The Industrial Wage Effects of Croatia's Accession to the EU in an Applied Specific Factors Model of Production

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The economic impact of Croatia's accession into the European Union will be based on price changes and the associated adjustments in outputs and factor prices. Increased national income will be redistributed across industries as well as labor and capital. The present paper provides a gauge of these adjustments in an applied production model with labor specific to each of 23 industries in agriculture, manufacturing, and services. For a range of reasonable industrial price changes, the effects on industry wages and outputs will be large. Increased labor mobility would diminish the industrial wage impacts.

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Croatia's accession to the European Union will increase and redistribute income with some industries enjoying increased export opportunities while others suffer import competition. The process of EU accession began with the 2001 Stabilization & Association Agreement and asymmetric trade liberalization. Croatia is also in the midst of transition toward a market economy from socialism that began with the end of the civil war in 1993. The transition process has intensified the political maneuvering of industry and labor groups. Tariffs in Croatia are falling in the move to qualify for EU membership and about three quarters of import spending already goes to the EU-25. Croatian industries will be opening to Europe and to world markets with the EU common external tariff.

The present paper simulates adjustments in Croatia to EU accession based on anticipated price changes across 23 industries in an applied specific factors model of production. The specific factors model of Jones (1971), Mayer (1974), Mussa (1974), and Neary (1978) has a rich tradition in trade theory and has been applied by Thompson (1994) for Japan, Thompson (1996) for Alabama manufacturing, and Thompson and Toledo (2001, 2005) for Bolivia and Colombia.

Industrial outputs and factor prices adjust in the model to exogenous changes in the prices of traded products. The present focus is on industrial wage adjustments and labor is assumed immobile between industries. Labor immobility is in fact a recognized issue in Croatia with strong regional cultures, a legacy of firm loyalty, "life-long" employment, restrictive labor laws, and mismatched labor skills. Socialized industries have been subsidized and are artificially labor intensive. Traditional agricultural labor is facing integration into sophisticated EU agricultural policy.

The present model assumes constant returns and constant elasticity production functions. Sensitivity to substitution is examined. The model also assumes competition, appropriate as Croatia enters a large

productive Europe with decreased government involvement in the economy. Thompson (2003) shows that the assumption of competition can be relaxed to some degree with little effect on the comparative static properties of the specific factors model suggesting the present results approximate adjustments with some degree of imperfect competition.

The other input in the model is aggregate residual capital. The residual of industrial value added after the labor bill includes inputs such as land and energy but the production data lacks such detail. The present specification focuses on wage effects and aggregating other inputs into a mobile factor of production may not be too distorting.

Foreign investment is projected to play a significant role with Croatia in the EU. To gauge the potential impact of foreign investment on industrial wages, the effects of an increase in the capital stock on industrial wages is examined. This simulated foreign investment generates substantial wage increases focused on capital intensive industries. The return to domestic capital falls considerably with foreign investment.

The comparative static elasticities of projected industrial price changes on industrial wages and outputs in manufacturing, resource, and service industries suggest labor market policy to increase mobility would ease the transition of Croatia into the more open competitive EU economy.

1. Factor and industry shares

Factor and industry shares are the building blocks of the production model based on employment and pricing conditions. Table 1 presents 2001 industrial level data from the Croatian National Bank (2003) with the number of workers L, value added x, and the yearly net wage w in kuna. The average US dollar exchange rate in 2001 was \$0.12. Value added x is revenue less the cost of intermediate inputs and value added beyond the labor bill wL is attributed to aggregate "capital" input.

* Table 1 *

The present specification separates the eight National Classification of Economic Activities (NCEA) manufacturing industries that account for at least 1% of GDP. Trade, Real Estate, Transport & Telecom, and

the natural resource activities (Agriculture, Fishing, Mining) each account for about 10% of GDP followed closely by Public Administration. The sizeable wage variation across industries is consistent with the present assumption of labor immobility and reflects capital intensity differences as well as labor skills and hours worked.

