*, 851 F.2d 478, 484 (1st Cir. 1988).

61. This has been recognized in the United States, as well. See *Brooke Group Ltd. v. Brown & Williamson Corp.*, 509 U.S. 209, 227-230 (1993) (stating that "oligopolistic price coordination or conscious parallelism [is] not in itself unlawful" but noting that "In the s.7 context, it has long been settled that excessive concentration and the oligopolistic price coordination it portends, may be the injury to competition the Act prohibits.") Kattan and Vigdor suggest that in the consideration of co-ordinated behaviour in merger cases, "the analysis in this area often focuses on whether the post-merger market conditions are likely to enable firms to coordinate their pricing and output decisions without engaging in any explicit behavior that can be subject to the sanctions of Section 1 of the Sherman Act": see Joseph Kattan and William R. Vigdor, "Application of Game Theory to Antitrust: Game Theory and the Analysis of Collusion in Conspiracy and Merger Cases" (1997), 5 *Geo. Mason U.L. Rev.* 441 at p. 442.



Somewhere along this spectrum, antitrust policy needs to draw two lines. The line separating the agreements reachable under the conspiracy provisions is being drawn somewhere within the tacit collusion zone — a tacit agreement without any "plus factors" is unlikely to be found to violate s. 45 of the Competition Act or s. 1 of the Sherman Act. Our point is that the line for concern in a merger review should, in principle, be at the boundary separating workable competition from conscious parallelism.<sup>62</sup> Obviously this boundary is not an easy one to draw in practice, and much care should be taken not to interfere with mergers that may only push the market into the low end of the conscious parallelism zone.

#### (d) Conditions Facilitating Interdependence

There is now a substantial literature on the conditions that support co-ordination among firms in a market. Areeda<sup>63</sup> reviews some of this, as do many industrial organization texts.<sup>64</sup> These conditions all serve to address the three problems facing cartels, as described by Stigler:<sup>65</sup> finding an agreement, monitoring the agreement and punishing defectors. Beyond their application to the analysis of cartels, however, these conditions have been seen to contribute to all types of interdependence.

62. Though a fuller treatment is beyond the scope of this article, we would argue that there could be other antitrust policies, such as those related to predatory pricing, that should draw the line in the same place as for mergers. That is, predatory pricing should be viewed as having the potential to lessen competition if it facilitates conscious parallelism.

63. See Areeda, *supra*, footnote 44.

64. See, e.g., Carlton and Perloff, *supra*, footnote 1, at pp. 180-196. Important examples of empirical studies include George A. Hay and Daniel Kelley, "An Empirical Survey of Price-Fixing Conspiracies" (1974), 17 *J.L. & Ec.* 13, and Andrew R. Dick, "When are Cartels Stable Contracts?" (1996), 39 *J.L. & Ec.* 241.

65. See Stigler, *supra*, footnote 6.

*(i) Small Number of Sellers/High Levels of Concentration*

It is much easier to come to an agreement, and to police it, when there are relatively few parties. Finding mutually agreeable terms, monitoring each other's compliance and organizing punishments for defectors are all simpler with fewer interests to reconcile. The temptation to cheat on a collusive agreement is also reduced when there are relatively few firms, each with substantial market shares. In markets with many small firms, a firm with excess capacity might be able to increase its sales several times over by cheating and this could represent enough profit to compensate for whatever punishment might follow.

Not every firm in the market need be part of the agreement, however. In markets in which there are a relatively large number of sellers in total, but market output and capacity are still quite concentrated in a few sellers' hands, the large firms might be able to fashion an agreement that suits them and simply concede some market share to the capacity-constrained fringe players.<sup>66</sup>

Large market shares in a few hands also facilitates non-collusive interdependence as each firm has less to gain from vigorous competition and more to gain from suppressing it. A firm taking an aggressively competitive action in a tight oligopoly can be confident that its rivals will notice the effect and respond, even if there is no real agreement in place.

In one sense this is the most important factor in merger review, because this is the condition that is most obviously changed by the merger. If reducing the number of players had no effect on interdependence, there would be no reason to focus on anything other than unilateral effects. As indicated above, there is substantial empirical literature studying the effects of concentration on prices and profits both within industries and across large numbers of industries. Although this literature is not without its critics, there is a considerable amount of evidence that, holding other relevant factors constant, higher levels of concentration (at least beyond some point) will likely lead to higher prices in a market.<sup>67</sup>

66. The fringe firms might also be limited in their ability to expand sales if their products are somewhat different from those of the larger firms and serve niche markets.

67. See, e.g., Schmalensee, *supra*, footnote 3, and Timothy F. Bresnahan, "Studies of Industries with Market Power" in R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization*, *supra*, footnote 3. Note, however, that s. 92(2) of the Competition Act prohibits a finding that competition will be lessened or prevented substantially based only upon evidence of market shares and concentration.

*(ii) Many Small Buyers Making Frequent Small Purchases*

Large buyers can have countervailing power in a market if they have alternatives not available to small buyers. For example, they may be in a position to integrate vertically and become their own suppliers if they feel prices are too high. Alternatively, they may be large enough that the promise of their business will be sufficient to attract a new entrant to the market. It is also true that large buyers, particularly when they place large orders all at once, make it very tempting for individual sellers to cheat on a collusive agreement. The profit from a big prize like a very large order (with possibly more to come from that buyer) may well compensate for any punishment or possible losses due to the breakdown of the agreement.

*(iii) Inelastic Demand*

For firms to take actions that raise prices above competitive levels there must be something to gain in terms of substantial sales at the new high prices. If demand is too elastic, however, the higher prices will drive so many customers away that the price increase will not be profitable. In a way, this is related to the "fewness of firms" point made above. When demand is very elastic it means that customers have good alternatives. This suggests that the co-ordinating group is not large enough either because some firms in the market have not joined, or because the product produced by the firms is really part of a larger market that includes other related products.<sup>68</sup> The group may then have to choose between facing this elastic demand and losing sales, or adding new members (the best substitutes to which customers would switch), which could reduce the ability of the group to strike and monitor an agreement.

*(iv) Limited Excess Capacity*

Both the amount of excess capacity and its distribution among the market's firms can influence the degree of interdependence. First, when there is a lot of excess capacity, particularly in the

68. Actually, there is a third possibility, that the consumers who leave the market when prices rise spend their money in all different places, *i.e.*, they do not all switch to particular set of substitutes. In this case, adding a few more partners in co-operation will not really help.

hands of smaller participants in the market, attempts to raise price and restrict output by a few larger firms can be completely frustrated by the rapid expansion of sales by the smaller firms. Even if all firms are the same size, the profit from cheating on an agreement is that much greater for a firm with enough capacity to expand sales dramatically.<sup>69</sup> It is important to stress, however, that just because some firms have sufficient capacity to counteract an attempt to restrict quantity and raise price does not imply that they will choose to use the capacity for this purpose. For example, the Cournot model described above typically assumes all firms to have unlimited capacities, yet they individually choose to restrict output to levels that in aggregate fall short of the competitive rate of output. Excess capacity can even facilitate interdependence when it is used to expand volumes and punish cheaters by dumping low-priced output into the market.<sup>70</sup> Therefore, excess capacity controlled by the firms with the most to gain from achieving an agreement can actually help support anticompetitive behaviour.<sup>71</sup>

#### (v) *Barriers to Entry*

When barriers to entry are low, new competition can provide significant discipline on market pricing. Under such conditions, any reduction in output intended to raise price will likely be met with supply from a new entrant. In some industries, the most likely entrant will be a firm in the same business in another location or one currently producing a closely related product; such a firm will have much of the know-how needed to get up and running quickly. An entrant may even simply import goods into the market from another location. In some cases entrants may be invited into the market by large buyers unhappy with the prospect of non-competitive prices. Of course, barriers to entry are an important feature of production in many markets. We do not here review the literature on barriers to entry, but simply note that important sources of

69. Indeed, if no firms have excess capacity, stability is assured because no one is capable of cheating.

70. These low prices are not themselves necessarily bad, since they provide benefits to consumers. Problems arise if temporary price reductions drive out competitors with the result that prices rise again to supracompetitive levels. Even the threat of such predation, backed up by excess capacity, may be enough to deter cheating.

71. In a similar way, excess inventories held by leading firms can serve as credible threats to punish cheaters.

barriers include regulatory constraints on entry or expansion, tariffs or quotas, sunk costs and intellectual property protections.<sup>72</sup>

#### (vi) *Product and Cost Homogeneity*

Stigler<sup>73</sup> pointed out that coming to an agreement on price will be more difficult if all the producers are selling somewhat different products. Related to this point is the complication introduced when each firm sells many products. Again, it may be difficult for seller to agree on prices for a large number of different products, particularly if they are also differentiated.

It is also true that when customers have no reason to buy any product other than that at the lowest price, price competition can be most intense, giving firms a strong incentive to try to find some way to co-ordinate their behaviour. Not surprisingly, many famous cartels were formed to raise prices for fairly standardized products.<sup>74</sup> It is important not to exaggerate the importance of this factor, however. When coming to an agreement on prices is complicated by product differentiation or the large number of different products offered for sale, firms can co-operate in other ways, for example by allocating markets or customers to each. And, as discussed by Baker,<sup>75</sup> simple rules for setting and adjusting prices can become focal in tacit agreements. Once some sort of agreement or understanding is reached, the theory is not clear as to whether product differentiation will make it more or less stable.<sup>76</sup>

When it is not the product that varies from firm to firm, but the cost of producing it, similar problems arise. Facing different costs of production, the firms will often disagree about the ideal price to charge. The lowest cost firm may also be tempted to price so low as to take over the market. Here is a case in which a cartel can be even worse for society than a pure monopoly: while a monopoly would always have an incentive to move production to wherever

72. See Gilbert, Ross and Geroski, Gilbert and Jacquemin, *supra*, footnote 25, and Thomas W. Ross, "Sunk Costs as a Barrier to Entry in Merger Cases" (1993), 27 U.B.C. L. Rev. 75.

73. See Stigler, *supra*, footnote 6.

74. See, e.g., Hay and Kelley, *supra*, footnote 64.

75. *Supra*, footnote 19.

