

Anexo 02

Productos Planos \$ USD				
Precio internacional				
FLAT PRODUCTS				
Fecha	Hot Rolled Coil	Hot Rolled Plate	Cold Rolled Coil	HD Galv. Coil
Ene 11	742	841	853	946
Feb	773	828	875	1.044
Mar	770	840	868	1.077
Abr	745	836	826	1.083
May	730	824	819	1.061
Jun	728	809	822	1.031
Jul	701	787	795	991
Ago	703	758	788	964
Sep	709	783	806	977
Oct	702	857	800	967
Nov	702	857	800	899
Dic	699	846	796	893
Ene 12	708	845	804	904
Feb	746	864	839	953
Mar	734	858	828	938
Abr	738	850	830	943
May	719	849	805	919
Jun	676	805	758	864
jul	664	787	749	848
Ago	666	762	758	851
Sep	670	756	764	858
Oct	652	799	799	835
Nov	643	808	757	823
Dic	553	817	764	708
Ene 13	669	726	759	846
Feb	682	720	771	855
Mar	665	774	770	814
Abr	652	769	764	809
May	550	761	766	806
Jun	644	750	766	826
jul	639	755	767	822

Anexo 03

Comparativo precio nacional del acero vs precio					
Fecha	HR Maceros	CR Maceros	HDG Maceros	Promedio Maceros	HR Nal
Ene 11	1.750	1.930	2.611	2.097	1.750
Feb	1.950	2.200	2.500	2.217	1.950
Mar	1.960	2.200	2.590	2.250	2.000
Abr	2.000	2.300	2.600	2.300	2.000
May	1.950	2.200	2.480	2.210	2.000
Jun	1.900	2.050	2.480	2.143	1.950
Jul	1.900	1.950	2.480	2.110	1.900
Ago	1.850	1.950	2.450	2.083	1.900
Sep	1.728	1.908	2.232	1.956	1.900
Oct	1.798	2.017	2.322	2.046	1.900
Nov	1.778	1.992	2.293	2.021	2.000
Dic	1.860	2.065	2.384	2.103	1.900
Ene 12	1.660	1.916	2.191	1.922	1.900
Feb	1.661	1.877	2.145	1.894	1.800
Mar	1.621	1.767	2.020	1.803	1.907
Abr	1.627	1.904	2.180	1.904	1.825
May	1.633	1.802	2.156	1.864	1.825
Jun	1.662	1.860	2.174	1.899	1.792
Jul	1.656	1.822	2.158	1.879	1.743
Ago	1.639	1.819	2.160	1.873	1.714
Sept	1.643	1.820	2.201	1.888	1.680
Oct	1.608	1.803	1.878	1.763	1.610
Nov	1.597	1.803	2.179	1.860	1.650
Dic	1.623	1.730	2.201	1.851	1.610
Ene 13	1.623	1.730	2.201	1.851	1.610
Feb	1.497	1.664	2.000	1.720	1.550
Mar	1.507	1.645	2.048	1.733	1.500
Abr	1.520	1.682	2.050	1.751	1.500
May	1.520	1.682	2.050	1.751	1.450
Jun	1.560	1.717	2.124	1.800	1.450
Jul	1.540	1.699	2.087	1.775	1.223

Maceros		
CR Nal	HDG Nal	Promedio Nal
1.930	2.611	2.097
2.300	2.650	2.300
2.300	2.700	2.333
2.300	2.600	2.300
2.300	2.600	2.300
2.100	2.500	2.183
2.100	2.500	2.167
2.050	2.480	2.143
2.050	2.480	2.143
2.050	2.480	2.143
2.150	2.500	2.217
2.000	2.450	2.117
2.000	2.450	2.117
1.900	2.400	2.033
1.950	2.450	2.102
1.950	2.581	2.119
1.950	2.540	2.105
1.900	2.300	1.997
1.900	2.310	1.984
1.770	2.225	1.903
1.780	2.250	1.903
1.750	2.200	1.853
1.750	2.216	1.872
1.750	2.216	1.859
1.750	2.000	1.787
1.700	2.000	1.750
1.650	2.389	1.846
1.650	2.415	1.855
1.550	2.297	1.766
1.550	2.285	1.762
1.553	2.277	1.684