Labor industry shares λ_{Lj} in Table 2 come directly from the number of workers L_j in industry j, $\lambda_{Lj} \equiv L_j/L_{tot}$ where $L_{tot} = \Sigma_j L_j$. The largest labor industry shares are in Trade with 15.1% (0.151) of the labor force, Public Administration 11.5%, Other Manufacturing 9.5%, Education 7.9%, and Transport & Telecom 7.8%. The smallest are in Fishing 0.1%, Mining 0.7%, and Refining 0.4%.

* Table 2 *

With perfect capital mobility, the return to capital r is the same across industries and the capital industry share λ_{Kj} in Table 2 is the ratio of industrial to total capital payment, $\lambda_{Kj} = rK_j/rK = (x_j - w_jL_j)/(\Sigma_j(x_j - w_jL_j))$ where K is capital input. The largest capital industry shares are Real Estate 13.0% and Agriculture 11.7% both including large land shares, as well as Trade 11.0% and Public Administration 5.7%. The smallest capital industry shares are in Fishing 0.3%, Mining 0.6%, Transport Equipment 0.6%, and Apparel 0.7%.

The derived labor factor shares θ_{Lj} in Table 2 are the share of value added paid to labor in each industry, $\theta_{Lj} \equiv w_jL_j/x_j$. For instance, the value added x of Agriculture is 12,198 million kuna, the labor bill 1,149 million kuna, and the labor factor share θ_{L1} = 1,149/12,198 = 0.094 = 9.4%. Labor factor shares reflect labor intensity as well as relative wages. The largest labor factor shares are in Transport Equipment 58.8%, Education 57.3%, Public Administration 53.8%, Health 50.9%, and Apparel 50.9%. The smallest are in Refining 6.9%, Agriculture 9.4%, Fishing 13.3%, Real Estate 15.3%, and Chemicals 19.6%.

The capital factor share is $\theta_{K1} = 1 - \theta_{L1}$. The large capital factor shares in Agriculture and Real Estate in Table 2 are due to implicit land inputs. Land ownership is a critical issue in the transition from socialism and the ownership of large tracks of land remains disputed. Regardless, landowners will face a different economic landscape as prices adjust to the EU.

Factor intensity anticipates the relative sizes of adjustments. Let a_{Kj} and a_{Lj} represent the cost minimizing inputs in industry j. The theoretical ranking of industries according to capital intensity is

$$\alpha_m \equiv a_{Km}/a_{Lm} > \ldots > a_{Kn}/a_{Ln} \equiv \alpha_n. \quad (1)$$

Assume a unit price of capital input to derive α_m. In Agriculture, the payment to capital is $x_A - w_A L_A$ = 12,198 – 1,149 = 11,049 million kuna. Rescaling capital input to r = 1 and there are 11,049 units of capital. With competition, value added x_j is paid to the inputs $x_j = w_j L_j + rK_j$ implying $K_j = x_j - w_j L_j$. The 3,376 workers imply the capital/labor ratio α_A = 11,049/3,376 = 3.23.

The most capital intensive industries in Table 2 are the outlier Agriculture 3.23 with its large implicit land input, Refineries 0.69, Real Estate 0.24, Chemicals 0.21, and Fishing 0.20. The most labor intensive industries are Apparel 0.02, Transport Equipment 0.03, Education 0.03, Public Administration 0.04, and Other Manufacturing 0.05. The mean capital/labor ratio is 0.07 and its standard deviation 0.05 indicates high variation, and there is a low peak and a skew toward labor intensity. Thompson (1995) shows that the influence of factor intensity outweighs substitution in the comparative static properties of these production models. The implication is that the high variation in factor intensity implies there large differences in adjustments across industries. More capital intensive industries would tend to attract proportionally more capital and enjoy higher wage and output increases.

Wages are expected to be higher in capital intensive industries due to the positive effect of capital on labor productivity, and the correlation between α_m and w_m is 0.28. National statistics reveal that workers differ quite a bit in education levels across industries. As an example, agriculture employs the highest percentage of workers with only primary education at 21% while financial intermediation at the other extreme employs only 0.6%. Certainly working conditions and job security also influence wages but in the present model capital intensity will play the dominant role in wage adjustments.

