

**IN THE ARBITRATION UNDER CHAPTER ELEVEN OF THE NORTH AMERICAN
FREE TRADE AGREEMENT (“NAFTA”) AND THE 1976 UNCITRAL ARBITRATION
RULES BETWEEN**

Resolute Forest Products,

Claimant/Investor,

-and-

Government of Canada,

Respondent/Party.

PCA Case No. 2016-13

Expert Witness Statement of Jerry Hausman, Ph.D.
February 22, 2017

Table of Contents

I.	Introduction and Qualifications	1
II.	Background and Assignment	2
III.	Information Relied Upon	6
IV.	Summary of Opinion.....	6
V.	Methodology	7
VI.	Analysis.....	8
A.	Price effects were not evident until January 2013.....	8
B.	Quantity effects were not evident during Q4 2012	13
C.	Financial effects were not evident during Q4 2012	15
D.	North American market.....	17
VII.	Conclusion	22

I. Introduction and Qualifications

1. I am the MacDonal Professor of Economics at the Massachusetts Institute of Technology (“MIT”) in Cambridge, Massachusetts. I graduated from Brown University in 1968. I received a D.Phil. (Ph.D.) in economics from Oxford University in 1973 where I was a Marshall Scholar. I have been at MIT since completing my D.Phil. My academic specialties are econometrics, the application of statistical methods to economic data, and applied microeconomics, the study of behavior by firms and by consumers.
2. In December 1985, I received the John Bates Clark Award of the American Economic Association, awarded every other year for the most “significant contributions to economics” by an economist under the age of 40. In 1980, I was awarded the Frisch Medal of the Econometric Society. In 2013, I was named a Distinguished Fellow by the American Economic Association. I have been a member of numerous government advisory committees for both the U.S. government and the Commonwealth of Massachusetts. I have published over 200 academic research papers in leading economic journals, including the American Economic Review, Econometrica, and the Rand (Bell) Journal of Economics. I have been an associate editor of Econometrica, the leading economics journal, and the Rand (Bell) Journal of Economics, the leading journal of applied microeconomics.
3. I have been a consultant in the print and paper industries since the early 1990s. I consulted for RR Donnelley, the largest printer in the US, in its acquisition of Meredith/Burda. I also testified in Federal Court proceedings and FTC administrative proceedings where the FTC challenged the acquisition. Donnelley prevailed against all

of the challenges. I continued to consult for Donnelley over the next 10 years as well as other large US and Canadian printing companies such as Quad Graphics and Quebecor. Donnelley was a very large purchaser of Supercalendered paper which is the main product at issue in this proceeding. Over this time period I have also consulted on mergers and acquisitions in the paper industry in North America and the EU, e.g. Abitibi's acquisitions. Abitibi is the predecessor company to Resolute. I have also consulted for Domtar, International Paper and for Georgia Pacific. Lastly, I have consulted for companies in the US and the EU which manufacture latex coatings for paper which competes with SC paper that is at issue in this proceeding, e.g. Trinseo (Styron) and Dow.

4. Additional details on my qualifications are provided in my curriculum vitae (**Attachment 1**). I have no interest or relationship to Claimants other than my work as an expert in this case. My address is Department of Economics, MIT, Cambridge MA 02142.

II. Background and Assignment

5. Resolute Forest Products Inc. ("Resolute"), the disputing investor, is incorporated in the State of Delaware, in the United States of America, and is registered at 1209 Orange Street, Wilmington, DE, 19801, USA. Resolute wholly owns and controls Resolute FP Canada Inc., a Canadian corporation registered at 111 Duke Street, Suite 5000, Montreal, Quebec, H3C 2M1, Canada. Resolute FP Canada Inc. was directly affected by acts for which the Canadian government is responsible under NAFTA.¹

¹ Resolute Statement of Claim at ¶¶ 11-12.

6. Port Hawkesbury Paper (“PHP”) operates as a subsidiary of Pacific West Commercial Corporation (“PWCC”),² and is located at 120 Pulp Mill Road, Point Tupper, Port Hawkesbury, NS, B9A 1A1, Canada.³ PWCC purchased the PHP mill on September 28, 2012; prior to the sale to PWCC, NewPage Corporation owned the PHP mill.⁴ The PHP mill’s capacity of 360,000 MT produces Supercalendered paper (“SCP”) grades SCA++, SCA+, SCA, and SCAB paper, and represents 21 percent of the North American capacity for SC paper.⁵
7. SCP is used for printed materials such as magazines, flyers, catalogs, retail inserts, direct mail materials, coupons, and brochures. SCP is generally sold in rolls, and has a glossy finish.⁶ SCP is sold in the following grades: SCA++, SCA+, SCA, SCB, and SNC. Typically, SCP is made to order, with little product held in inventory.⁷
8. Due to its use in retail advertisements, demand for SCP is seasonal. Consumption is higher during the second half of the year,⁸ with increased advertising and promotions leading up to the holiday season.⁹ In addition to seasonal changes in SCP demand, the SCP industry is facing a secular decline. The switch from print advertising to digital

² Resolute Statement of Claim at ¶ 31.

³ R-023, Port Hawkesbury Mill Datasheet.

⁴ Resolute Statement of Claim at ¶ 43.

⁵ R-023 – Port Hawkesbury Mill Datasheet.

⁶ C-054, USITC Final Publication, Commission Opinion at 5.

⁷ C-054, USITC Final Publication, Commission Opinion at 15-16.

⁸ C-054, USITC Final Publication, Commission Opinion at 13.

⁹ C-054, USITC Final Publication, Staff Report at II-7.

advertising as well as declining subscriptions to newspapers and magazines has affected the entire paper industry.¹⁰

9. In August 2011, after a year of negative profits,¹¹ NewPage announced that it would close the PHP mill, with the SC paper machines shutting down on September 16, 2011.¹² The Nova Scotia Government kept the mill in a “hot idle” state and kept the mill from being sold for scrap. Through a series of measures including rejecting scrap buyers’ proposals, preferential electricity rates, and a \$124 million CAD aid package, the Nova Scotia Government, through a court-appointed Monitor, favored PWCC to purchase the PHP mill on January 4, 2012,¹³ and the sale was finalized on September 28, 2012.¹⁴ PHP reopened on October 4, 2012, and shipped a very small quantity, approximately 18,000 MT of SC paper, in its first month of operation.¹⁵ PHP testified before the U.S. International Trade Commission (“USITC”) that, in the first months of renewed operation, it had to qualify product, which may account for much of the quantities shipped.¹⁶

¹⁰ C-054, USITC Final Publication, Commission Opinion at 13 and Staff Report at IV-5

¹¹ Resolute Statement of Claim at ¶¶ 25 & 28.

¹² C-022, “NewPage Port Hawkesbury Closes its Doors.” CBC News. (September 16, 2011).