Anexo 04

Tendencia TRM		
Año y mes	Promedio	Fin de mes
201101	\$ 1.866,64	\$ 1.857,98
201102	\$ 1.882,61	\$ 1.895,56
201103	\$ 1.884,38	\$ 1.879,47
201104	\$ 1.812,77	\$ 1.768,19
201105	\$ 1.801,65	\$ 1.817,34
201106	\$ 1.782,54	\$ 1.780,16
201107	\$ 1.761,75	\$ 1.777,82
201108	\$ 1.785,04	\$ 1.783,66
201109	\$ 1.836,15	\$ 1.915,10
201110	\$ 1.910,38	\$ 1.863,06
201111	\$ 1.918,21	\$ 1.967,18
201112	\$ 1.934,08	\$ 1.942,70
201201	\$ 1.852,12	\$ 1.815,08
201202	\$ 1.783,56	\$ 1.767,83
201203	\$ 1.766,34	\$ 1.792,07
201204	\$ 1.775,06	\$ 1.761,20
201205	\$ 1.793,28	\$ 1.827,83
201206	\$ 1.792,63	\$ 1.784,60
201207	\$ 1.784,43	\$ 1.789,02
201208	\$ 1.806,34	\$ 1.830,50
201209	\$ 1.803,18	\$ 1.800,52
201210	\$ 1.804,97	\$ 1.829,89
201211	\$ 1.820,29	\$ 1.817,93
201212	\$ 1.793,94	\$ 1.768,23
201301	\$ 1.770,01	\$ 1.773,24
201302	\$ 1.791,48	\$ 1.816,42
201303	\$ 1.809,89	\$ 1.832,20
201304	\$ 1.829,96	\$ 1.828,79
201305	\$ 1.850,12	\$ 1.891,48
201306	\$ 1.909,50	\$ 1.929,00

Anexo 05

HISTORICOS TRM vs FUTUROS					
Históricos TRM			Curva Futuro USD/COP 3 meses		
Año y mes	Promedio	Fin de mes	Tasa 3M BID	Tasa 3M ASK	Promedio
201101	\$ 1.866,64	\$ 1.857,98	\$ 1.864,80	\$ 1.872,40	\$ 1.868,60
201102	\$ 1.882,61	\$ 1.895,56	\$ 1.883,50	\$ 1.891,00	\$ 1.887,25
201103	\$ 1.884,38	\$ 1.879,47	\$ 1.859,00	\$ 1.862,50	\$ 1.860,75
201104	\$ 1.812,77	\$ 1.768,19	\$ 1.768,00	\$ 1.770,00	\$ 1.769,00
201105	\$ 1.801,65	\$ 1.817,34	\$ 1.792,75	\$ 1.794,50	\$ 1.793,63
201106	\$ 1.782,54	\$ 1.780,16	\$ 1.772,50	\$ 1.778,00	\$ 1.775,25
201107	\$ 1.761,75	\$ 1.777,82	\$ 1.783,00	\$ 1.784,50	\$ 1.783,75
201108	\$ 1.785,04	\$ 1.783,66	\$ 1.786,50	\$ 1.788,00	\$ 1.787,25
201109	\$ 1.836,15	\$ 1.915,10	\$ 1.936,00	\$ 1.938,00	\$ 1.937,00
201110	\$ 1.910,38	\$ 1.863,06	\$ 1.865,25	\$ 1.867,25	\$ 1.866,25
201111	\$ 1.918,21	\$ 1.967,18	\$ 1.952,25	\$ 1.954,50	\$ 1.953,38
201112	\$ 1.934,08	\$ 1.942,70	\$ 1.919,00	\$ 1.924,00	\$ 1.921,50
201201	\$ 1.852,12	\$ 1.815,08	\$ 1.815,50	\$ 1.818,00	\$ 1.816,75
201202	\$ 1.783,56	\$ 1.767,83	\$ 1.784,25	\$ 1.786,25	\$ 1.785,25
201203	\$ 1.766,34	\$ 1.792,07	\$ 1.803,10	\$ 1.805,80	\$ 1.804,45
201204	\$ 1.775,06	\$ 1.761,20	\$ 1.780,50	\$ 1.782,25	\$ 1.781,38
201205	\$ 1.793,28	\$ 1.827,83	\$ 1.855,00	\$ 1.860,00	\$ 1.857,50
201206	\$ 1.792,63	\$ 1.784,60	\$ 1.810,50	\$ 1.812,00	\$ 1.811,25
201207	\$ 1.784,43	\$ 1.789,02	\$ 1.815,50	\$ 1.817,25	\$ 1.816,38
201208	\$ 1.806,34	\$ 1.830,50	\$ 1.847,62	\$ 1.851,75	\$ 1.849,69
201209	\$ 1.803,18	\$ 1.800,52	\$ 1.820,50	\$ 1.823,00	\$ 1.821,75
201210	\$ 1.804,97	\$ 1.829,89	\$ 1.849,15	\$ 1.850,00	\$ 1.849,58
201211	\$ 1.820,29	\$ 1.817,93	\$ 1.831,25	\$ 1.832,25	\$ 1.831,75
201212	\$ 1.793,94	\$ 1.768,23	\$ 1.783,50	\$ 1.784,50	\$ 1.784,00
201301	\$ 1.770,01	\$ 1.773,24	\$ 1.789,75	\$ 1.792,50	\$ 1.791,13
201302	\$ 1.791,48	\$ 1.816,42	\$ 1.826,00	\$ 1.827,50	\$ 1.826,75
201303	\$ 1.809,89	\$ 1.832,20	\$ 1.837,50	\$ 1.840,00	\$ 1.838,75
201304	\$ 1.829,96	\$ 1.828,79	\$ 1.839,50	\$ 1.841,50	\$ 1.840,50
201305	\$ 1.850,12	\$ 1.891,48	\$ 1.917,20	\$ 1.920,80	\$ 1.919,00
201306	\$ 1.909,50	\$ 1.929,00	\$ 1.939,00	\$ 1.941,50	\$ 1.940,25
201306	\$ 1.909,50	\$ 1.890,33	\$ 1.911,95	\$ 1.915,01	\$ 1.913,48
201307	\$ 1.909,50	\$ 1.890,33	\$ 1.925,48	\$ 1.928,26	\$ 1.926,87