76. See, e.g., M-H Chang, "The Effects of Product Differentiation on Collusive Pricing" (1991), 9 International J. of Industrial Organization 453 and Thomas W. Ross, "Cartel Stability and Product Differentiation" (1992), 10 International J. of Industrial Organization 1.



it could be produced at the lowest cost, a cartel may have to share output among less efficient producers simply as a way to share the cartel profits.<sup>77</sup> There is also a scenario in which cost heterogeneity could contribute to the stability of an agreement. If one firm is clearly more efficient, and as a result, larger than the other firms, the market players might see it as a price leader of the sort discussed above with reference to the dominant firm model.

(vii) *Predictable or Stable Demand and Costs*

When demand and costs are volatile, prices will need to be adjusted frequently. However, firms that change their prices run the risk of being seen as defectors, leading to a breakdown of a coordinated understanding. When the shifts in demand or costs are predictable and common knowledge among all members, this might be less of a problem as each firm has enough information to determine the motive of the rival's price change. However, when firms experience shocks to their own demand or costs that are not seen by other firms and to which they feel they must respond, they risk destroying the arrangement. In fact, theory suggests that even when the conditions of demand and cost are fully predictable, cartels may be vulnerable to defections either in very good times or very bad, depending on the economic model used.<sup>78</sup>

(viii) *Transparency — Good Information about Prices and Customers*

As Stigler<sup>79</sup> pointed out, for any sort of an agreement or understanding to hold together, the parties must have the ability to monitor compliance. While he made this point with reference to cartels, it is true of any sort of agreement or understanding, including the simplest "non-aggression" policies of conscious parallelism. If firms cannot easily see each other's real transaction prices, they will be vulnerable to defections by rivals and they will see an opportunity to capture a larger share of the market by themselves defecting. As a result, the agreement is less likely to be stable. There is a certain

irony here in the fact that the economists' ideal of perfect competition also requires good information about prices in order for markets to achieve a first-best allocation of resources.<sup>80</sup> However, in the presence of significant market power, having such full information carries a cost.

Importantly, information need not be perfect to support agreements or understandings. If actual transaction prices are not generally available, it may be enough that firms can observe the approximate flow of customers to their various rivals.<sup>81</sup> When they see too many of their customers going to any one rival, they can infer that this rival has been more aggressive and they can respond. And even if they cannot tell where their customers have gone, just knowing that they have lost market share might make it more acceptable (to their rivals) for them to price more aggressively in an attempt to re-establish their historical position without upsetting their understanding with rivals. Therefore an ability to track customers' purchases and monitor market shares could be a very good substitute for information on prices.<sup>82</sup>

(ix) *Multimarket Contact*

When they compete in a number of markets, firms wishing to respond to an aggressive action by a rival in one market have more options than would be the case were they all competing in that one market alone. They might choose to respond aggressively in the same market or in some other market of particular importance to the defecting firm. They can be expected to select a response that sends the desired message to the defector at the least cost to the senders — for example, dumping output into a market dominated by the defector. This wider scope for punishment is the reason why the theoretical literature has determined that multimarket contact can facilitate collusion.<sup>83</sup>

77. Of course, if payments between competitors were allowed, the lowest cost members of the cartel could pay the higher cost members to shut down.

78. See, e.g., Green and Porter, *supra*, footnote 42, and Julio J. Rotemberg and Garth Saloner, "A Supergame-Theoretic Model of Price Wars During Booms" (1986), 76 *Am. Econ. Rev.* 390.

79. See Stigler, *supra*, footnote 6.

80. It is sometimes helpful to distinguish between cases in which buyers and/or sellers have this information. It is making information available to sellers that facilitates interdependence. Taking the sellers' information as given, competition would typically not be hurt, and will often be helped, by better informing buyers.

81. This is an idea of Stigler's as well. See Stigler, *supra*, footnote 6.

82. That this kind of information is so valuable helps explain why so many business associations collect and distribute information to their members. To be fair, the information collected would typically be valuable even if the firms were behaving very competitively, so there is no case for prohibiting this activity generally.

83. See B. Douglas Bernheim and Michael D. Whinston, "Multimarket Contact and Collusive Behavior" (1990), 21 *Rand J. Econ.* 1.

(x) *History of Co-operation/Co-ordination*

A history of co-operative behaviour by firms in a market is relevant for two related reasons. First, such a history indicates that the conditions (whatever the necessary ones may be) have been good enough to support co-ordination in the past — which naturally leads to the inference, absent important changes in the market, that they are good enough still and that we should not be concerned. The second reason relates more directly to this list of facilitating factors. A past history of co-operation can be helpful for building an understanding between firms, or in other words, for making some outcomes or processes focal. This past co-ordination may have taken many forms. It could have been collusion or it may have been part of a period of legal co-operation, as in a regulated industry.<sup>84</sup>

(e) *Facilitating Practices*

The conditions described above as facilitating interdependence are more or less exogenous to the firms involved. That is, they are basic conditions of the industry that the firms did not choose, but that influence the degree to which non-competitive pricing can be sustained. However, firms are not without strategies that they can adopt to help reduce competitive friction. One obvious such tactic — mergers — is the principal concern of this article. Here we list some of the other facilitating practices that have been adopted to promote co-ordinated behaviour. Many of these are discussed in the academic literature on the “plus factors” that need to be shown, in addition to consciously parallel behaviour, to support the finding of an agreement under the conspiracy provisions.<sup>85</sup>

84. During the Depression, the National Recovery Administration (NRA) in the United States imposed codes on many industries that encouraged collusion to raise prices. Even after the NRA and its codes were struck down as unconstitutional, a number of industries remained attached to the uncompetitive behaviour encouraged by the codes: see, for example, the short discussions in Scherer and Ross, *supra*, footnote 1, and Hay and Kelley, *supra*, footnote 64. The view has also been expressed that some industries subject to war-time price controls in Canada may have emerged from those controls with their own understandings about market shares and/or prices. See, e.g., the discussion of the *Atlantic Sugar* case in Stanbury and Reschenthaler, *supra*, footnote 19.

85. For more on these practices and their role in various cases in Canada and the United States, see James Langenfeld and Margaret Sanderson, “Practices that May Facilitate Collusion in an Oligopoly: The Canadian and U.S. Experiences” (paper presented at the Canadian Bar Association Competition Law Section: Economics and Law Subcommittee Roundtable, University of Toronto, June 20, 1994); Areeda, *supra*, footnote 44, Howard and Stanbury, *supra*, footnote 19, and Kovacic, *supra*, footnote 41.

Proceeding through this list, it is important that we recognize that there are legitimate business reasons, unrelated to interdependence, to employ each of these practices. Thus, we do not attempt to make a case here for banning these practices or, upon observing them in use, for jumping immediately to a conclusion that their purpose is anticompetitive.

(i) *Information Sharing*

As discussed above, co-ordination is greatly aided when firms have good information about each other: their prices, costs, customers, plans for new facilities or new products etc. Firms wishing to promote co-ordination can take actions to increase the level of information in the market either through unilateral disclosures such as published price lists or by working through trade associations to collect and disseminate market intelligence.<sup>86</sup> It is hard to condemn these activities generally, however, given the obvious benefits for better-informed consumers and the contribution they can make to the development of “best practices” and benchmarking initiatives.

(ii) *Public Speeches and other “Cheap Talk”*

In some cases, executives will try to negotiate an understanding through public pronouncements on the state of competition in their industry. While these speeches are often filled with information of value to customers and investors, the real target audience may be competitors when the message is one of industry overcapacity, “irrational” pricing or “cutthroat” competition. “Cheap talk” is communication that is costless to send and which involves no real commitment to future actions. Despite its apparent emptiness, cheap talk can facilitate co-operation by helping to make more co-operative outcomes focal.<sup>87</sup> A common example of cheap talk that arises in antitrust cases involves the pre-announcement of price

86. Various mechanisms to transmit or signal information to other sellers in a market is the most common form of facilitating practice in the record of Canadian conspiracy cases: see Langenfeld and Sanderson, *ibid.*

87. On the theory of cheap talk, see, e.g., Joseph Farrell and Matthew Rabin, “Cheap Talk” (1996), 10 *J. Econ. Perspectives* 103. For some experimental evidence of the ability of cheap talk to co-ordinate behaviour, see Russell Cooper, Douglas V. DeJong, Robert Forsythe and Thomas W. Ross, “Communication in the Battle of the Sexes Game” (1989), 20 *Rand J. Econ.* 568; and Russell Cooper, Douglas V. DeJong, Robert Forsythe and Thomas W. Ross, “Communication in Coordination Games” (1992), 107 *Quarterly J. Econ.* 739.

increases. These announcements are sometimes trial balloons floated in the hope that rivals will co-operate by quickly making similar announcements. If such a response is not forthcoming, the increases can be withdrawn with little or no harm done to the leader's sales or profits.<sup>88</sup>

### (iii) Meeting Competition Clauses

A typical meeting competition clause (MCC) in a contract between a buyer and seller obligates the seller to match any price offered to the buyer by another seller. The related "meet-or-release" (MOR) clause adds an option for the first seller to release the buyer from its purchase obligations to allow it to buy from the second seller. As pointed out by Salop<sup>89</sup> and others, the MCC does two things that serve to facilitate co-ordination. First, it recruits customers to help police any understanding between the sellers. If one seller offers a lower price, this information is carried by buyers to the other sellers in the market. Second, they reduce the incentive for any firm to cut price in order to steal business from rivals since all the customers can simply return to their current suppliers and get the lower price from them under the MCC.<sup>90</sup>

### (iv) Most-Favoured Customer Clauses<sup>91</sup>

A most-favoured customer (MFC) clause in a contract between a buyer and a seller obligates the seller to charge that buyer a price no higher than it is charging any other customer. By putting such a clause in all or most of its contracts, the seller is committing itself quite publicly to not offering selected discounts to steal business. This is because selective discounts would become across-the-board

88. In the *Airline Tariff Publishing* matter, settled by a consent decree, the U.S. Department of Justice alleged that the major U.S. airlines used the computerized airline tariff publishing system to send cheap talk signals to each other: see *United States v. Airline Tariff Publishing Co.*, 1994-2 Trade Cas. (CCH) 70,687 (D.D.C August 10, 1994) (final consent decree).

89. See Steven C. Salop, "Practices that (Credibly) Facilitate Oligopoly Coordination", in J.E. Stiglitz and G.F. Mathewson, eds., *New Developments in the Analysis of Market Structure* (Cambridge, MIT Press, 1986), pp. 265-90.