¹³ Resolute Statement of the Claim at ¶¶ 4-5 & 33.

¹⁴ R-067, Cumberland News Now News Article (September 28, 2012).

¹⁵ *Reel Time* reported that PHP produced 25,000 ST in October, of which it shipped 20,000 ST. 20,000 ST = 18,143.7 MT. C-038, “It’s Not Going to be Us.” *Reel Time* (December 2012).

¹⁶ C-052, *In re Supercalendered Paper from Canada*, Investigation No. 701-TA-530, Hearing Tr. at 239-40 (Oct. 22, 2015).

10. Prior to the opening of the PHP mill, Resolute decided internally to close the more expensive Paper Machine (“PM”) 10 at its Laurentide mill and reopen the shuttered Dolbeau SC plant, as later announced on August 24, 2012 and restarted on October 10, 2012.¹⁷ In my experience, it would take a couple of months to qualify paper production from the start-up of a production line.¹⁸ Resolute management had also made long-term capital improvement commitments to Laurentide’s lower cost machine, PM 11.¹⁹ Laurentide PM 10 was announced as shut down on November 6, 2012 with the shutdown occurring on November 26, 2012.²⁰ Two years after PHP’s reentry into the market and contrary to Resolute’s earlier plans, Laurentide was permanently closed on October 13, 2014.²¹

11. Resolute filed its Intent to Submit a Claim to Arbitration under Chapter Eleven of the North American Free Trade Agreement on September 30, 2015. Under NAFTA Articles 1116, 1117 and 1119, Resolute and its subsidiary Resolute FP Canada Inc, filed the Notice of Arbitration and Statement of Claim against the Government of Canada (“GOC”), for alleged breaches of Articles 1102, 1105, and 1110 on December 30, 2015.²² Resolute’s filings allege that the Nova Scotia Government’s measures violated

¹⁷ Resolute Counter-Memorial ¶¶ 43-54 & 105-110; R-011, Resolute Press Release (August 24, 2012); C-041, Resolute 2012 10-K at 5; R-104, (“ERA, October 2012”) at 4, 16, 28.

¹⁸ This expectation is consistent with PHP’s USITC Testimony. C-052, *In re Supercalendered Paper from Canada*, Investigation No. 701-TA-530, Hearing Tr. at 239-40 (Oct. 22, 2015).

¹⁹ See R-010, 2011 Resolute Annual Report at 2, where Resolute appropriated funds for installation in 2012 of a major piece of equipment that was to be moved from a shuttered operation in British Columbia.

²⁰ R-014, Resolute Press Release (Nov. 6, 2012).

²¹ C-043, “Resolute Reports Preliminary Third Quarter 2014 Results.” PR Newswire. (October 30, 2014).

²² Resolute Statement of Claim at ¶¶ 1-2 and 20.

investment protections under NAFTA and damaged Resolute and its Canadian investment, “including the complete deprivation of Resolute’s Laurentide paper mill in Shawnigan, Quebec...”²³ In response, the GOC filed a Memorial contesting jurisdiction on December 22, 2016.

12. I have been asked by Resolute to offer an opinion on if it could have reasonably known that it was injured by the reopening of the PHP mill before December 30, 2012. In addition, I have been asked to offer an opinion on the geographic definition of the SC paper market in which PHP competes.

III. Information Relied Upon

13. In performing the analysis and developing the opinions reflected in this declaration, I, or staff under my direction, reviewed various pleadings in this case, industry pricing data, detailed pricing and cost data related to Resolute’s facilities producing Supercalendered Paper (SCP) and industry publications. All documents I relied upon in forming this opinion are cited in this witness statement or are otherwise attached.

IV. Summary of Opinion

14. The management of Resolute could not have concluded that the firm’s SCP operation had been financially harmed by the reopening of the PHP mill prior to the first quarter of 2013. Several factors underlie my conclusion. First, the price and financial effects of the reopening were not evident until January 2013 or later. Second, PHP did not have a material impact on the North American SCP market until 2013. Third, there was nothing

²³ Resolute Statement of Claim at ¶ 20.

in the financial results of Resolute's SCP operations during the fourth quarter of 2012 to suggest that Resolute had been materially harmed by the reopening, especially when viewed in the context of declining consumption of SCP during 2012. Fourth, even if Resolute's management had suspected adverse effects might arise from the reopening, it would not have known the extent of any effects, or their materiality, prior to the first quarter of 2013.

15. I also find that PHP competes in a market for supercalendered paper that is at least as large as North America and that sales by PHP would affect all North American producers. Economic analysis, statements made by the USITC, PHP, and third-party sources confirm that PHP operates in the North American market.

V. Methodology

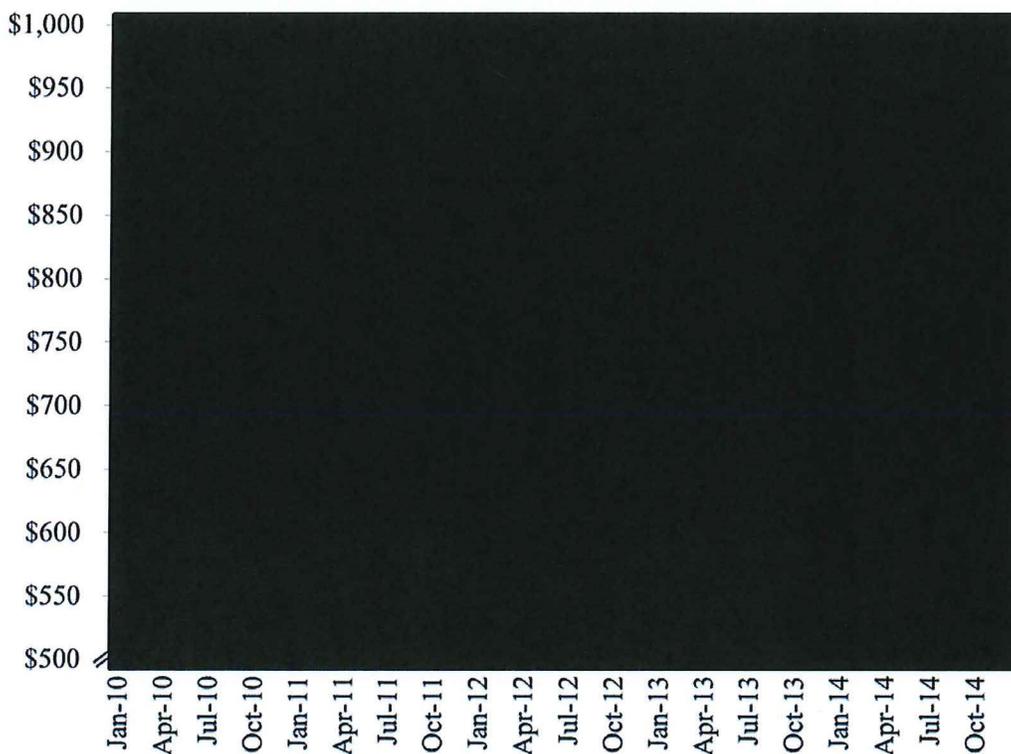
16. In order to assess the effect of PHP's reopening on Resolute, I analyzed whether PHP's reopening in October 2012 had any effects on Resolute's prices, quantities sold, or profits. I analyzed Resolute's internal mill data for price and quantity effects, which were supported with third-party statements and statements from PHP. In addition, I conducted an econometric analysis and found that price effects from PHP's reopening were not apparent until 2013. Lastly, I researched industry publications such as *Reel Time* and *RISI*, statements from officials at PHP, and Resolute's quarterly earnings reports that support the claim that Resolute could not have known the material and adverse effect of PHP's reopening in Q4 2012.