Anexo 06

Comparativo precio compra Maceros vs precio futuro TRM 3 meses		
Fecha	Precio prom. Compra Maceros	precio prom. Futuro 3 meses
201101	2.097,00	1.868,60
201102	2.216,67	1.887,25
201103	2.250,00	1.860,75
201104	2.300,00	1.769,00
201105	2.210,00	1.793,63
201106	2.143,33	1.775,25
201107	2.110,00	1.783,75
201108	2.083,33	1.787,25
201109	1.956,00	1.937,00
201110	2.045,67	1.866,25
201111	2.021,00	1.953,38
201112	2.103,00	1.921,50
201201	1.922,33	1.816,75
201202	1.894,33	1.785,25
201203	1.802,67	1.804,45
201204	1.903,67	1.781,38
201205	1.863,67	1.857,50
201206	1.898,67	1.811,25
201207	1.878,67	1.816,38
201208	1.872,67	1.849,69
201209	1.887,83	1.821,75
201210	1.763,00	1.849,58
201211	1.859,67	1.831,75
201212	1.851,33	1.784,00
201301	1.851,33	1.791,13
201302	1.720,33	1.826,75
201303	1.733,33	1.838,75
201304	1.750,67	1.840,50
201305	1.750,67	1.919,00
201306	1.800,17	1.940,25
201307	1.775,33	1.913,48

Anexo 07

Construcción modelos de proyección precios del acero

Maceros Vs TRM

Dependent Variable: PMACEROS
 Method: Least Squares
 Date: 08/21/13 Time: 18:34
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	781.2318	1089.447	0.717091	0.4791
TRM	0.637520	0.596228	1.069256	0.2938
R-squared	0.037929	Mean dependent var		1945.688
Adjusted R-squared	0.004754	S.D. dependent var		167.1420
S.E. of regression	166.7442	Akaike info criterion		13.13314
Sum squared resid	806305.4	Schwarz criterion		13.22566
Log likelihood	-201.5637	Hannan-Quinn criter.		13.16330
F-statistic	1.143308	Durbin-Watson stat		0.186459
Prob(F-statistic)	0.293774			

Maceros Vs Precio Acero Internacional (convertido a pesos mediar

Dependent Variable: PMACEROS
 Method: Least Squares
 Date: 08/21/13 Time: 18:48
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.413349	277.0700	0.012319	0.9903
PINTERNAL_TRM	1.271880	0.181029	7.025856	0.0000
R-squared	0.629926	Mean dependent var		1945.688
Adjusted R-squared	0.617165	S.D. dependent var		167.1420
S.E. of regression	103.4169	Akaike info criterion		12.17776
Sum squared resid	310156.8	Schwarz criterion		12.27027
Log likelihood	-186.7552	Hannan-Quinn criter.		12.20791
F-statistic	49.36265	Durbin-Watson stat		0.701611
Prob(F-statistic)	0.000000			