Labor unions remain important in economy of Croatia. As examples, the education union has repeatedly won wage increases above inflation while the public administration union has been unsuccessful.

The present model focuses on potential underlying forces across industries without delving into issues of union power. A "successful" industrial union would be able to translate falling labor demand from lower wages into less employment. The basic model can be modified to allow such restricted factor market adjustments as in Thompson (2003).

3. A specific factors model of Croatia

Input substitution plays a role in the size of adjustments in industrial outputs and wages. Substitution elasticities describe adjustments in the cost minimizing inputs to factor price changes as developed by Jones (1965), Chang (1979), Takayama (1982), and Thompson (1994). The cross price elasticity between the input of factor i and the payment to factor k in industry j is

$$E_{ij}^{k} = \hat{a}_{ij} / \hat{w}_{k} = \theta_{kj} S_{ij}^{k} \tag{2}$$

where ^ represents percentage change and S_{ij}^{k} is the Allen (1938) partial elasticity of substitution.

Constant elasticity of substitution (CES) implies constant Allen elasticities and factor shares are sufficient to derive cross price elasticities. Estimates of the Allen partial elasticities in (2) with translog production functions in the applied production literature such as Thompson (1997) are typically similar to CES. Cobb-Douglas is a special case of CES with unit Allen elasticities.

Aggregate substitution elasticities for the model are the weighted sum of cross price elasticities,

$$\sigma_{ik} \equiv \hat{a}_{i} / \hat{w}_{k} = \Sigma_{j} \lambda_{ij} E_{ij}^{k} = \Sigma_{j} \lambda_{ij} \theta_{kj} S_{ij}^{k} . \tag{3}$$

Linear homogeneity implies $\Sigma_{k} E_{ij}^{k} = 0$ and the own price elasticity E_{ij}^{i} is the negative of the sum of the cross price elasticities.

Table 3 reports Cobb-Douglas substitution elasticities. Own labor elasticities fall in the range -.103 in Trade to -.001 in Fishing, with most in the interval (-.02, -.04). There is inelastic capital input with weak substitution of capital when w_j changes in the σ_{Kj} column. There is somewhat stronger substitution of labor for capital when r changes in the σ_{jK} column. The most elastic term is the own capital elasticity at -.281.

* Table 3 *

Constant elasticity substitution (CES) would scale these cross price elasticities, halving them with CES = .5 for instance. Even with CES = 2, inelasticity would be prevalent in aggregate substitution elasticities. There is no evidence of such high substitution in the applied production literature, where elasticities generally range up to 1. Implications of inelastic substitution in production are a flatter production frontier and a more convex contract curve implying larger adjustments in outputs and factor prices as pictured by Ford and Thompson (1997). The present simulation includes sensitivity to CES.

Let x_j represent the output of product j, v_k the endowment of factor k, w_i the price of factor i, and p_m the price of product m. Behavioral assumptions are competitive pricing $p_m = \Sigma_i a_{im} w_i$ and full employment $v_k = \Sigma_j a_{kj} x_j$. The model is consistent up to a constant rate of unemployment. Fully differentiate these two conditions using substitution elasticities and the cost minimizing envelope property to find

$$\Sigma_i \sigma_{ki} \hat{w}_i + \lambda_{kj} \hat{x}_j = \hat{v}_k \tag{4}$$

$$\Sigma_i \theta_{im} \hat{w}_i = \hat{p}_m . \tag{5}$$

The comparative static model is the 47 equations in (4) and (5) arranged into matrix format

$$\begin{bmatrix} \sigma & \lambda \\ \theta' & 0 \end{bmatrix} \begin{bmatrix} \hat{w} \\ \hat{x} \end{bmatrix} = \begin{bmatrix} \hat{v} \\ \hat{p} \end{bmatrix} \tag{6}$$

where σ is a 24x24 matrix of substitution elasticities, λ is a 24x23 matrix of industry shares, θ' is a 23x24 matrix of factor shares, and 0 is a 23x23 null matrix. The comparative static model (6) solves for the effects of exogenous changes in prices p holding endowments v constant and assuming cost minimizing substitution and full employment. Comparative static price changes are identical for any constant rate of unemployment. Inverting (6) the $\hat{w}/\hat{p}$ vector describes how changing prices affect industrial wages and the return to capital and $\hat{x}/\hat{p}$ describes the local production possibility surface.