VI. Analysis

A. Price effects were not evident until January 2013

17. Pricing data from Resolute and industry publications show that prices were stable during Q4 2012, indicating that the effects of PHP's opening were not known in 2012. As seen in the graph below using RISI data, which is a standard source of price data for the industry, PHP's reopening at the beginning of Q4 2012 had no effect on prices.

Figure 1: RISI 35 lb SCA Price in \$USD/MT, Jan 2010-Dec 2014



Source: Attachment 2 (RISI Data)

18. The RISI data are similar to Resolute's internal mill data, showing stable prices through Q4 2012, with a slight drop off in Q1 2013.

Table 1: Resolute Net Sales Prices in USDS/MT, Jan 2012-March 2013

Jan-12	
Feb-12	
Mar-12	
Apr-12	
May-12	
Jun-12	
Jul-12	
Aug-12	
Sep-12	
Oct-12	
Nov-12	
Dec-12	
Jan-13	
Feb-13	
Mar-13	

Source: Attachment 4

19. I also performed an econometric analysis to determine whether an effect of PHP's reopening exists in observed prices. I used the RISI price series, which is widely used in the industry. The RISI monthly data go from January 2010, after the end of the Great Recession, through the end of 2014, for a total of 60 observations with prices in USD per MT.²⁴ I included the lagged price as well as monthly indicator variables. First, I investigated whether there was an effect from PHP in 2013. The results are:

²⁴ RISI data are presented in U.S. dollars per short ton, but to maintain consistency with Resolute's data which are presented in short tons, I converted to U.S. dollars per metric tons. *See Data Sources* at the end of this witness statement.

Table 2: Estimated Effect of PHP in 2013

Dependent Variable: US\$

Method: Least Squares

Sample: 2010M01 2014M12

Included observations: 60

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	61.29541	32.91152	1.862430	0.0689
US\$(-1)	0.926822	0.038189	24.26962	0.0000
PH2013	-6.564108	3.267428	-2.008953	0.0504
MONTH=2	0.331662	10.90306	0.030419	0.9759
MONTH=3	3.321865	9.369302	0.354548	0.7245
MONTH=4	7.760874	9.581573	0.809979	0.4221
MONTH=5	5.536501	8.875726	0.623780	0.5359
MONTH=6	7.736501	8.711908	0.888037	0.3791
MONTH=7	21.09749	12.75908	1.653528	0.1050
MONTH=8	8.024432	9.113918	0.880459	0.3832
MONTH=9	6.912245	9.045337	0.764178	0.4487
MONTH=10	12.31225	9.203509	1.337777	0.1875
MONTH=11	7.307406	9.082374	0.804570	0.4252
MONTH=12	0.507406	10.40296	0.048775	0.9613
R-squared	0.936554	Mean dependent var		887.9000
Adjusted R-squared	0.918624	S.D. dependent var		36.99551
S.E. of regression	10.55352	Akaike info criterion		7.751760
Sum squared resid	5123.334	Schwarz criterion		8.240440
Log likelihood	-218.5528	Hannan-Quinn criter.		7.942910
F-statistic	52.23298	Durbin-Watson stat		2.029671
Prob(F-statistic)	0.000000			

20. As the results in Table 2 demonstrate, the effect of PHP in 2013 is statistically significant, with a short run effect of -\$6.56 per month (t-statistic = -2.01, p-value = 0.050) and a long run effect of -\$89.86.
21. I then analyzed whether the re-opening of PHP had an effect in Q4 of 2012 due to its reopening in October 2012. The results are in Table 3 below.

Table 3: Effect of PHP in Q4 2012

Dependent Variable: US\$

Method: Least Squares

Sample: 2010M01 2014M12

Included observations: 60

HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.83252	33.13024	1.836163	0.0729
US\$(-1)	0.927374	0.038607	24.02108	0.0000
PHOPEN	-0.899142	3.430613	-0.262094	0.7944
PH2013	-6.632588	3.382679	-1.960750	0.0561
MONTH=2	0.335190	11.02243	0.030410	0.9759
MONTH=3	3.328482	9.464928	0.351665	0.7267
MONTH=4	7.768704	9.672836	0.803146	0.4261
MONTH=5	5.543007	8.961426	0.618541	0.5393
MONTH=6	7.743007	8.796259	0.880261	0.3834
MONTH=7	21.10279	12.89095	1.637024	0.1086
MONTH=8	8.021234	9.210354	0.870893	0.3884
MONTH=9	6.908385	9.143153	0.755580	0.4538
MONTH=10	12.48821	9.250217	1.350045	0.1838
MONTH=11	7.480397	9.043236	0.827181	0.4125
MONTH=12	0.680397	10.55213	0.064480	0.9489
R-squared	0.936577	Mean dependent var	887.9000	
Adjusted R-squared	0.916845	S.D. dependent var	36.99551	
S.E. of regression	10.66823	Akaike info criterion	7.784735	
Sum squared resid	5121.498	Schwarz criterion	8.308321	
Log likelihood	-218.5420	Hannan-Quinn criter.	7.989538	
F-statistic	47.46583	Durbin-Watson stat	2.042433	
Prob(F-statistic)	0.000000			

22. I find in Table 3 that the PHP effect in 2013 remains, but essentially no effect is observed in Q4 2012. The coefficient estimate is $-\$0.89$, which is very small, and the estimate is not statistically significant (t-statistic = -0.26 , p-value = 0.794). Thus, the hypothesis that there was no effect on the SC price from the re-opening of PHP in 2012 would not be rejected.²⁵ These econometric findings are consistent with the graphs, presented above, that indicate no significant decrease in price at the end of 2012.

²⁵ Statistical methodology leads to the use of a double negative here. One can translate it to the understanding that the statistical test finds “there was no effect on the SC price from the re-opening of PHP in 2012”.