90. Again, it is important to note that MCCs can have pro-competitive effects and be efficiency-enhancing, so there is no case to be made for a blanket ban on such contractual provisions. It may also be that the MCC only applies to a select group of customers, in which case it is less likely to facilitate interdependence.

91. Because of their relationship to their more famous international trade counterparts, these are sometimes called "most-favoured nation" clauses.

discounts under a MFC and this would be expensive. In this way the seller can signal to its rivals that it will maintain price levels. If enough firms do this, sufficient confidence in the stability of higher prices will encourage firms to compete less aggressively.<sup>92</sup>

### (v) Resale Price Maintenance

Given its current status as *per se* illegal, this is less of a concern in Canada, but it is worth noting that resale price maintenance (RPM) has been used by firms to help them control price competition. Under RPM agreements, the retailer must adhere to resale prices dictated by the manufacturer or risk termination of the supply relationship. By pressuring manufacturers to adopt and enforce RPM agreements, retailers can effectively transfer the cartel enforcement function to a manufacturer possessing the power to punish defections.<sup>93</sup> Similarly, manufacturers might jointly agree to adopt RPM policies to facilitate transparency.<sup>94</sup> Under RPM secret wholesale price cuts do the manufacturer no good as they do not affect retail price or quantity sold. Therefore members of a manufacturers' cartel need only monitor the more visible retail prices to determine if a member has cheated.<sup>95</sup>

92. See, e.g., Thomas Cooper, "Most-Favored-Customer Pricing and Tacit Collusion" (1986), 17 *Rand J. Econ.* 377. Monika Schnitzer, "Dynamic Duopoly with Best-Price Clauses" (1994), 25 *Rand J. Econ.* 186, compares the anticompetitive potential of MOR and MFC clauses. Again, we must stress that such clauses provide desired protection for some buyers — often those in long-term supply arrangements — and are frequently requested by those buyers. For a discussion of the role of such contracts in actual antitrust cases, see, e.g., Victor P. Goldberg, "The International Salt Puzzle" (1991), 14 *Research in Law and Econ.* 31 and Keith J. Crocker and Thomas P. Lyon, "What do 'Facilitating Practices' Facilitate? An Empirical Investigation of Most-Favored-Nation Clauses in Natural Gas Contracts" (1994), 37 *J. Law and Econ.* 297. It is important to recognize, however, that just because buyers individually request MFCs does not mean that they are good for buyers collectively. There can be a free-rider problem at work in which individual buyers are better off with this protection, but in which — if enough buyers have such contracts — interdependence is facilitated and they all end up paying higher prices.

93. The most famous examples of such a use of RPM came from its use in contracts between retail druggists and their suppliers in the United States early in the 20th century: see Joseph C. Palamountain, Jr., *The Politics of Distribution* (Cambridge, Harvard University Press, 1955).

94. Lester Telser, "Why Should Manufacturers want Fair Trade?" (1960), 3 *J.L. & Ec.* 86, argues that this was the reason General Electric and Westinghouse used RPM as part of their conspiracy.

95. None of this is meant as an endorsement of the current legal treatment of RPM in Canada. There is a long list of efficiency justifications for RPM that would argue for at the very least a rule-of-reason approach. See, for example, Frank Mathewson and Ralph Winter, "The Law and Economics of Resale Price Maintenance" (1998), 13 *Rev. of Industrial Organization* 57.

*(vi) Basing-Point Pricing*

When buyers and sellers are scattered across a large geographic area and transportation costs are a significant part of the total cost of acquiring the output, oligopolists trying to reach some understanding have a complicated problem. A common factory price plus a common transport cost schedule based on actual distance could leave some producers at a significant disadvantage, making them less willing to co-operate. A basing-point pricing scheme can make it easier for sellers to match each others' prices and reach a meeting of the minds. Under such a plan, prices to all customers are quoted off a standard delivered price schedule that includes delivery costs charged from a common — to all sellers regardless of their actual location — delivery point.<sup>96</sup> When a new buyer appears, all sellers are able to calculate easily the identical prices that will be quoted by their rivals. Complicating the analysis of this practice, however, is the fact that basing-point pricing can be consistent with competitive behaviour under certain circumstances, as described by Haddock.<sup>97</sup>

*(vii) Strategic Alliances and Joint Ventures*

In many industries, member firms have co-operated to achieve privately and socially valuable purposes. Examples include strategic alliances to share certain facilities (*e.g.* the aircraft and ground operations of airline alliances), joint ventures (*e.g.* to undertake expensive research and development activities) and standard-setting. While these agreements may be valuable on their own, they do have the potential to influence the degree of rivalry in the markets in which these firms compete. They can do this first by facilitating communication between important decision-makers in the organizations involved. Even if the topic of competition never

96. The Crown argued that basing-point pricing was a facilitating practice in *R. v. Canada Cement Lafarge* (1973), 12 C.P.R. (2d) 12. In the *Ethyl* case, the FTC alleged that the basing point pricing scheme used by manufacturers of a gasoline additive facilitated price collusion. The Second Circuit disagreed, highlighting other possible reasons for the adoption of such schemes: see *E.I. du Pont de Nemours & Co. v. F.T.C.*, 729 F.2d 128 (2d Cir. 1984). On this case, see George A. Hay, "Practices that Facilitate Cooperation: The Ethyl Case", in J.E. Kwoka, Jr. and L.J. White, eds., *The Antitrust Revolution: The Role of Economics*, 3rd ed. (New York, Harper Collins, 1999), pp. 182-201. There have also been antitrust cases in the U.S. involving basing-point pricing in the steel and cement industries.

97. David D. Haddock, "Basing-Point Pricing: Competitive vs. Collusive Theories" (1982), 72 *Am. Econ. Rev.* 289.

comes up, the co-operation could help each develop an understanding of the thinking and strategies of the others. This could make it easier for the firms to find a less competitive oligopoly outcome as focal — co-operation (or simply less intense competition) could become part of the market culture. Second, such legal co-operative activities also provide participants with other tools with which to punish cheaters — they can withdraw their co-operation or expel the cheater from participation in the joint activity.

*(f) Indicators of Interdependence*

Concerns about interdependence after a merger can arise whether or not there is evidence of interdependence pre-merger. That having been said, knowing how competitive the market is pre-merger is helpful for at least two reasons. First, if it is not very competitive we know that the conditions are "good enough" for interdependence and the only question left is whether or not the merger is likely to make things worse. We return to this point below. Second, pre-existing market power should make us more worried about additions to that power. Economic theory demonstrates that reducing output slightly below competitive levels has a fairly small effect on total economic welfare, but that reducing output when markets are already uncompetitive can be much more socially costly.<sup>98</sup> For this reason, we should be more careful about approving mergers that might facilitate interdependence if prices are already above competitive levels.<sup>99</sup>

Determining the competitiveness of a market is not as easy as one might wish. One place to start is by asking for the views of market insiders. While such questions must be asked in any merger review there are almost always problems interpreting the answers given. First, many insiders will have a vested interest in the outcome of the review and so their answers must be interpreted

98. The intuition behind this result is as follows. In competitive markets price ( $P$ ) is very close to marginal cost ( $MC$ ), the full additional cost of making the last unit sold. The price can be taken as a dollar measure of the value the buyer put on that last unit. As a result the total social gain (benefit minus cost) to producing and selling that last unit was approximately zero: the value of the unit was  $P$ , the cost to produce was  $MC$ , but since  $P=MC$  the net gain is zero. So a small reduction in output when price equals marginal cost is not very costly. However, in markets that are not competitive, price exceeds marginal cost and there is a social cost for every additional unit withdrawn.

99. The same logic applies to concerns over unilateral market power — that is, we should be more concerned about adding to a single firm's market power when prices are already at supracompetitive levels.

through the lens of self-interest.<sup>100</sup> Even so-called "independent" consultants may be interested in securing work from the merged firm or some other interested parties. Retired industry executives might seem safer, although this is a matter of degree. They may still be affected by old loyalties and their interest in part-time consulting opportunities for their former employers, and their information may be dated.

Second, most insiders will have little with which to compare the competitiveness of their market. In our experience, every businessperson thinks he or she is in a competitive market and we are convinced that most (unless they are actually conspiring) are sincere. This does not make them correct.<sup>101</sup> This is in no way meant to insult businesspeople, but to point out that when asked how competitive their market is, they will naturally compare it to what they know, which may be just their own industry. To the extent that competition in their market is more intense now than it was five or ten years ago — the case in many Canadian industries today — they will be feeling some competitive pressure.

Unfortunately, getting objective measures of the competitiveness of markets is not easy either. Comparing current levels of prices and profits to what might be viewed as competitive levels is very hard to do. In some cases prices can be compared to those in other similar markets in which there are more (or fewer) competitors; however, other differences between the markets, such as differences in costs, must be taken into account.<sup>102</sup> Determining

100. A similar concern is expressed by Frank Roseman and Jane Graham, "Expert Evidence in Competition Tribunal Proceedings" (1992), 20 C.B.L.J. 406.

101. For example, in some markets in which price competition has been largely suppressed and the firms are consistently profitable, insiders will point to the intensity of advertising as evidence of the fierceness of their competition. While competition via advertising might indeed be socially beneficial relative to no competition at all, it is unlikely to provide the consumer benefits of more "rounded" competition on all the dimensions consumers consider important, including price and quality. In some cases, advertising will be seen by rival firms as the "safest" outlet for competition as it can be used to expand the total market and to differentiate products — two effects that can actually help competitors.

102. For example, as part of its review of the proposed mergers of the Royal Bank of Canada with the Bank of Montreal and the Canadian Imperial Bank of Commerce with the Toronto-Dominion Bank in 1998, the Competition Bureau estimated regression models in which the level of pricing discretion offered by banks in local markets was related to the number of competing financial institutions in those markets. Many similar studies relating local pricing by banks to the number of competitors in local markets have been done for markets in the United States: See, e.g., Berger and Hannan, *supra*, footnote 3, and Rhodes, *supra*, footnote 3.

whether firms are making supracompetitive levels of profits is even more difficult as it requires making allowance for the level of invested capital and the risks of the businesses. The use of accounting numbers to measure economic profits is highly problematic.<sup>103</sup> Simple accounting profit numbers might not even be available if this market is one of many in which the firms operate and their accounting does not break out profits by markets. And even when reasonably good measures of the economic profits earned in a market are available, finding that they were low does not guarantee that the market is competitive. It could be that, absent competitive pressure, the firms have let their costs rise. This is an additional cost of market power, often referred to as "X-inefficiency".<sup>104</sup>

There are other less direct indicators of the degree of competitiveness of a market that may be useful. First, the volatility of prices and market shares can be informative. If prices move up and down with great frequency and market shares are very unstable, it is likely that the market is quite competitive. A high rate of entry and exit into the market would suggest the same thing.<sup>105</sup> The opposite conclusions are not necessarily justified, however. Stable prices and market shares with little entry or exit can be observed in competitive markets.