4. Derived comparative static elasticities

Table 4 summarizes the $\hat{w}/\hat{p}$ matrix for any CES production function. The "own" price elasticities of wages are positive and elastic, ranging from 13.1 in capital intensive Refining to 1.70 in labor intensive Transport Equipment. Capital intensity increases labor productivity leading to larger effects on labor demand when prices change. The correlation between capital intensity and the own wage elasticity is 0.65. Each industry wage depends directly on the price in its industry but changing prices across the economy create capital industrial movements affecting labor productivities. The net effect across industrial wages depends on the vector of price changes through the $\hat{w}/\hat{p}$ elasticities in Table 4.

* Table 4 *

Shared capital input is much less sensitive to price changes since mobility diminishes the price impacts. Capital return elasticities in the second column of Table 4 range from 0.265 for Agriculture to 0.003 for Apparel. A price increase in a capital intensive industry has a relatively large impact on the market for shared capital illustrated by the correlation of 0.48. Cross price effects on other wages are negative and inelastic, ranging from -.02 to -.05 but somewhat larger for the capital intensive outliers. Comparative static elasticities in Table 4 suggest large uneven wage adjustments and a minimal impact on the return to capital.

Table 4 also summarizes price elasticities of output in the third column. A higher price raises output along the production frontier attracting capital from other industries. Capital intensive industries are magnets for capital with own elasticities of 12.1 in Refining, 7.63 in Agriculture, and 6.52 in Fishing. The correlation between capital intensity and these own elasticities is 0.65. The typical own price elasticity of output is greater than one. Assumptions of competition and efficient production lead to the relatively large output effects.

The cross price elasticities of output not reported in Table 4 are small and negative, ranging from -.01 to -.10 with more impact in the capital intensive industries. An industrial price increase pulls small amounts of capital from other industries, and capital intensive industries have more pull.

Foreign investment will play a role adding to the capital stock as Croatia enters the EU. The last column in Table 4 reports elasticities of industrial wages with respect to changes in the capital endowment. For instance, every 1% increase in the aggregate stock of capital will raise the wage in capital intensive Refining by 1.65% and Agriculture by 0.87%. Wages in labor intensive industries rise slightly, 0.06% in Apparel and 0.08% in Education for instance. Foreign investment lowers the return to capital with a -0.21 elasticity. The present model underplays the long run importance of foreign investment as it would improve the level of technology.

5. The exogenous vector of price changes

Various influences, including trade with the rest of the world outside the EU, will affect industrial level price changes. The simple average most favored nations MFN tariff in the EU is somewhat lower than in Croatia, implying the new trade regime will be more open. The EU tariff schedule will apply to about a quarter of imports and will generate moderate price changes. The reduction of MFN tariffs in the Doha round will lower prices of imported manufactures. These price changes will implicitly induce both trade creation and trade diversion although these effects should not be large.

EU regulatory and tax influences suggest higher food costs with GMO and pesticide regulations, higher chemical costs with environmental regulations, and higher costs in various industries with EU consumer protection. There will be less government support for traditional heavy industries but more support for agriculture. Apparel prices will fall with global competition and elimination of the Multifiber Agreement in 2005.

There are moderate projected price changes in Table 5. A study by the World Bank (2003) indicates that the move to free trade between Albania and Macedonia did not lead to significant price changes although EU entry might generate somewhat larger price changes in Croatia. The Bank of Greece reports increases in consumer prices of about 10% in with the euro although increased demand associated with the Olympics may have contributed.

* Table 5 *

The vector specifies zero price changes for industries without clearly intuitive price changes. For instance, Refining and Utility prices depend primarily on fuel costs and the simulation holds their prices constant. Construction, Education, and Trade are not traded and their prices changes are set to zero. Other Manufacturing and Other Services are a mixed bag and their prices changes are set to zero.