23. In addition to the pricing data and econometric analysis, third-party sources and PHP officials and PHP counsel stated that PHP did not fully enter the market in 2012, and thus had little influence on the SC market after its reopening, as I discuss below. Almost two months after the reopening, a December 4, 2012 article in *Reel Time* noted, “All SCA producers are ready to respond to more aggressive price offerings – if forced to – in order to maintain their current business. However, such responses have not been necessary.”²⁶ *Reel Time* also remarked that Q4 2012 demand was so strong that “several suppliers were required to ask for relief from some of their commitments.”²⁷
24. As stated by PHP and its counsel at the United States International Trade Commission, PHP did not fully enter the market until 2013: “PHP didn’t really get into the market until 2013. As such, it’s impossible for PHP to cause any injury in 2012.”²⁸ PHP submitted data under a protective order and could not have made such a statement if it had significant market activities in 2012. PHP tentatively entered the market in late 2012 and there was uncertainty regarding whether PHP would more fully reenter in 2013 (and at what point in 2013). Therefore, it would have been impossible for Resolute to contemporaneously determine whether PHP was negatively affecting the market or Resolute during 2012.

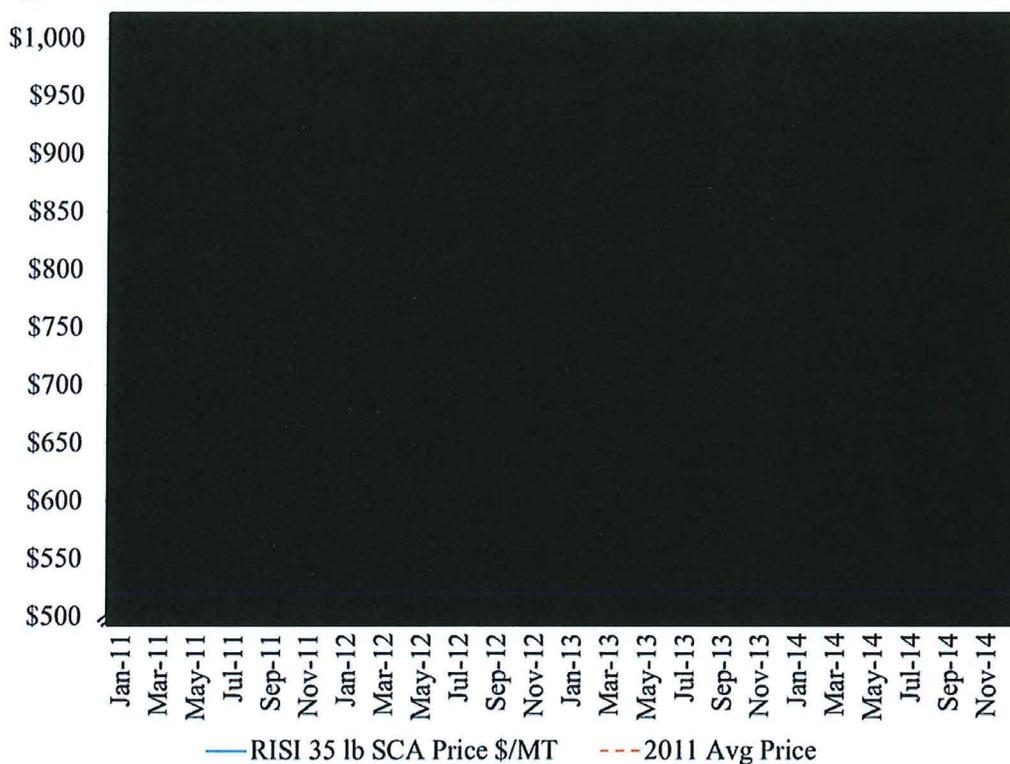
²⁶ C-038, “It’s Not Going to Be Us!” *Reel Time*. (December 4, 2012) at 3.

²⁷ C-038, “It’s Not Going to Be Us!” *Reel Time*. (December 4, 2012) at 6.

²⁸ R-083, USITC Preliminary Transcript at 14, Opening Remarks by Thomas J. Trendl, counsel for PHP. *See also* R-083, USITC Preliminary Transcript at 104: Ostrowski: “I just wanted to mention that, as a side note, when the mill reopened in October ’12, we thought about minimizing disruption to the U.S. market, so we exported a significant portion of our early production to international markets and we actively pursued business in the grade just below this trying to get them to upgrade a little bit so we wouldn’t disturb the traditional SC market.”

25. SCA prices were stable in Q4 2012, and as evidenced in RISI’s pricing data and Resolute’s data, prices fell in 2013 and remained depressed throughout the year. As seen in the graph below, starting in January 2013, prices remained below the average 2011 price and 2012 prices and continued to decline.

Figure 2: RISI Prices and 2011 Average Price in \$/MT, Jan 2011-Dec 2014,



Note: Due to unavailability of quantities sold, the 2011 Average Price is not weighted by quantity.
 Source: Attachment 2

B. Quantity effects were not evident during Q4 2012

26. As one would expect with PHP’s limited involvement in 2012, Resolute’s quantities sold were not negatively affected until 2013. The figure below shows the quantities sold from the three mills from January 2012 to March 2013; as shown below, October and

November quantities were not affected by the opening, and the drop off in quantity in December is due to the seasonality of the SCP industry.²⁹

Figure 3: Resolute's Quantities Sold in MTs from Dolbeau, Kénogami and Laurentide, Jan 2012-Mar 2013



Source: Attachment 4

27. The negative quantity effects of PHP’s opening took place in 2013 and are more apparent when viewed on a quarterly basis, shown in the graph below. Q1 2013 volumes were similar to Q1 2012 volumes. Based on volumes, Resolute would not have been able to determine the negative effects of PHP’s reopening until at least Q2 2013.

²⁹ December quantities are typically lower due to lead times, with quantities sold peaking in October or November. According to the USITC, lead times for SCP range from 28 to 45 days for U.S. Importers, and 35 to 45 days for U.S. Producers. C-054, USITC Final Publication, Staff Report at II-14.