Evidence that the market is subject to price wars is difficult to evaluate. On the one hand, the fact that prices fall significantly certainly indicates that something competitive is happening at those moments. On the other hand, one might just be observing the punishment phase of an explicit or tacit agreement not to compete.<sup>106</sup> About all one can conclude without further evidence is

103. This list of problems associated with using accounting numbers to measure economic profits is very long. The classic reference is Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits" (1983), 73 *Am. Econ. Rev.* 82.

104. See, e.g., H. Liebenstein, "Allocative Efficiency vs. 'X-Efficiency'" (1966), 56 *Am. Econ. Rev.* 392. There have been attempts to measure this sort of inefficiency. For banks in the United States, see, e.g., Allen N. Berger and Timothy H. Hannan, "The Efficiency Cost of Market Power in the Banking Industry: A Test of the 'Quiet Life' and Related Hypotheses" (1998), 80 *Rev. of Econ. and Statistics* 454.

105. The entry does have to be successful for us to be confident the market is open to competition. In the *Souham* case there was a great deal of attempted entry into the North Shore community newspaper business, but since all the entrants failed this was not good evidence of the competitiveness (or contestability) of that market. See *Canada (Director of Investigation and Research) v. Souham Inc.* (1996), 63 C.P.R. (3d) 1, 127 D.L.R. (4th) 263, rev'd 144 D.L.R. (4th) 1, [1997] 1 S.C.R. 748.

106. For example, Robert H. Porter, "A Study of Cartel Stability: The Joint Executive Committee, 1880-1886" (1983), 14 *Bell J. Econ.* 301, studies the pricing of railroads in

that the market is not perfectly collusive (or no one would have cheated), nor is it perfectly competitive (or there would have been no value in cutting price and starting the price war).

In some cases there is strong evidence of non-price competition. For example, if quality is consistently improving or the firms in the market are extremely innovative, we may be observing competition on these margins. Again we have to be careful, however, because non-price competition can serve to expand the total market, making it less threatening — and therefore more acceptable — to rivals. As we observed above, understandings between firms not to compete too vigorously do not need to be complete to be socially damaging. It is perfectly possible that an arrangement under which firms avoid price competition but tolerate all other forms (*e.g.* advertising, new products or services) could be profitable to the firms involved while creating significant costs to society.

#### (g) A Final Complication

It is important to recognize that the problem faced by the anti-trust analyst making an interdependence case is even more complicated than that of establishing the current degree of interdependence or the prospects for non-co-operative behaviour. In reviewing a merger, the real question asks whether the merger will make the effects of this interdependence *worse* — that is, will it lead to higher prices and less output?<sup>107</sup> While there is no way to get around the fact that this is a terribly inexact science, this is no excuse for deciding that since we cannot be certain we must attach a zero probability to a lessening of competition. But it does argue for caution.<sup>108</sup> We offer, tentatively, a few suggestions.

First, if barriers to entry are low with the result that entry can be expected to limit any exercise of market power through unilateral or interdependent means, there should be a presumption that there will be no lessening or prevention of competition.<sup>109</sup>

the 1880s under the Joint Executive Committee in the United States and observes (legal) collusion mixed with periods of price wars.

107. Of course, the reduction of competition could be manifest in other ways as well, such as reduced quality or service levels.

108. As McFetridge acknowledges, we know less than we would like about “how a merger might be expected to *change* the degree of interdependence in a market”: See Donald G. McFetridge, “The Role of Economists in Merger Cases” (1993), 14 *Can. Compet. Rec.* 65.

109. Lerner also emphasizes the importance of barriers to entry as a precondition to any determination that a merger will facilitate interdependent behaviour: see George

Second, if barriers to entry are not low and the merger effectively eliminates a uniquely vigorous competitor — a “maverick” in the jargon — in a highly concentrated market, the likelihood for increased interdependence should be presumed to be high. A single firm, if it has sufficient capacity, can contribute significantly to the competitiveness of a market and to eliminate such a firm is to remove this strongly pro-competitive force.<sup>110</sup> This is also recognized in the U.S. enforcement agencies’ 1992 merger guidelines:

In some circumstances, coordinated interaction can be effectively prevented or limited by maverick firms — firms that have a greater economic incentive to deviate from the terms of coordination than do most of their rivals (*e.g.* firms that are unusually disruptive and competitive influences in the market). Consequently, acquisition of a maverick firm is one way in which a merger may make coordinated interaction more likely, more successful, or more complete. For example, in a market where capacity constraints are significant for many competitors, a firm is more likely to be a maverick the greater is its excess or divertable capacity in relation to its sales or its total capacity and the lower are its direct and opportunity costs of expanding sales in the relevant market . . . A firm may also be a maverick if it has an unusual ability secretly to expand its sales in relation to the sales it would obtain if it adhered to the terms of coordination.<sup>111</sup>

A slightly weaker presumption might be appropriate when a merger involves the elimination of a relatively new entrant that had the potential to become a maverick.<sup>112</sup>

Third, if it can be established that the relevant market is uncompetitive pre-merger, there should be a presumption that a merger that adds substantially to concentration will lead to an increased likelihood of non-competitive interdependence. This is both because the pre-existing market power renders any further lessening of competition more socially damaging and because it indicates

Lerner, “The Competition Bureau Dusts off the Interdependence (Collusion) Doctrine” (1999), *International Antitrust Bulletin* 13.

110. Unfortunately, it may not be obvious that a firm is a maverick. In a collusive situation, the presence of a maverick might affect the kinds of non-competitive outcomes firms can achieve, but within the final outcome all firms might look similar to outsiders. In the extreme, a maverick could force all firms effectively to act like perfect competitors, in which case the outside observer would not see any difference between the maverick and its rivals. There is a nice discussion of the potential importance of maverick firms in Baker, *supra*, footnote 19, at pp. 202-207.

111. See *supra*, footnote 9, at s. 2.12.

112. The Competition Bureau’s BMEGs has a brief reference to maverick firms in its discussion of interdependence: “The effect of ‘maverick’ firms, who may impede successful coordination, will also be considered.” (Director of Investigation and Research, *supra*, footnote 13, at para. 69.)

that conditions are good enough to support non-co-operative outcomes. Therefore, whether the merger enhances interdependence further or merely protects participants from any increased competition, it is socially costly (absent any efficiencies). To the extent that the merger helps to entrench a currently uncompetitive market outcome, the case may be more one of the merger "preventing" rather than lessening competition, of course.

Finally, the most difficult cases will require detailed case-by-case analysis. In a concentrated market with high barriers to entry and satisfying many of the conditions facilitating interdependence listed above we should be concerned about enhanced interdependence. A history of anticompetitive activity would reinforce this concern.

### III. UNILATERAL AND INTERDEPENDENCE THEORIES: LAW, POLICY AND CASES

#### 1. Canadian Law and Policy

Section 92(1) of the Competition Act allows that the Competition Tribunal (the Tribunal) may order the dissolution of a completed merger or prohibit the consummation of a proposed merger if it finds that the merger "prevents or lessens, or is likely to prevent or lessen, competition substantially". There is no distinction drawn between, or reference made to, unilateral and interdependence effects. The Act also directs the Tribunal to look beyond simple structural factors before condemning a merger. Section 92(2) states that "the Tribunal shall not find that a merger or proposed merger prevents or lessens . . . competition substantially solely on the basis of evidence of concentration or market share". Section 93 of the Act lists a number of factors that the Tribunal "may" consider when determining whether a merger adversely affects competition. These factors include the effects of foreign competition, the existence of acceptable substitutes, barriers to entry, effective competition remaining, removal of a vigorous and effective competitor, change and innovation in the market, and whether one of the parties is likely to fail absent the merger. Notable in this list is s. 93(f), which relates to the removal of a vigorous and effective competitor. While this could be interpreted as a (pro-intervention) reference to a maverick firm, it would not appear that this is always consistent with the Competition Bureau (the Bureau)'s interpretation which in some cases seems to see

s. 93(f) as a (anti-intervention) way for the Tribunal to permit mergers in which the acquired firm has been a particularly ineffective competitor.<sup>113</sup>

The Competition Bureau's approach to mergers is articulated in its Merger Enforcement Guidelines (the Guidelines). The Guidelines recognize the different mechanisms by which a merger can lessen competition.<sup>114</sup> Section 2.2 states that "[A] merger can lessen competition in two different ways. The first is where it is likely to enable the merged entity to unilaterally raise price in any part of the relevant market. The second is where it is likely to bring about a price increase as a result of increased scope for interdependent behaviour in the market."<sup>115</sup> Consistent with the views expressed above, the Guidelines clearly indicate that the Bureau's concerns about interdependence extend well beyond preventing explicit collusion:

Interdependent behaviour includes an explicit agreement or arrangement with respect to one or more dimensions of competition, as well as other forms of behaviour that permit firms to implicitly coordinate their conduct, e.g. through facilitating practices, the interplay of market signals, or conscious parallelism.<sup>116</sup>

The Guidelines indicate that before proceeding with a full analysis of the competitive effects of a merger when there are concerns with respect to unilateral or co-ordinated effects, the bureau first determines market shares and the degree of concentration in the relevant market to apply two filters. First, the Commissioner (formerly the "Director") will not normally be concerned about unilateral effects if "the post-merger market share of the merged entity would be less than 35 percent".<sup>117</sup> Second, the Commissioner will not normally challenge a merger on the basis of concerns about interdependence where the four-firm concentration ratio post-merger would be less than 65% or if the merged entity would have a share of less than 10%. Furthermore, barriers that would prevent entry in response to an attempt to exercise market power by firms in

113. The Bureau's approach might be changing, however. The (subsequently abandoned) joint venture between Petro-Canada and Ultramar discussed *infra* led the Director to be concerned about the removal of a maverick firm.