The largest price increases are for Fishing and Food due to anticipated increased export demand. Real Estate should see increased activity with falling restrictions on property ownership. Public Administration will see a boost due to increased EU activity and support. These largest price increases are set at 5%, noticeable at the industry level but not overwhelming.

The Hotels & Restaurants industry is poised to expand with increased tourism. Health & Social Work will move toward a market system and will enjoy increased activity and higher prices. These two price increases are set conservatively at 3%.

Agriculture is a mixed with some products clearly gaining but others losing. The general level of support for agriculture promises to increase substantially with the EU Common Agricultural Policy (CAP). There is international pressure, however, to lower support in agriculture and there will be increased EU budget pressure with the entry of Central European countries. The agriculture price increase is set at a moderate 2%.

Chemicals will enjoy increased demand due to location advantages and increased export opportunities although the introduction EU regulations will raise costs. Its price increase is set at 1%.

The largest price decreases are set at -5% in Apparel and Transport Equipment. Apparel is highly protected and will face both EU and international competition. Transport Equipment is a traditional socialist industry producing heavy duty carriages and other labor intensive transport components that should face increased import competition.

Three other losing industries have price declines set at -3%. Minerals and Metal Products are protected socialist industries that will face increased import competition. Transport & Telecom will also face more open

competition in the EU. Telecom prices in Greece have fallen 10% over the past 5 years in a similar process of EU integration. Publishing and Finance will face competition and their price declines are set at -2% and -1%.

6. Wage and output adjustments

Multiply the matrix of price elasticities of factor prices in Table 3 by the projected price changes to find the vector of factor price adjustments in Table 5. The wage adjustments for industry specific labor are large. The biggest winners are workers in Fishing 28.2%, Real Estate 24.6%, Transport & Telecom 14.6%, and Food Manufacturing 11.5%, and the biggest losers in Refining -19.5%, Transport & Telecom -14.6%, Minerals -12.7%, Metal Products -11.6%, and Apparel -11.2%.

Labor unions would want to translate falling wages into less employment and lower industrial output. Declining industrial labor demand in import competing industries lowers the wage in a competitive labor market, but labor unions would deflect the declining demand into less employment. Lost industrial protection will dominate labor union efforts to maintain industrial wages in the long run. The present model focuses on labor market impacts, shifting demand with wage adjustments reflecting the impact.

The return to mobile capital increases 1.5% across the economy. It is not a foregone theoretical conclusion that the return to the mobile factor will increase. Capital is attracted to industries enjoying higher prices leading to a higher return and the simulated output adjustments.

To derive effects on industrial outputs, multiply the matrix of price elasticities of output in Table 3 by the vector of price changes. Industrial outputs and wages move together. The largest output gains are for Fishing 23.2%, Real Estate 19.6%, Food 6.5%, and Agriculture 5.3%, and the largest declines for Refining -19.5%, Transport & Telecom -11.6%, Minerals -9.7%, Metal Products -8.6%, Publishing -7.8%, Finance -6.6%, and Apparel -6.2%. Smaller output effects occur in industries with no projected price change except for capital intensive Refining that loses capital to the expanding industries. These sizeable output adjustments represent considerable economic reorganization.

Adjustments are proportional to the price change vector. If price changes were twice as large as in Table 5, adjustments in factor prices and outputs would also be twice as large. The high output sensitivity arises due to the assumptions of full employment and competitive pricing. Employment slack, idle capital, and monopoly power would diminish the output adjustments. The present model provides a benchmark that focuses on the underlying economic forces, and the ultimate adjustment will depend on political resolution and EU policy.

Varying the degree of CES substitution scales output adjustments accordingly but wage adjustments are unchanged. For instance, CES = 0.5 implies output adjustments half as large as Table 5. Estimates of substitution elasticities in the applied production literature are generally between 0.5 and 1. At the extreme of very little input substitution, outputs are nearly fixed. The projected wage changes in Table 5 hold for any degree of CES input substitution.

6. Conclusion

There will be substantial industrial output adjustments in Croatia as it accesses to the European Union. Industrial wage adjustments in the present production model are especially large with labor is tied to its industry but labor mobility would greatly dampen the impact. A lump sum subsidy for workers to relocate or change industries would encourage labor mobility and lessen the impact of EU accession on labor.