Figure 4: Resolute's Quarterly Quantities Sold from Laurentide, Kénogami, and Dolbeau in MTs, Q1 2012-Q4 2013



Source: Attachment 4

C. Financial effects were not evident during Q4 2012

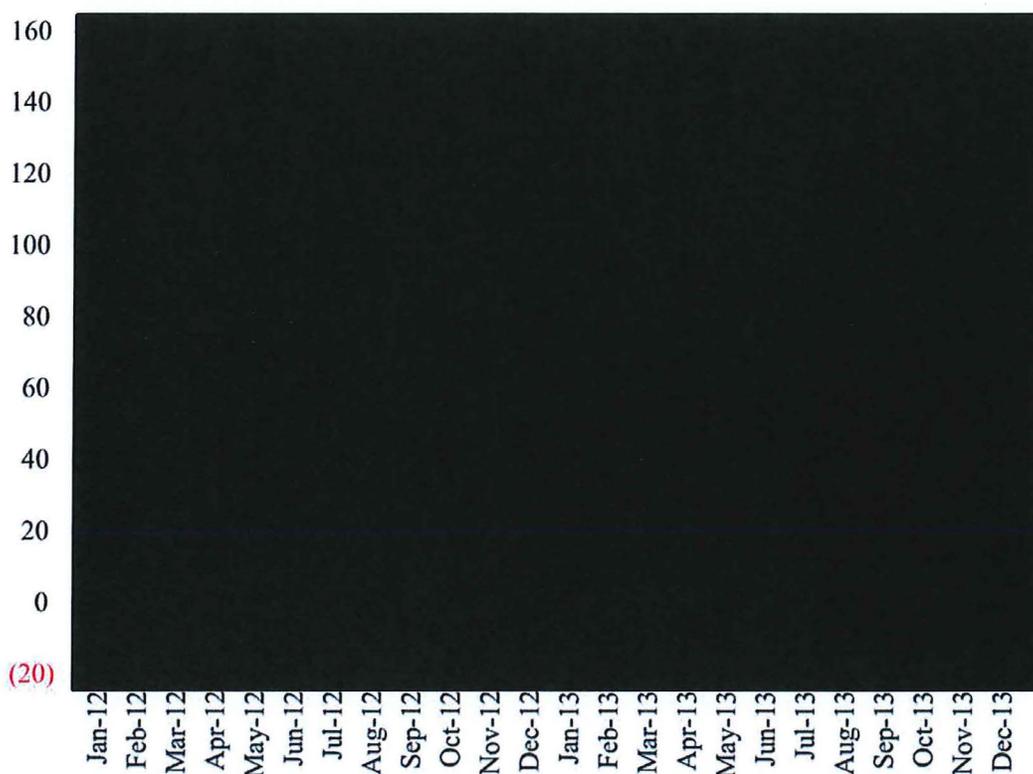
28. According to a review of Resolute's mill data and Resolute's public statements in its quarterly earnings reports and calls, operations during the fourth quarter of 2012 were not negatively affected by PHP's re-opening. As discussed above, a strong October and November followed by a weaker December is typical. Based on the changes to the EBITDA margin, a firm conclusion on injury was not possible until the first quarter of 2013 or later. The contribution margin³⁰ for Resolute's three mills was negative in December 2012, but the company would not have known this until January 2013.³¹

³⁰ The contribution margin is the transaction price minus all associated variable costs; it is the incremental profit for each unit sold. Data provided by Resolute.

³¹ Laurentide had a negative effect on margin in December 2012, but the causes were the costs associated with the November closure of PM 10. Dolbeau's start-up costs and costs associated with a fire prior to startup have been

Further, the contribution margin was quite high in November 2012, which would make any inference based on only December 2012 very uncertain. Moreover, the margin recovered in January and February 2013, and followed the seasonal pattern of higher contribution margins from September to November and a lower margin in December.

Figure 5: Resolute Contribution Margin per MT Sold, January 2012-December 2014



Note: Dolbeau's start-up costs and costs associated with its fire prior to its opening have been removed from 2012 data. August 2013 data have been adjusted to remove an insurance payout of \$3 million USD to the Dolbeau mill related to the fire.

Source: Attachment 3

29. In conjunction with the stable financial performance, Resolute's management made no official statements regarding harm from the reopening until after December 2012. The only mention of PHP in Resolute's Q4 2012 investor presentation is the smaller

removed from the 2012 costs. Dolbeau received a \$3 million USD insurance payout for the fire. See Resolute's 2013 10-K at 41, available at http://www.resolutefp.com/uploadedFiles/Investors/Financial_Reports/2013_10-K_Resolute-RFP.pdf.

shipment-to-capacity ratio of the entire SC paper industry, (not something specific to Resolute).³²

30. Even if Resolute's management had been aware of potential price and financial effects by reason of the PHP opening, it would have had to wait until actual financial reports on the fourth quarter were completed.³³
31. Moreover, subsequent financial performance was uneven, so the company could not have ruled out a recovery indicating that ordinary market fluctuations, rather than PHP, was the cause of any changes in financial performance. As seen in Resolute's contribution margin in Figure 5 above, 2013 results were positive but mixed.

D. North American market

32. A question has arisen about whether Nova Scotia's measures should be considered within a geographic area limited to Nova Scotia or should be considered within a North American (or global) market for SCP. Canada appears to argue that since PHP is the only SCP plant in Nova Scotia, other SCP producers could not be harmed because they are not located in Nova Scotia. To an economist, this argument is very far-fetched. It ignores economic reality.
33. In economics and competition (antitrust) law a standard approach to market definition is now widely accepted in Canada, the US, the EU, and most other jurisdictions. Economists and antitrust authorities consider two products to be in the same product or geographic market if they are viewed as sufficiently close substitutes by customers or

³² C-040, Resolute Forest Products Q4 2012 Results at 7 (February 12, 2013).

³³ Per C-041, Resolute's 10-K report for Q4 2012 was released to the SEC March 1, 2013. Resolute released its Preliminary Q4 2012 and Year End 2012 Results on February 12, 2013. See C-040.

competitors so as to render a small, but significant, non-transitory increase in price unprofitable. Economists typically refer to this approach as the SSNIP test.

34. A common method of defining a relevant product market is to use the “hypothetical monopolist test” described in the Horizontal Merger Guidelines issued by the US Department of Justice and the Federal Trade Commission; the Canadian Competition Bureau; and the European Commission (“EC”) guidance on market definition. The Canada “Merger Enforcement Guidelines” (2011) states:

Conceptually, a relevant market is defined as the smallest group of products, including at least one product of the merging parties, and the smallest geographic area, in which a sole profit-maximizing seller (a “hypothetical monopolist”) would impose and sustain a small but significant and non-transitory increase in price (“SSNIP”) above levels that would likely exist in the absence of the merger. In most cases, the Bureau considers a five percent price increase to be significant and a one-year period to be non-transitory. Market characteristics may support using a different price increase or time period.

The market definition analysis begins by postulating a candidate market for each product of the merging parties. For each candidate market, the analysis proceeds by determining whether a hypothetical monopolist controlling the group of products in that candidate market would profitably impose a SSNIP, assuming the terms of sale of all other products remained constant. If the price increase would likely cause buyers to switch their purchases to other products in sufficient quantity to render the price increase unprofitable, the postulated candidate market is not the relevant market, and the next-best substitute is added to the candidate market. The analysis then repeats by determining whether a hypothetical monopolist controlling the set of products in the expanded candidate market would profitably impose a SSNIP. This process continues until the point at which the hypothetical monopolist would impose and sustain the price increase for at least one product of the merging parties in the candidate market. In general, the smallest set of products in which the price increase can be sustained is defined as the relevant product market.