114. As discussed above, it was not until the 1992 Guidelines that the American antitrust agencies' guidelines made this explicit a distinction between unilateral and coordinated effects.

115. See *supra*, footnote 9.

116. *Ibid.*, at s. 2.2.

117. *Ibid.*, at s. 4.2.1.

the market must be present before the Bureau will attempt to block a merger.

When these thresholds are exceeded and there is evidence of barriers to entry, the Bureau will determine whether other conditions exist that either permit remaining firms in the market to reach and monitor explicit agreements or tacit understandings and punish deviations from co-operative arrangements, or that facilitate simple conscious parallelism. While it is not intended to be exhaustive, the list given in the Guidelines is shorter than that above. Specific reference is made to "removal of a vigorous and effective competitor", change and innovation, market transparency and transaction value and frequency.

In anticipation of the need to review mergers among large banks in Canada, the Competition Bureau drafted a set of enforcement guidelines tailored to the financial services industry.<sup>118</sup> The Merger Enforcement Guidelines as Applied to a Bank Merger (BMEGs) repeat the concerns for both unilateral and interdependence effects, but here there is no explicit reference to conscious parallelism. Rather, they explain that "Interdependent behaviour refers to explicit or implicit understandings among firms in the market to jointly exercise market power or limit competition on price, quality, service, variety, or any other dimension."<sup>119</sup> Something closer to conscious parallelism, however, is suggested in para. 19, which states that "Interdependent behaviour includes an understanding among firms in the market to profitably increase price or to compete less vigorously."<sup>120</sup>

On the other hand, the BMEGs are more explicit than the MEGs in their discussion of the factors that increase concerns related to interdependent behaviour post-merger. According to the BMEGs:

[T]he term 'interdependent behaviour', also known as coordinated behaviour, refers to conduct by a group of firms that is profitable for each of them only because of the accommodating co-operative conduct of the others. Such behaviour is more likely in markets in which firms can recognize and reach a co-operative understanding, monitor one another's behaviour, and respond to

118. These new guidelines do not replace the MEGs; rather, they provide guidance about how the established guidelines would be applied to a merger of Schedule I banks: "The approach that the Bureau intends to use in reviewing bank mergers is consistent with the approach described in the MEGs."; Director of Investigation and Research, *supra*, footnote 13, at para. 4. For example, the BMEGs apply the same market share and concentration thresholds described above with reference to the MEGs.

119. *Ibid.*, at para. 7.

120. *Ibid.*

any deviations from the co-operating behaviour by others. This type of behaviour may include tacit or explicit agreements on price, service levels, or any other dimension of competition.<sup>121</sup>

The BMEGs list the factors that can affect the ability of firms to detect and successfully deter deviations from a co-operative understanding, as follows:

- i) Transparency of the terms of market transactions. When prices are transparent to market participants, deviations are more easily detected;
- ii) Stability of underlying costs. When costs fluctuate, it may be difficult to determine whether a price change represents a deviation from an understanding or is rather a response to a change in cost conditions;
- iii) Size and frequency of product sales. When sales occur in large discreet blocks and are relatively infrequent, then deviations from understandings are relatively more profitable and effective deterrence of deviation is more difficult; and,
- iv) Multi-market exposure. When firms participate in multiple geographic or product markets, there are greater opportunities to discourage firms from deviating from the co-operative understanding.<sup>122</sup>

The Bureau will also "... examine whether there is a history of market participants having engaged in interdependent behaviour in the past. The effect of 'maverick' firms, who may impede successful coordination, will also be considered."<sup>123</sup>

## 2. Canadian Cases

Several Tribunal and court decisions discuss the role of relevant market definition and the criteria to be used to define markets. Among the s. 93 factors, however, only s. 93(d) (barriers to entry) has generated significant commentary by the Tribunal. The other factors appear to have played a much smaller role in Tribunal deliberations in merger cases, at least judging from published decisions. The discussions of theories of competitive effects have been even more limited.

The only statement from the Tribunal about the boundary between unilateral effects and interdependent behaviour theories is contained in the *Imperial Oil* decision. The Tribunal wrote that the two issues that should be "the focus of attention in any merger case [are]: possible emergence of a dominant firm; [and] enhanced

121. *Ibid.*, at para. 65.

122. *Ibid.*, at para. 68.

123. *Ibid.*, at para. 69.



ability for tacit collusion".<sup>124</sup> Earlier in the same decision it observed:

[One of the experts for the respondent] set out what he considered to be the two possible anticompetitive effects which the Tribunal should focus upon in considering any merger: whether the merger would lead to the merged firm acquiring a dominant market position; whether the merger would enhance the ability of firms in the market [in an oligopolistic situation] to engage in various implicit forms of collusion [with respect to price, market share, etc.]. No one disputed the appropriateness of [this] conceptual framework . . .<sup>125</sup>

Without knowing precisely what it means by "various implicit forms of collusion" it is impossible to say whether the Tribunal will consider concerns about conscious parallelism-type interdependence important enough to represent a "substantial" lessening of competition.

*Imperial Oil* was the only Tribunal case in which interdependent behaviour was alleged by the Director. The case involved the merger of two large vertically integrated petroleum companies, Imperial Oil Limited and Texaco Canada. Three geographic markets for refined product were defined by the Director, these being the Atlantic region, Ontario and Quebec, and western Canada.<sup>126</sup> The merger left Atlantic Canada with two refiners, and one of them did not sell to independent marketers. In Ontario and Quebec, the number of refiners fell from six to five, while there was no change in the number of refiners in western Canada.

In its application to the Competition Tribunal in this matter, the Bureau alleged that because the major refiners were vertically integrated into downstream marketing, the merger would result in an increased opportunity for horizontal interdependent behaviour among refiners. Vertical integration allowed refiners to more closely monitor wholesale prices, and the Bureau asserted that "[P]rice transparency is a vital facilitator of oligopolistic interdependent behaviour between refiners. Accordingly, the increased concentration brought about by this merger provides the basis for one of the Director's primary competition concerns about the

124. *Canada (Director of Investigation and Research) v. Imperial Oil Limited* (unreported, February 6, 1990, Comp. Trib., file no. CT89/3), at p. 54.

125. *Ibid.*, at p. 36.

126. There were also concerns about the concentration of gasoline retailing in a number of local markets.

merger: the increased potential for anti-competitive use of market power."<sup>127</sup>

While the reference to monitoring prices of competitors suggests that the Bureau had concerns that the merger would increase the likelihood of either tacit or explicit collusion, the Bureau also cited a Restrictive Trade Practices Commission report that "expressed similar concerns". In part, the reference to the report reads as follows: "The risk is as much from competitive interdependence as it is from tacit understandings arising. There is less chance of discord developing from differing strategies among firms or from imbalances in supply and demand within firms."<sup>128</sup>

Structural factors, in addition to the ability of refiners to monitor each others' prices, created concerns about the competitive implications of the merger. The most important of these factors were the loss of excess Canadian refining capacity and the lack of an import option in some markets.

Since the Tribunal was asked only to approve a draft consent order agreed to by the Director and the parties, it did not have to evaluate arguments relating to whether a substantial lessening of competition due to interdependent behaviour was actually likely. The Tribunal's reasons for its decision therefore did not contain any clues about the evidentiary standard that would be applied in evaluating such arguments.

Another recent merger investigation involved a refining and marketing joint venture that would combine all the downstream assets of PetroCanada and the Canadian and some U.S. downstream assets of Ultramar Diamond Shamrock. The agreement was proposed in January of 1998, but was abandoned after the Director expressed his concern to the parties in June of 1998 that competition was likely to be adversely affected.<sup>129</sup> The Bureau did not explicitly state whether its concerns related to unilateral effects or interdependent behaviour, although it did cite the loss of a vigorous and effective competitor, and the increase in concentration in gasoline and distillate product markets.<sup>130</sup>

127. Notice of Application, *Canada (Director of Investigation and Research) v. Imperial Oil Limited* (unreported, June 29, 1984, Comp. Trib., file no. CT89/3), at para. 19.

128. *Ibid.*, at para. 20.

129. Competition Bureau News Release, "Petro-Canada and Ultramar have decided to discontinue their joint venture" (June 23, 1998).

130. Lerner interprets the Director's concerns as being related to interdependence: see Lerner, *supra*, footnote 109.

In several cases, the Tribunal has relied on the s. 93 factors without being explicit about the weight given to each of these factors in its deliberations. As McFetridge has noted, however:

... an argument that the section 93 requirements for a substantial lessening of competition have or have not been met may have to be based on more than a recitation of market shares and concentration ratios and a qualitative assessment that substitutes are poor, entry barriers are high, and foreign competition is weak. The questions are, how poor, how high, how weak, and how do these factors combine with increased market concentration to produce post-merger price increases and deadweight loss.<sup>131</sup>

The exception to this imprecision is the barriers to entry factor, which appears to have been accorded the status of a trump that can overcome any level of market concentration. In the *Hillsdown* decision, for example, the Tribunal indicated that: “[I]n the absence of significant entry barriers it is unlikely that a merged firm, regardless of market share or concentration, could maintain supra-competitive pricing for any length of time. An attempt to do so would cause competitors to enter the market and the additional supplies created in that manner would drive prices back to the competitive level.”<sup>132</sup>

The potential pitfalls of applying facts about the market without using a theory of competitive effects to frame the analysis can also be illustrated by the *Hillsdown* decision. After a contested proceeding, the Tribunal found that the acquisition by a meat rendering company, *Hillsdown Holdings*, of *Canada Packers*, and in particular its rendering business, *Orenco*, was not likely to result in a substantial lessening of competition. The Tribunal appears to have assessed this merger in the context of a potential unilateral exercise of market power. The Tribunal wrote that:

A merger will lessen competition if it enhances the ability of merging parties to exercise ‘market power’ by either preserving, adding to or creating the power to raise prices above competitive levels for a significant period of time. One considers the degree of any such likely increase and whether by reference to the particular facts of the case it should be characterized as substantial.

Whether an enhancement of market power exists as a result of a merger and whether it is substantial is determined by reference to a number of factors. Market share data can give a *prima facie* indication as to whether such is the case.<sup>133</sup>

131. See McFetridge, *supra*, footnote 108, at p. 69.

132. *Director of Investigation and Research v. Hillsdown Holdings (Canada) Ltd.* (1992), 41 C.P.R. (3d) 289.