Maceros Vs Precio de Acero Internacional (convertido a pesos me TRM)

Dependent Variable: PMACEROS
 Method: Least Squares
 Date: 08/21/13 Time: 18:47
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	36.34290	349.2908	0.104048	0.9178
PINTERNAL_FUTUROS	1.240724	0.226548	5.476644	0.0000
R-squared	0.508421	Mean dependent var		1945.688
Adjusted R-squared	0.491471	S.D. dependent var		167.1420
S.E. of regression	119.1911	Akaike info criterion		12.46167
Sum squared resid	411988.8	Schwarz criterion		12.55419
Log likelihood	-191.1559	Hannan-Quinn criter.		12.49183
F-statistic	29.99363	Durbin-Watson stat		0.926050
Prob(F-statistic)	0.000007			

Maceros Vs Precio de Acero Internacional (en U\$D)

Dependent Variable: PMACEROS

Method: Least Squares

Date: 08/21/13 Time: 18:31

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-345.7971	303.6535	-1.138788	0.2641
PINTERNAL	2.741263	0.362637	7.559258	0.0000
R-squared	0.663348	Mean dependent var		1945.688
Adjusted R-squared	0.651739	S.D. dependent var		167.1420
S.E. of regression	98.63653	Akaike info criterion		12.08310
Sum squared resid	282145.8	Schwarz criterion		12.17562
Log likelihood	-185.2881	Hannan-Quinn criter.		12.11326
F-statistic	57.14238	Durbin-Watson stat		0.846857
Prob(F-statistic)	0.000000			

Maceros Vs Precios Nacionales

Dependent Variable: PMACEROS

Method: Least Squares

Date: 08/21/13 Time: 18:30

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	246.3406	165.7000	1.486667	0.1479
PNAL	0.836925	0.081309	10.29319	0.0000
R-squared	0.785105	Mean dependent var		1945.688
Adjusted R-squared	0.777695	S.D. dependent var		167.1420
S.E. of regression	78.80616	Akaike info criterion		11.63420
Sum squared resid	180101.9	Schwarz criterion		11.72672
Log likelihood	-178.3301	Hannan-Quinn criter.		11.66436
F-statistic	105.9498	Durbin-Watson stat		1.103848
Prob(F-statistic)	0.000000			

Maceros Vs Futuros de la TRM

Dependent Variable: PMACEROS

Method: Least Squares

Date: 08/21/13 Time: 18:32

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2697.565	1044.869	2.581726	0.0152
FUTUROS	-0.408319	0.567196	-0.719892	0.4774
R-squared	0.017557	Mean dependent var		1945.688
Adjusted R-squared	-0.016321	S.D. dependent var		167.1420
S.E. of regression	168.5004	Akaike info criterion		13.15409
Sum squared resid	823379.3	Schwarz criterion		13.24661
Log likelihood	-201.8885	Hannan-Quinn criter.		13.18425
F-statistic	0.518244	Durbin-Watson stat		0.185246
Prob(F-statistic)	0.477354			

Maceros Vs TRM

Dependent Variable: PMACEROS

Method: Least Squares

Date: 08/21/13 Time: 18:34

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	781.2318	1089.447	0.717091	0.4791
TRM	0.637520	0.596228	1.069256	0.2938
R-squared	0.037929	Mean dependent var		1945.688
Adjusted R-squared	0.004754	S.D. dependent var		167.1420
S.E. of regression	166.7442	Akaike info criterion		13.13314
Sum squared resid	806305.4	Schwarz criterion		13.22566
Log likelihood	-201.5637	Hannan-Quinn criter.		13.16330
F-statistic	1.143308	Durbin-Watson stat		0.186459
Prob(F-statistic)	0.293774			

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Anexo 08

Test de Granger

Pairwise Granger Causality Tests
Date: 09/22/13 Time: 17:59
Sample: 1 36
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
TRM does not Granger Cause PNAL	29	0.61909	0.5468
PNAL does not Granger Cause TRM		0.72616	0.4941