The same general approach applies to assessing the geographic scope of the market. In this case, an initial candidate market is proposed for each location where a merging party produces or sells the relevant products. As above, if buyers are likely to switch their purchases to sellers in more distant locations in sufficient quantities to render a SSNIP by a hypothetical monopolist unprofitable, the location that is the next-best substitute is added to the candidate market. This

process continues until the smallest set of areas over which a hypothetical monopolist would impose and sustain the price increase is identified.

35. In the situation considered here, the question is whether a hypothetical monopolist producer of SCP located in Nova Scotia could charge 5-10% above the competitive price profitably. Or, would sufficient customers switch to SCP supplied from other areas of North America (or internationally) to make an attempted price increase unprofitable? The answer is that a Nova Scotia market for SCP does not make economic sense; rather, either a North American or international market exists.
36. SCP paper from PHP in Nova Scotia, Resolute mills in Québec, and other mills located in other provinces of Canada and in the United States all compete at current market prices. Thus, if a hypothetical monopolist producer located in Nova Scotia attempted to increase prices 5-10% above the competitive level, a significant proportion of buyers would switch the purchases to other mills in the North American market. Since SCP is close to a commodity product, where price is the most important factor in buyers' purchasing decisions, buyers would be quick to shift their purchases. Non-Nova Scotia SCP producers could have met this demand given the typical excess capacity in the industry due to declining North American demand for SCP which had occurred for a number of years since the Great Recession of 2008-2009. Canada's submission to the Tribunal considers price on a North American basis.³⁴

³⁴ R-104 ("ERA, October 2012") at 28 and R-105 ("ERA, November 2012") at 25. Despite comments that prices could increase and PHP would have an effect on the market, the November 2012 report estimated that Q4 2012 prices would be stable, see Page 2 of R-105. Moreover, pricing data from RISI and statements made by *Reel Time* confirm that prices were stable in Q4 2012, and that PHP had little effect on the market. C-038, "It's Not Going to Be Us!" *Reel Time*. (December 4, 2012) at 3 and 6.

37. The USITC determined that “the reopening of the PHP mill effectively added supply to the U.S. market,” showing that the effects of the mill’s reopening extend beyond the Nova Scotian borders.³⁵ The USITC Staff recognized that Canadian producers, including PHP, are export oriented, with the United States as their main export source. The USITC Staff Report provided a rough approximation of global exports of SCP and found that Canada was the leading exporter from 2012 to 2014. Moreover, the Staff reported that “producers of SC paper in Canada have historically been highly export-oriented and have focused on the U.S. market for sales...”³⁶
38. Thus, the Government of Nova Scotia’s measures on behalf of PHP have economic effects beyond Nova Scotia. The economic effects are, at a minimum, North American in scope. These North American effects would have been well understood by anyone familiar with competition among SCP producers. Thus, Nova Scotia’s decision to keep PHP operational had the expected effect of causing its “provincial champion” to compete against Resolute and other North American SCP producers. The previous PHP owners had closed the mill because they could not compete profitably against other North American producers. Nova Scotia, through its government policy, changed the equation. Now Resolute and other North American producers have had to compete against PHP and the Nova Scotia Government. The resources of the Nova Scotia Government distorted competition and had the expected consequences of harming Resolute.
39. The fact that PHP was intended to be the low cost North American producer is further evidence that those involved with the restart of PHP understood they were competing in a

³⁵ C-054, USITC Final, Commission Opinion at 15.

³⁶ C-054, USITC Final, Staff Report at VII-7.

North American market and understood PHP's costs in the context of other North American producers. Statements made by PHP officials at the time confirm that PHP competes against all other producers in the North American market. As discussed above, PHP received financial aid and incentives through the NSG; these costs savings were designed to make PHP competitive with other mills in the North American market.³⁷ According to an independent third-party, in August 2012 PWCC wanted to make PHP "the lowest-cost operator in North America."³⁸ PWCC CEO Rob Stern repeated these sentiments weeks prior to the reopening of the mill.³⁹ Moreover, the NSG qualified the \$40 million CAD loan for working capital to "help the mill become the lowest cost and most competitive producer of super calender paper."⁴⁰ PHP's questionnaire responses show that the United States is its main market. In 2013, the United States accounted for 98 percent of PHP's total sales.⁴¹ In an international market where price is the main

³⁷ In its USITC Post-hearing Brief, PHP stated: "(New Page) went to considerable trouble to develop marketing materials indicating how new owners could operate the Mill as a profitable venture competing in the North American SC paper market" C-053, Supercalendered Paper from Canada, Inv. No. 701-TA-530 (Final): Post-Hearing Brief of Port Hawkesbury Paper LP. (October 30, 2015) at Appendix L.

³⁸ C-008, Nancy King. "UARB Approves Paper Mill Power Deal." Cape Breton Post. (August 20, 2012).

³⁹ Stern was quoted as saying: "'We're hoping that there is going to be a bottom in the declining use of paper and that we will be, hopefully, the most competitive mill. We will certainly be the highest quality. Our goal is to be the lowest cost mill.'" C-016, Cassie Williams. "Nova Scotia Paper Mill Revived in 11th-Hour Twist." CBC News. (September 22, 2012).

⁴⁰ R-055. "Province Invests in Jobs, Training and Renewing the Forestry Sector." Nova Scotia Canada Premier's Office. (August 20, 2012).

⁴¹ As Port Hawkesbury itself explained, {m}ost of {its} sales are exported, the majority to the United States." In 2013, approximately 325,000 tons out of 330,000 tons of total sales (not just exported sales) were exported to the United States. In 2014, 300,000 tons out of 375,000 tons of total sales were exported to the United States, with an additional 50,000 tons sold in Canada. C-046, PHP's CVD Response Narrative before the Commerce Department (May 27, 2015) at 12-14.

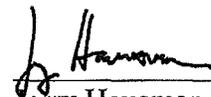
determinant of the sale, any cost-saving measure, especially one subsidized by a government entity, would have effects in the entire market. As determined by the USITC and confirmed by PHP officials and the NSG, the reopening of PHP had effects that affected the North American market.

VII. Conclusion

40. Based on the evidence presented above, I find that Resolute could not have contemporaneously known the damaging effects of PHP's reopening in 2012, due to the limited price, quantity, and profit effects apparent in Q4 2012. I also find that PHP competes in a market for supercalendered paper that is at least as large as North America and that sales by PHP would affect all North American producers.

I hereby affirm the truth of this statement.