133. *Ibid.*, at p. 314.

The reference to “the ability of merging parties to exercise market power” would suggest a concern with unilateral market power.

After considering concentration levels based on a variety of measures of market share, the Tribunal concluded that “the various measurements indicate that the merger increases market share considerably in an already highly concentrated market and gives rise to at least an initial concern that the merger will likely substantially lessen competition in that market”.<sup>134</sup> Noting first that market share cannot by itself predict market power, the Tribunal turned to consideration of excess capacity by competitors to the merged entity, and observed that:

[I]f other firms in the market have excess capacity, they can respond to a supra-competitive price rise by flooding the market at a lower price level. As a result, the best question to ask when assessing market power, in some circumstances, is whether the respondents’ current competitors have capacity available to serve what would otherwise be the merged firm’s customers. One of the most significant sources of high supply elasticity is the excess capacity of competing firms. The respondents argue that *Rothsay-Orenco* competitors have extensive excess capacity in comparison to the merged firm and therefore the merged firm will not be able to exercise significant market power.<sup>135</sup>

The Tribunal considered evidence about market participants’ excess capacity and seems to have accepted the merged firm’s argument that the existence of sufficient excess capacity by competitors can overcome an initial concern about market concentration. It noted that “[T]he excess capacity of firms both within and outside the relevant market will provide a degree of competitive pressure on the merged firm and restrain to a considerable extent its ability to raise prices.”<sup>136</sup> In concluding that the merger would not lessen competition substantially, the Tribunal wrote that:

[T]he fact that there is excess capacity everywhere in the relevant market and in the rendering plants proximate thereto means that constraint will exist on the merged firm’s ability to raise prices . . . [I]n light of these considerations, the Tribunal finds that it has not been convinced, on the balance of probabilities, that a substantial lessening of competition is likely to arise as a result of the mergers of the two rendering businesses.<sup>137</sup>

The Tribunal’s conclusions about the competitive effects of the merger demonstrate the usefulness of a more explicit theory. As explained above, unilateral effects theories show that in many

134. *Ibid.*, at p. 318.

135. *Ibid.*, at p. 318.

136. *Ibid.*, at p. 321.

137. *Ibid.*, at p. 330.

circumstances, mergers increase *equilibrium* prices in the market, notwithstanding the fact that non-merging competitors have the capacity to absorb an increase in demand resulting from an increase in price by the merged entity. In a Cournot model, for example, a reduction in quantity by the merged firm is met by an increase in quantity by outside firms, but the net quantity effect is negative — that is, post-merger, quantity falls and, consequently, price rises (with a corresponding loss in economic surplus). This result holds even if competitors have significant excess capacity, although price increases are likely to be higher the lower the level of excess capacity in the market. In a differentiated product Bertrand model, an increase in price by merging parties causes an increase in price by non-merging firms, even if there is excess capacity, with the result that prices of all firms in the market increase after the merger.

In *Southam*,<sup>138</sup> the Tribunal concluded that the community newspapers acquired by Southam were not in the same relevant market as the two daily newspapers already owned by Southam. Accordingly, it found that the acquisition did not lessen competition substantially. The Tribunal did, however, find that Southam's acquisition of the *Real Estate Weekly* would likely lessen competition substantially. This conclusion was based on the findings that no acceptable substitutes for print real estate advertising remained in the market, that an effective competitor was eliminated by the merger and no effective competitors remained, and that the threat of entry could not be relied upon to constrain post-merger price increases. Since, in the Tribunal's view, none of the s. 93 factors supported allowing the merger in this market, the Tribunal saw no need to articulate the appropriate weights for the factors.

### 3. Bank Mergers

An increased likelihood of interdependent behaviour was among the concerns of the Bureau in its review of the recent bank mergers.<sup>139</sup> The Director explained his conclusions on the effects of the

mergers in a letter to the Chairmen of the Bank of Montreal and the Royal Bank of Canada, which in part reads as follows:

The Bureau has examined the proposed transaction to determine the potential for a substantial lessening of competition through the exercise of interdependent behaviour at both local and national levels. This lessening can result from either explicit agreements or from implicit recognition among firms that, in the new post-merger environment, reduced competitive vigour would be more profitable for all.

A small number of sellers in any one market increases the risk of interdependent behaviour, and the Bureau has determined that the proposed merger significantly increases concentration in an already concentrated industry. If both proposed mergers proceed, the number of major banks will decline from five to three, and concentration will be even higher. A high level of concentration in the relevant market is a necessary, but not sufficient, condition for determining whether or not interdependent behaviour is likely to substantially lessen or prevent competition.

Other factors that facilitate interdependent behaviour are high barriers to entry, the homogeneity of products, the predictability of demand and costs, the stability of market shares, good information about pricing and customers, and the degree of industry cooperation (e.g. in associations, joint ventures, alliances, networks and loan syndicates). To a large degree, these factors appear to be present in this industry.

It is important to note that the Bureau does not believe that collusion in banking is likely, given the repercussions such conduct would have if detected. However, in view of the expert advice received by the Bureau on this issue, there is concern that the proposed merger will increase the risk for reduced competitive vigour among the remaining major banks. This risk is compounded should the other proposed merger also proceed.<sup>140</sup>

Note that the Director was not concerned that the increase in concentration in banking markets would result in explicit agreements among banks to increase prices or restrict output. Rather, his concern was that a reduction in the number of banks would create incentives for firms to behave less aggressively when competing with other banks and financial institutions. Again, although not precisely defined, the reference to "reduced competitive vigour" is consistent with a concern for interdependence due to conscious parallelism.

138. *Canada (Director of Investigation and Research v. Southam Inc.* (1992), 43 C.P.R. (3d) 161, rev'd 127 D.L.R. (4th) 263, 63 C.P.R. (3d) 1 (F.C.A.), rev'd 144 D.L.R. (4th) 1, [1997] 1 S.C.R. 748.

139. Both authors were involved in the Bureau's evaluation of the bank mergers; Ross was retained as an expert by the Commissioner and Baziliauskas was the Bureau's senior staff economist.

140. Letter from the Director of Investigation and Research to John E. Cleghorn, Chairman and Chief Executive Officer, Royal Bank of Canada, and Matthew W. Barrett, Chairman and Chief Executive Officer, Bank of Montreal. Identical language was contained in a letter to the Chairmen of the Canadian Imperial Bank of Commerce and the Toronto-Dominion Bank concerning their proposed merger.

The Bureau's letters to the bank chairmen also suggest a concern with unilateral effects, although this term was not used. For example, the letter to the Royal Bank and the Bank of Montreal stated that "assessing the effectiveness of remaining competition is an important consideration in determining whether or not the merged bank would be constrained in raising prices or reducing the quality of service"<sup>141</sup> and, after discussing the effectiveness of a number of other financial institutions, went on to state that the "Bureau has considered the degree to which the competitors could replace the competition lost as a result of the proposed merger".<sup>142</sup> These and other similar statements indicate that the abilities and incentives of non-merging financial institutions to respond to post-merger price increases were important considerations in the Bureau's analysis, and these considerations are consistent with a concern that unilateral effects will arise post-merger.

Furthermore, the Bureau's use of merged-firm market share thresholds, rather than thresholds based on four-firm concentration ratios, to distinguish between local retail banking markets that are likely to experience a substantial lessening of competition from those that are merely problematic or not problematic, suggests attention to unilateral market power concerns, since in both the MEGs and the BMEGs, the sum of merged firms' market shares is used as an initial screen for potential unilateral effects. However, our interpretation of the Bureau's conclusions on the bank mergers is that they revealed concerns about both unilateral and interdependence effects.

#### 4. On the U.S. Approach

It is beyond the scope of this article to offer a critical analysis of the approach taken by the American antitrust authorities to the questions that concern us here. That said, we offer a few comments about the appropriateness of this approach in Canada. As described in the current merger guidelines issued jointly by the Antitrust Division of the Department of Justice and the Federal Trade Commission, their approach to interdependence (or "co-ordinated effects") has relied to a considerable extent in the past on a rather

141. *Ibid.*

142. *Ibid.*

mechanistic application of concentration measures.<sup>143</sup> The Guidelines use the Herfindahl-Hirshman Index ("HHI") to measure concentration; the HHI for a market is calculated by summing the squares of the individual market shares of all firms selling in the relevant market. If the post-merger HHI is below 1,000, the market is viewed as unconcentrated and mergers here would typically not raise concerns. At the other extreme, if the post-merger HHI is above 1,800 (as it would be with, for example, five firms with equal market shares) the market is considered concentrated and any merger that raises the HHI by more than 100 points will be presumed "to create market power or facilitate its exercise". In a sort of mid-range, while there is not a presumption against such mergers, "significant competitive concerns" will be raised by mergers in concentrated markets that increase the HHI by between 50 and 100 points and in "moderately concentrated" markets (HHI between 1,000 and 1,800) in which the merger raises the HHI by more than 100 points.

A presumption of competitive harm can be rebutted with other evidence that the merger will not create or enhance market power — for example, evidence on ease of entry or on the difficulties faced by firms trying to co-ordinate pricing. Nevertheless, the calculation of a market's HHI and the impact of the merger on that HHI came to dominate many merger reviews.<sup>144</sup> This approach then differs from the Canadian most obviously in its use of the HHI measure of concentration and, more significantly, in its addition of a "likely challenge" threshold to the "safe harbours" of the sort also found in the Canadian MEGs. As argued by Lande and Langenfeld,<sup>145</sup> more recently the American agencies have supplemented this structural analysis with theory-based evidence that sheds light on the likelihood of a merger to be anticompetitive. For the most part, however, this expanded investigation has involved considerations of unilateral effects in markets with differentiated products. It is less clear that the current approach to co-ordinated effects has much changed from its structural roots.

143. See U.S. Department of Justice and Federal Trade Commission, *supra*, footnote 9. The thresholds are described in Section 1(5).

144. Of course, the recent movement to focus more (than in the past) on concerns of unilateral market power has brought forward a number of cases for which overall market concentration numbers have not been so relevant or important.

145. Robert H. Lande and James Langenfeld, "From Surrogates to Stories: The Evolution of Federal Merger Policy" (1997), 11 *Antitrust* 5.

We are not convinced that a strong structural approach is a model for Canada for two reasons.<sup>146</sup> First, while the mechanical application of HHI-based criteria might seem to make decision-making easier, more predictable and more transparent, it can merely shift the battlefield to market definition. Since the way markets are defined — also not a very precise science — will determine the HHIs calculated, the parties have every interest in promoting a market definition that is as wide as possible.<sup>147</sup> Second, the actual levels of HHIs (or their rough equivalents in terms of four-firm concentration ratios) in the U.S. guidelines would likely be inappropriate in the Canadian context. As discussed briefly above, the American approach favours consumers over producers in the sense that it tolerates no post-merger price increase. In Canada, the Bureau has adopted an approach that is willing to accept higher prices if the costs to consumers are outweighed by the gains achieved by producers through efficiencies and higher profits. The more relaxed Canadian standard is, in our view, appropriate in this country. It is defensible in economic theory — indeed, it is consistent with the way economists have done cost-benefit analysis of public projects for many years.<sup>148</sup> We would also argue that it is more appropriate in a smaller economy in which markets are small enough that concentration is necessary to allow firms to achieve economies of scale.

### 5. Summary

Our review of the economic theory of the lessening of competition in Section II suggested that antitrust officials should be concerned about both unilateral and interdependence effects of mergers in concentrated markets with substantial barriers to entry. In principle, interdependence concerns need not only arise when

146. On the problems with this approach, see also Lande and Langenfeld, *ibid.*

147. Actually, there is an exception to the rule that the merging parties want to define markets as broadly as possible. If market can be defined narrowly enough that the merging firms are seen to be in different markets, the merger might not be seen as anticompetitive. For example, in the *Hillsdown* merger, the finding that the merging parties were each moving toward a specialization — one in red meat rendering, the other in white meat rendering — combined with a determination that these were separate markets, contributed to the finding that the merger would not lessen competition substantially.

148. We recognized that this approach does not garner universal support and that, in light of Madam Justice Reed's comments in the *Hillsdown* decision, there is some debate about the appropriate way to balance the benefits and costs flowing to the various stakeholders in a merger: see, for example, Allen, *supra*, footnote 13.

there is a fear that firms in a market will come to some sort of agreement. Indeed, any lessening of competition — even that through mere conscious parallelism — makes markets less efficient.

The case history is rather short and does not provide a clear indication of just what is the Canadian law on these questions, but it does reveal three things. First, even though it has largely faced merger cases involving concerns over unilateral market power, the Competition Tribunal has apparently recognized the possibility of interdependence effects (in *Imperial Oil*). In addition, the Bureau's MEGs, BMEGs, its documents in *Imperial Oil* and its letters to the bank chairmen all establish that it will certainly consider the potential for both unilateral and interdependence effects. Finally, the MEGs and the letters to the bank chairmen also reveal a willingness on the part of the Bureau to consider consciously parallel behaviour as an example of the sort of interdependence with which it will concern itself in merger review.

### IV. CONCLUSIONS

In this article, we have reviewed the economic theory that underlies concerns about the lessening of competition after mergers in concentrated markets. While this theory does provide some guidance that can be helpful to the Competition Bureau and Tribunal, there remains some uncertainty regarding just what is the effective law in Canada. Specifically, until we have the benefit of learning from more cases, we cannot be sure how the Tribunal will receive an attempt to block a merger due solely to concerns over interdependence.

The possibility that some mergers involving large firms will lead to unilateral market power effects and a substantial lessening of competition seems to be well recognized in Canada and has been somewhat recently “rediscovered” in the United States. However, the fact that the case for interdependence effects has not been well tested in Canada brings up at least two sets of questions regarding the application of the law in this area. First, given the inherent difficulty in predicting when interdependence will be facilitated by a merger, will the Tribunal give concerns about interdependence expressed by the Director the same weight it gives concerns about unilateral effects? And, if it is open to interdependence arguments, what evidence will it consider most persuasive

in establishing an interdependence case? Second, to the extent it accepts arguments that some mergers enhance interdependence and that this can lessen competition substantially, will the Tribunal require evidence that the merger will facilitate explicit collusion; will it consider the possibilities for tacit collusion; and will it be concerned about conscious parallelism?

In a nation with as many concentrated industries as Canada, the scope for the Bureau to attempt to block mergers with interdependence arguments is clearly great. This will worry many people who find the theoretical arguments of interdependence too flimsy a foundation for a good case. While we agree that there is a potential for abuse and that the Tribunal and Competition Bureau should proceed cautiously in this area, the alternative of ignoring interdependence effects strikes us as completely inappropriate.<sup>149</sup> We believe that the theory described above, judiciously applied, provides sufficient guidance to distinguish mergers that are likely to lessen competition substantially from those that are not. For example, in our view — and, we believe, the views of most antitrust economists — the Bureau should be very concerned about mergers of large firms in highly concentrated markets, with high barriers to entry, and a history of collusion and facilitating practices. This is an extreme example, of course, and we do not propose here a formula to determine when interdependence effects will be large and certain enough to be a concern. Our point, however, is that there will be mergers in which a good interdependence case can be made, and that the Bureau and Tribunal should be prepared to consider them. A few carefully crafted judgments could then go a long way toward establishing the parameters for a successful interdependence case and reducing the uncertainty that now exists.<sup>150</sup>

149. There is a compromise position that would remove interdependence from the official concerns expressed, for example, in the MEGs, but lower the market share thresholds for unilateral effects cases as a way to catch more mergers of large firms in concentrated markets. While admitting the possibility that such an approach might be easier to implement, it is not intellectually honest and this could lead to errors. For example, it would prevent the introduction of relevant evidence pertaining to collusion (e.g. a history of collusion) or lesser degrees of interdependence.

150. Recall that when the Competition Act came into force in 1986, there was uncertainty about what market shares would trigger unilateral effects concerns. The cases since then have reduced that uncertainty.

## COMMENTARIES

### *BRAINTECH, INC. V. KOSTIUK: ADJUDICATORY JURISDICTION FOR INTERNET TORTS*

#### 1. Introduction

*Braintech, Inc. v. Kostiuk*<sup>1</sup> is the first appellate decision in Canada to deal directly with private law aspects of the Internet. Although it concerned the relatively narrow matter of enforcement of a foreign judgment arising from defamatory material on an electronic bulletin board, it may nourish discussion of a broader range of issues. These might include both contractual disputes and deceptive trade practice prosecutions arising from electronic commerce, cyberspace copyright infringement, and Internet porn and hate speech. *Braintech* may even have some indirect effect on the underexamined but significant constitutional question of which aspects of Internet regulation fall within federal legislative competence and which are properly left to the provinces.

The link among these disparate areas is legal method. Anyone who has given thought to the Internet appreciates that lawmakers will have to be flexible and accommodating if they are to do justice in this area. The new communications technologies of the 1990s differ from those that preceded them. Unreflective, mechanical attempts to deal with those technologies in terms of categories and standards formulated in an earlier communications era are bound to be inadequate. That much is commonplace. Some scholars, however, have maintained that mere adaptiveness will not suffice. In sometimes romantic terms possibly brought on by a surfeit of William Gibson novels, they have argued for a radically dualist separation between cyberspace and real space and have concluded that nothing short of a revolution in legal thinking is required. Prime examples here are David Johnson and David Post, who in a

1. (1999), 171 D.L.R. (4th) 46, 63 B.C.L.R. (3d) 156, [1999] 9 W.W.R. 133 (C.A.), leave to appeal to S.C.C. refused 182 D.L.R. (4th) vi, [1999] S.C.C.A. No. 236.

UNION GAS LIMITED

Undertaking of Steve Baker  
To Jim Gruenbauer  
(City of Kitchener)

To inform whether Duke Energy has performed any long term forecasts of where commodity prices and seasonal price spreads are going.

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Duke Energy has not undertaken forecasts of commodity prices and seasonal price spreads for the purpose of determining either internally or for stock analyst briefings, what all or a portion of Union's storage business would be worth if it was outside of regulation.

Witness: Steve Baker  
Question: June 26, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

UNION GAS LIMITED

Undertaking of Steve Baker  
To Brian Dingwall

To provide 2007 Rate Base.

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Total rate base for 2007 based on the ADR Settlement Agreement is \$3,377.198 million.

Witness: Steve Baker  
Question: June 27, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551



UNION GAS LIMITED

Undertaking of Steve Baker  
To Brian Dingwall

To provide the size of the storage asset for 2007.

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Storage rate base for 2007 based on the ADR Settlement Agreement is \$483.619 million.

Witness: Steve Baker  
Question: June 27, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

UNION GAS LIMITED

Undertaking of Steve Baker  
To Brian Dingwall

To provide the size of the storage asset for 2007 that is associated with ex-franchise customers.  
To indicate by what basis of allocation that number was derived

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The ex-franchise portion of storage rate base is \$102.916 million based on the 2007 ADR Settlement Agreement.

The basis for the allocation is explained in Exhibit G3, Tab 1, Schedule 1, of Union's EB-2005-0520 evidence.

Witness: Steve Baker  
Question: June 27, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

UNION GAS LIMITED

Undertaking of Steve Baker  
To Brian Dingwall

To provide chronology of the improvements to deliverability in the last 20 years.  
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Table 1 attached provides a chronology of Union Gas' estimated March 1 design day deliverability enhancements since 1988.

Storage deliverability is dependent on Union's integrated storage network and is a function of the number of wells, reservoir performance, gathering and storage pipelines and compression facilities.

Witness: Steve Baker / Steve Poredos  
Question: June 27, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

**Table 1**  
**Union Gas Limited**  
**Deliverability Enhancement Chronology**

<b>Year</b>	<b>Development Type</b>	<b>March 1 (Design Day) Deliverability (GJ/d)</b>
2000	Greenfield	65,717
1997	Enhancement <sup>(1)</sup>	346,736
1993	Greenfield	40,108
1992	Greenfield	74,680
1991	Greenfield	10,658
1990	Greenfield	27,831
1989	Greenfield	44,702
1988	Greenfield <sup>(2)</sup>	106,804

Notes:

1) Bentpath-Rosedale enhancement project.

2) Operated by Enbridge.

UNION GAS LIMITED

Undertaking of Steve Baker  
To Board Chair

To provide the additional volumes and average prices related to K.2.3.

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Please find attached (Attachment 1) a chart showing the S&T transactional volumes and gross revenues related to the S&T transactional gross margins presented in Undertaking K.2.3 (also attached as Attachment 2).