Respectfully submitted:

 February 22, 2017
Jerry Hausman
Cambridge, MA
United States

Data Sources

RISI

My witness statement relies upon U.S. SCA 35 lb prices from RISI, a global forest data company that provides prices, forecasting, and benchmarking by a team of economists, analysts, and editors. RISI's pricing assessment relies upon transaction prices, with pricing available for North America, Africa, Asia Pacific, Europe, and Latin America. RISI pricing is not publicly available, but most, if not all, paper companies maintain a subscription to RISI. The SCA 35lb prices I rely upon come from RISI's Paper Trader publication, which RISI describes as a "monthly monitor of the North American Graphic Paper Market." Specifically, the monthly data come from Table 6, "Delivered Printing And Writing Paper Prices For Most Common Transactions." RISI presents the data in dollars per short ton, however, Resolute provides its data in metric tons, to maintain consistency I converted RISI data to dollars per metric ton. The RISI data are located in Attachment 2.

Resolute Internal Data

Resolute provided its confidential internal prices, quantities sold, and cost data for its Kénogami, Dolbeau, and Laurentide mills. These data are from January 2012 to December 2013. Resolute prepared three spreadsheets of data, one for each mill. Each spreadsheet had the monthly data for net sales values, sales tonnage, net mill sales values, and the cash cost of sales. The monthly quantities were presented in metric tons, and values were in Canadian dollars. Using a monthly foreign exchange rate,⁴² I converted the values to U.S. dollars, and calculated net sales price per MT, net mill price per MT, cost of goods sold per MT, and a contribution margin per MT. The Resolute data are located in Attachments 3 and 4.

⁴² Monthly CAD to USD rate from www.x-rates.com

ATTACHMENT 1

Jerry Hausman, PhD.

February 2017

EDUCATION:

OXFORD UNIVERSITY

D. Phil. 1973 (Ph.D)

B. Phil. 1972

BROWN UNIVERSITY

A.B. (Summa Cum Laude), 1968

THESIS: "A Theoretical and Empirical Study of Vintage Investment and Production in Great Britain,"
Oxford University, 1973.

FELLOWSHIPS, HONORS AND AWARDS:

Phi Beta Kappa

Marshall Scholar at Oxford, 1970-1972

Scholarship at Nuffield College, Oxford, 1971-1972

Fellow, Econometric Society, 1979

Frisch Medal of the Econometric Society, 1980

Fisher-Schultz Lecture for the Econometric Society, 1982

John Bates Clark Award of the American Economic Association, 1985

Smith Lectures, Brigham Young University 1986

Jacob Marschak Lecture for the Econometric Society, 1988

Hooker Lectures, Macmaster University 1989

Fellow, National Academy of Social Insurance, 1990

American Academy of Arts and Sciences, 1991

Fellow, Journal of Econometrics, 1998

Shann Memorial Lecture for the Australian Economics Society, 2003

Cenmap International Fellow, University College London, 2004

Honorary Professor, Xiamen University, 2005

Biennial Medal of the Modeling and Simulation Society of Australia and New Zealand, 2005

Fellow, Modeling and Simulation Society of Australia and New Zealand, 2005

Condliffe Memorial Lecture, University of Canterbury, NZ, 2005

Keynote Lecture, Far East Meetings of Econometric Society, Beijing 2006

Keynote Speaker, ACCC Conference, Australia, 2006

Keynote Speaker, Panel Data Conference, Xiamen China, 2007

Keynote Speaker, FTC/Northwestern Antitrust Conference, 2008

Honorary Fellow, Nuffield College, Oxford University, 2008

Journal of Applied Econometrics Lectures, 2009

Leigh Lecture, Washington State University, 2009

MIT UEA Teaching Award, 2009

Journal of Financial Economics "All Star Paper", 2009

Honorary Advisory Board, Chang Mai University, Thailand, 2009-

Honorary Degree, Chang Mai University, Thailand 2010

Keynote Speaker, UC Berkeley Conference on Mobile Telecommunications, 2010

Keynote Speaker, Xiamen University (China) conference on 30 Years of Specification Tests, 2010

Tinbergen Lectures, Tinbergen Institute, Netherlands, 2011

Keynote Speaker, Econometrics Conference, Cambridge Univ., UK, 2011

HOH Lectures, Humboldt Univ. Berlin, 2011

Gorman Lectures, University College London, 2011

Conference on the Hausman Specification Test, Louisiana State Univ., 2012

Keynote Speaker, 18th Panel Data Conference, Paris, 2012

American Economic Association Distinguished Fellow 2013

Keynote Speaker, Cambridge University Conference on Panel Data, 2013

Conference in Honor of Jerry Hausman, Curtin University, Fremantle, Australia, 2013

Keynote Speaker, Africa-Asia-Australia Telecommunications Conference, Perth, Australia, 2013
 Keynote Speaker, Conference on TOU Prices, Nanching China, 2013
 Conference in Honor of Jerry Hausman, Xiamen University China, 2014
 Keynote Speaker, Conference in Honor of Jerry Hausman, Xiamen University China, 2014
 Keynote Speaker, 22nd Panel Data conference, Fremantle, Australia, 2016
 Bateman Lecture, University of Western Australia, 2016
 Keynote Lecture, Universidad Nacional de Colombia, Bogota, 2016
 Distinguished Speaker Series, UCLA, 2017

EMPLOYMENT:

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
 2016- John and Jennie S. MacDonald Professor, Post-tenure
 1992-2016 John and Jennie S. MacDonald Professor
 1979- Professor, Department of Economics
 1976-79 Associate Professor, Department of Economics
 1973-76 Assistant Professor, Department of Economics
 1972-73 Visiting Scholar, Department of Economics

VISITING APPOINTMENTS:

2016 Distinguished Visiting Professor of Economics, UCLA
 1986-87 Visiting Professor, Harvard Business School
 1982-83 Visiting Professor, Harvard University Department of Economics
 Visiting Positions: University of Washington, Australian National University, Ecole Normale Supérieure, Oxford University, University of Sydney, Wuhan University, Beijing University, University of Western Australia, University College London, Uppsala University, Xiamen University, Sorbonne

1968-70 **U.S. ARMY, ANCHORAGE, ALASKA**
Corps of Engineers

PROFESSIONAL ACTIVITIES:

Associate Editor, Bell Journal of Economics, 1974-1983
 Associate Editor, Rand Journal of Economics, 1984-1988
 Associate Editor, Econometrica, 1978-1987
 Reviewer, Mathematical Reviews, 1978-1980
 American Editor, Review of Economic Studies, 1979-82
 Associate Editor, Journal of Public Economics, 1982-1998
 Associate Editor, Journal of Applied Econometrics, 1985-1993, 2009-
 Advisory Editor, Economics Research Network and Social Science Research , 1998-
 Advisory Editor, Journal of Sports Economics, 1999-
 Advisory Editor, Journal of Competition Law & Economics, 2004-
 Advisory Editor, Journal of Applied Economics, 2005-
 Member of MIT Center for Energy and Environmental Policy Research, 1973-1995
 Research Associate, National Bureau of Economic Research, 1979-
 Member, American Statistical Association Committee on Energy Statistics, 1981-1984
 Special Witness (Master) for the Honorable John R. Bartels, U.S. District Court for the Eastern District of New York in Carter vs. Newsday, Inc., 1981-82
 Member of Governor's Advisory Council (Massachusetts) for Revenue and Taxation, 1984-1992
 Member, Committee on National Statistics, 1985-1990
 Member, National Academy of Social Insurance, 1990-
 Member, Committee to Revise U.S. Trade Statistics 1990-1992
 Director, MIT Telecommunications Economics Research Program, 1988-
 Board of Directors, Theseus Institute, France, 1988-1995

Member, Conference on Income and Wealth, National Bureau of Economic Research, 1992-
 Member, Committee on the Future of Boston, 1998
 Member, GAO Expert Panel to Advise USDA on Econometric Models of Cattle Prices, 2001-2
 Advisor, China Ministry of Information on Telecommunications Regulation, 2002-2006
 Member, FTC Panel on Merger Evaluation, 2005
 Advisor, New Zealand Commerce Commission 2010

PUBLICATIONS:

I. Econometrics

- "Minimum Mean Square Estimators and Robust Regression," *Oxford Bulletin of Statistics*, April 1974.
- "Minimum Distance and Maximum Likelihood Estimation of Structural Models in Econometrics," delivered at the *European Econometric Congress, Grenoble: August 1974*.
- "Full-Information Instrumental Variable Estimation of Simultaneous Equation Models," *Annals of Economic and Social Measurement*, vol. 3, 641-652, October 1974.
- "Estimation and Inference in Nonlinear Structural Models," *Annals of Economic and Social Measurement*, 653-665, October 1975. (with E. Berndt, R.E. Hall, and B.H. Hall)
- "An Instrumental Variable Approach to Full-Information Estimators in Linear and Certain Nonlinear Econometric Models," *Econometrica*, Vol. 43(4), 727-738, 1975.
- "Simultaneous Equations with Errors in Variables," *Journal of Econometrics* 5, 1977.
- "Social Experimentation, Truncated Distributions, and Efficient Estimation," *Econometrica*, Vol. 45(4), 919-938, 1977. (with D. Wise)
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- "Missing Data and Self Selection in Large Panels," *Annales de l'INSEE*, April 1978. (with Z. Griliches and B.H. Hall)
- "Stratification on Endogenous Variables and Estimation," in *The Analysis of Discrete Economic Data*, ed. C. Manski and D. McFadden, MIT Press, 1981. (with D. Wise)
- "Les modèles probit de choix qualitatifs," ("Alternative Conditional Probit Specifications for qualitative Choice.") (English Version), September 1977; EPRI report on discrete choice models, *Cahiers du Séminar d'Econometrie*, 1980.
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- "Panel Data and Unobservable Individual Effects," *Econometrica*, vol. 49(6), 1377-1398, 1981. (with W. Taylor)
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- "Econometric Models for Count Data with an Application to the Patents R&D Relationship," *Econometrica*, vol. 52(4), 909-938. 1984.(with Z. Griliches and B. Hall)
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- “Combining Two Consistent Estimators”, with J. Chao, W. Newey N. Swanson, and T. Woutersen, Advances in Econometrics, 29, “Essays in Honor of Jerry Hausman”, 2013
- “The Genesis of the Hausman Specification Test”, Advances in Econometrics, 29, “Essays in Honor of Jerry Hausman”, 2013
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- “Errors in the Dependent Variable of Quantile Regression Models”, with Y. Leo and C. Palmer, April 2014
- “Finite Sample Bias Corrected IV Estimation for Weak and Many Instruments”, (with M. Harding and C. Palmer) Advances in Econometrics, 36, 2016, 245-273
- “Nonparametric Welfare Analysis,” (with W. Newey) August 2015, forthcoming in Annual Review of Economics
- “A New Sampling Algorithm for the Mixed Model of Multinomial Discrete Choice”,(with M. Harding and Y. Xue), April 2016.

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II. Public Finance and Regulation

"The Evaluation of Results from Truncated Samples," with D. Wise, *Annals of Economic and Social Measurement*, vol. 5, 421-446, April 1976.

"Discontinuous Budget Constraints and Estimation: The Demand for Housing," with D. Wise, *Review of Economic Studies*, vol. 7(146), 75-96. January 1980.

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ATTACHMENT 2

SCA 35 lb SCA
source: RISI

	US \$	
	US\$/st	US\$/mt
Jan-10		
Feb-10		
Mar-10		
Apr-10		
May-10		
Jun-10		
Jul-10		
Aug-10		
Sep-10		
Oct-10		
Nov-10		
Dec-10		
Jan-11		
Feb-11		
Mar-11		
Apr-11		
May-11		
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Dec-13		
Jan-14		
Feb-14		
Mar-14		
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Aug-14		
Sep-14		
Oct-14		
Nov-14		
Dec-14		

ATTACHMENT 3

Resolute's Marginal Contribution Calculation for Laurentide, Kenogami, and Dolbeau.

	Adjusted Net Mill Price USD/MT	Adjusted Cost of Goods Sold USD	Adjusted Quantities Sold MTs	Marginal Contribution \$/MT
Jan-12				
Feb-12				
Mar-12				
Apr-12				
May-12				
Jun-12				
Jul-12				
Aug-12				
Sep-12				
Oct-12				
Nov-12				
Dec-12				
Jan-13				
Feb-13				
Mar-13				
Apr-13				
May-13				
Jun-13				
Jul-13				
Aug-13				
Sep-13				
Oct-13				
Nov-13				
Dec-13				

Note: Data adjusted by removing all of Dolbeau data (COGs, Quantities, and Values) from Oct-Dec 2012 due to fire and start-up costs. August 2013 COGs adjusted by \$3 million USD due to insurance payout from fire.

Source: Internal data provided by Resolute, includes SCP data for Kenogami, Dolbeau, and Laurentide

ATTACHMENT 4

Resolute's Net Sales Price and Quantities Sold for Laurentide, Kenogami, and Dolbeau.

	Quantites Sold MTs	Net Sales Price USD/MT
Jan-12		
Feb-12		
Mar-12		
Apr-12		
May-12		
Jun-12		
Jul-12		
Aug-12		
Sep-12		
Oct-12		
Nov-12		
Dec-12		
Jan-13		
Feb-13		
Mar-13		
Apr-13		
May-13		
Jun-13		
Jul-13		
Aug-13		
Sep-13		
Oct-13		
Nov-13		
Dec-13		

Source: Internal data provided by Resolute, includes SCP data for Kenogami, Dolbeau, and Laurentide