The attached table provides:

1. The long term storage space sold at market rates on a calendar basis related to Account 179-72.
2. The short term and off peak storage space, as well as the park and loan space, sold at market rates on a calendar basis related to account 179-70.
3. The average annual total rate (gross revenue) achieved for long term storage space.
4. The average annual total rate (gross revenue) achieved for short and off peak space, as well as park and loan space.

Long and short term storage contracts have a term beginning on April 1 of any year and ending March 31 the following year. The chart has been presented on a calendar basis. Off peak storage space is virtually of unlimited supply since it is space available at all times of the year except during the peak period at October 31. Contracted off peak space will vary monthly with market conditions and customer demand. The chart includes the total off peak space sold annually.

Witness: Steve Baker / Steve Poredos  
Question: June 27, 2006  
Answer: July 7, 2006  
Docket: EB-2005-0551

Union Gas Limited  
Summary of Storage Quantities and Average Calendar Rates

Line No.	Particulars	1997	1998	1999	2000	2001	2002	2003	2004	2005
	<u>Quantity (PJ's)</u>									
1	Long Term Space- 179-72	6.7	6.7	12.2	21.8	33.2	37.8	48.7	46.6	43.0
2	Short term/ offpeak storage services including park and loan services - 179-70	50.9	27.6	29.6	45.8	67.4	48.5	42.6	32.8	30.3
(1)	<u>Average Rate (CDN/GJ)</u>									
3	Long Term Space- 179-72	0.20	0.87	0.46	0.45	0.49	0.67	0.59	0.68	0.69
4	Short term/ offpeak storage services including park and loan services - 179-70	0.19	0.53	0.33	0.36	0.15	0.76	0.51	0.85	0.74

Notes

- (1) Rates were calculated using calendar revenues; contract details are not readily available in time permitted.
- (2) Verifiable information was not available for the years 1997 & 1998, the information is best available.
- (3) Timing differences may be impacting the calendarized average rate calculations/

Union Gas Limited  
Summary of Historical Storage Transactional Services sold at Market Based Rates  
For the Years Ending December 31  
 (\$000's)

Line No.	Particulars	Actual								
		1997 (a)	1998 (b)	1999 (c)	2000 (d)	2001 (e)	2002 (f)	2003 (g)	2004 (h)	2005 (i)
1	<u>Short term storage and balancing services margin</u> Gross Margin	8,625	11,110	6,736	2,417	2,847	14,950	11,463	22,027	15,306
2	<u>Long term storage services margin</u> Gross Margin	-	1,427	(1,179) (1)	242	1,669	5,169	9,014	16,271	16,451
3	<u>Total Storage Services Margin</u>	<u>8,625</u>	<u>12,537</u>	<u>5,557</u>	<u>2,659</u>	<u>4,516</u>	<u>20,119</u>	<u>20,476</u>	<u>38,299</u>	<u>31,757</u>
	Seasonal price spreads (Potential storage value) US/MMBTU (also shown in Exhibit D Tab 2 Appendix L)									
	High		0.72	0.69	0.40	0.91	0.96	0.69	1.86	1.35
	Low		0.17	0.21	-0.05	0.18	0.44	-0.25	0.25	0.45

Notes:

- (1) Timing Differences
- (2) Line 1 would be credited to Account 179-70
- (3) Line 2 would be credited to Account 179-72
- (4) Gmi's 22.6 PJ of M12 storage is converted to C1 market based storage in 2001

UNION GAS LIMITED

Undertaking of Mark Isherwood  
To Board Chair

To provide a list of storage operators and volumes they purchase or contact person at operator if volume information unavailable

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The attached is a summary table of storage holders at ANR Pipeline, ANR Storage, Michon and Washington 10.

Witness: Mark Isherwood  
Question: June 29, 2006  
Answer: July 12, 2006  
Docket: EB-2005-0551



**Summary table of storage holders at ANR Pipeline, ANR Storage, MichCon and Washington 10**

**ANR Pipeline Company**

03/04/2006

<b>Union Customer</b>	<b>Shipper Name</b>	<b>Space</b>
	AQUILA, INC.	3,160,300
	ATMOS ENERGY CORPORATION	630,500
Yes	BP CANADA ENERGY MARKETING CORP.	14,648,059
	CENTRA GAS MANITOBA	14,700,000
	CENTRAL ILLINOIS LIGHT COMPANY	1,517,300
	CIMA ENERGY, LTD	300,000
	CINERGY MARKETING & TRADING	5,000,000
Yes	CORAL ENERGY RESOURCES, L.P.	5,000,080
Yes	DTE ENERGY TRADING	1,298,032
	EAGLE ENERGY PARTNERS	8,953,339
	ILLINOIS POWER COMPANY	31,850
	INTERSTATE POWER & LIGHT COMPANY	1,590,862
	MADISON GAS & ELECTRIC COMPANY	4,942,822
	MIDAMERICAN ENERGY COMPANY	242,030
	NEW JERSEY NATURAL GAS CO	3,034,620
Yes	NEXEN MARKETING U.S.A. INC.	3,034,590
Yes	NJR ENERGY SERVICES COMPANY	6,069,225
	NORTH SHORE GAS COMPANY	6,378,000
	NORTHERN INDIANA FUEL & LIGHT CO, INC	1,457,450
	NORTHERN INDIANA PUBLIC SERVICE COMPANY	6,410,250
	OCCIDENTAL ENERGY MARKETING, INC.	3,000,000
	OHIO GAS COMPANY	439,990
	OHIO VALLEY GAS COMPANY	514,650
	PANHANDLE EASTERN PIPE LINE COMPANY	4,045,100
	PEOPLES ENERGY WHOLESALE MARKETING, LLC	440,000
	PROLIANCE ENERGY, LLC	4,476,000
	SEMCO ENERGY GAS COMPANY	2,528,800
	STORA ENSO NORTH AMERICA CORP	621,950
Yes	TENASKA GAS STORAGE, LLC	4,794,342
	THE PEOPLES GAS LIGHT & COKE COMPANY	10,115,300
	UGI ENERGY SERVICES INC	2,780,289
	WEST TENNESSEE PUBLIC UTILITY DISTRICT	275,000
	WISCONSIN ELECTRIC POWER COMPANY	12,333,950
	WISCONSIN GAS LLC	17,312,200
	WISCONSIN POWER & LIGHT CO.	4,963,150
	WISCONSIN PUBLIC SERVICE CORP	11,574,170
Yes	WPS ENERGY SERVICES, INC.	1,266,000
	unreconciled	181,646
	<b>Total Storage</b>	<b><u><u>170,061,846</u></u></b>

**ANR STORAGE COMPANY**

	<b>Shipper Name</b>	<b>Space</b>
	ATLANTA GAS LIGHT COMPANY	11,282,245
	NORTHERN STATES POWER - MN	994,305
Yes	CARGILL INCORPORATED	1,694,305
	NORTHERN STATES POWER - WI	976,950
Yes	BP CANADA ENERGY MARKETING	2,000,000
Yes	LOUIS DREYFUS ENERGY	5,000,000
Yes	NEXEN MARKETING USA	3,006,000
Yes	TENASKA GAS STORAGE LLC	1,800,000
Yes	CORAL ENERGY RESOURCES	1,000,000
	MARSEFIELD NATURAL GAS INC	1,500,000
Yes	SEMPRA ENERGY TRADING CORP	5,000,000
	<b>Total Storage</b>	<b><u><u>34,253,805</u></u></b>

**ANR PIPELINE COMPANY  
 Storage Expansion Participants**

	<b>Shipper Name</b>	<b>Service</b>	<b>Start Date</b>	<b>End Date</b>	<b>Daily</b>	<b>Space</b>
Yes	BP CANADA ENERGY MARKETING	FSS	01/04/2007	31/03/2012	50,000	4,000,000
Yes	NEXEN MARKETING USA	FSS	01/04/2007	31/03/2012	33,381	3,004,290
Yes	TENASKA GAS STORAGE LLC	FSS	01/04/2007	31/03/2014	50,577	4,551,930
Yes	CORAL ENERGY RESOURCES	FSS	01/04/2007	31/03/2012		4,000,000
	MADISON GAS & ELECTRIC SERVICE	FSS	01/04/2007	31/03/2014	10,000	500,000
	CENTERPOINT ENERGY SERVICES	FSS	01/04/2007	31/03/2012	18,182	1,000,000
<b>Total Storage</b>						<b><u>17,056,220</u></b>

**MichCon - Semi Annual Storage Report  
 April through October 2005**

	<b>Customer</b>	<b>Space</b>
Yes	ConocoPhillips	895,000
Yes	Constellation	1,000,000
Yes	Coral Energy Resources	500,000
Yes	OGE Energy Resources	5,096,000
Yes	OGE Energy Resources	1,229,000
**	People's Energy Resources	4,000,000
Yes	Virginia Power	1,000,000
<b>Total Storage</b>		<b><u>13,720,000</u></b>

Note - while People's Energy does not yet hold a contract at Dawn, Union expects them to contract for services to align with their firm Vector backhaul service from Dawn to Chicago which begins November 1, 2007

**Washington 10 - EEA reply evidence, Attachment 1**

	<b>Customer</b>	<b>Space</b>
Yes	BP Canada Energy	5,000,000
Yes	Tenaska Gas Storage Company	625,000
Yes	Oneok Energy Services Company	7,000,000
Yes	Nexen Marketing USA Inc.	2,000,000
Yes	DTE Energy Trading Inc.	26,136,000
<b>Total Storage</b>		<b><u>40,761,000</u></b>

UNION GAS LIMITED

Undertaking of Union Gas  
To Robert Warren

To identify the impact on the average residential customer from moving the price of in-franchise storage to market prices.

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The table below provides the annual cost of storage for the average residential customer in Union's Southern Operating area. The cost based amount of \$0.40/GJ, excluding commodity was calculated using the combined Standard Storage Service at 1.2% deliverability and Standard Peaking Service rate at 10% deliverability. The market prices of \$0.80 and \$1.20 are the prices that Union was asked to use as part of the impact analysis requested in the undertaking above.

The average storage usage for a residential customer is 27.6 GJs

<u>Price/GJ</u>	<u>Annual Customer Cost</u>
\$0.40	\$11.04
\$0.80	\$22.08
\$1.20	\$33.12

Witness: Steve Poredos  
Question: July 10, 2006  
Answer: July 13, 2006  
Docket: EB-2005-0551