Beyond the present model, investment in a more open and efficient Croatian economy will raise wages. Foreign investment is expected to transform the economy especially in key industries. The industrial wage effects of foreign investment in the model are substantial, and industry specific foreign investment in the model has magnified wage effects.

The declining industrial wages and outputs in the model are no indictment of EU accession. With increased trade, gains for the economy will outweigh losses. Domestic firms facing import competition will increase their chances of survival by forming partnerships and mergers with EU firms. There is also room for specialization within the aggregated industries of the present study. Facing EU accession, labor groups and

industries can be expected to attempt to insulate themselves from international competition but the proven approach is to become more competitive.

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Table 1. Data, 2001

	NCEA	*L*	HRK *w*	mil HRK *wL*	mil HRK *x*	%GDP
1. Agriculture	A	30,376	37,836	1,149	12,198	8.8
2. Fishing	B	1,214	31,301	38	285	0.2
3. Mining	C	7,696	46,116	355	952	0.7
4. Mfg. Food	D15	43,919	41,484	1,822	5,147	3.7
5. Mfg. Apparel	D18	28,633	24,828	711	1,398	1.0
6. Mfg. Publishing	D22	11,476	43,884	504	1,646	1.2
7. Mfg. Refining	D23	4,513	51,564	233	3,356	2.4
8. Mfg. Chemicals	D24	14,620	50,856	744	3,796	2.7
9. Mfg. Minerals	D26	13,804	40,632	561	1,786	1.3
10. Mfg. Metal Products	D28	16,968	33,660	571	1,677	1.2
11. Mfg. Transport Equip	D35	18,018	48,060	866	1,472	1.1
12. Mfg. Other		99,906	37,680	3,764	8,702	6.3
13. Utilities (elec, gas, water)	E	27,655	46,716	1,292	3,926	2.8
14. Construction	F	65,782	33,996	2,236	6,832	4.9
15. Trade	G	159,479	35,004	5,582	15,955	11.5
16. Hotels & Restaurants	H	40,954	35,328	1,447	4,761	3.4
17. Transport & Telecom	I	82,138	46,716	3,837	13,821	9.9
18. Finance	J	28,637	62,952	1,803	6,710	4.8
19. Real Estate	K	52,408	42,480	2,226	14,549	10.5
20. Public Administration	L	121,305	51,660	6,267	11,645	8.4
21. Education	M	83,646	46,104	3,856	6,725	4.8
22. Health & Social Work	N	71,598	51,960	3,720	7,312	5.3
23. Other services	O	31,396	43,200	1,356	4,305	3.1
Total		1,056,141	42,072	44,434	138,957	100.0

Table 2. Industry Shares λ_{Lj} & λ_{Kj}, Factor Shares θ_{Lj}, and Capital Intensity a_{Kj}/a_{Lj}

	λ_{Lj}	λ_{Kj}	θ_{Lj}	a_{Kj}/a_{Lj}
1. Agriculture	0.029	0.117	0.094	3.23
2. Fishing	0.001	0.003	0.133	0.20
3. Mining	0.007	0.006	0.373	0.08
4. Mfg. Food	0.042	0.035	0.354	0.08
5. Mfg. Apparel	0.027	0.007	0.509	0.02
6. Mfg. Publishing	0.011	0.012	0.306	0.10
7. Mfg. Refining	0.004	0.033	0.069	0.69
8. Mfg. Chemicals	0.014	0.032	0.196	0.21
9. Mfg. Minerals	0.013	0.013	0.314	0.09
10. Mfg. Metal Products	0.016	0.012	0.341	0.07
11. Mfg. Transport Equip	0.017	0.006	0.588	0.03
12. Mfg. Other	0.095	0.052	0.433	0.05
13. Utilities	0.026	0.028	0.329	0.10
14. Construction	0.062	0.049	0.327	0.07
15. Trade	0.151	0.110	0.350	0.06
16. Hotels & Restaurants	0.039	0.035	0.304	0.08
17. Transport & Telecom	0.078	0.106	0.278	0.12
18. Finance	0.027	0.052	0.269	0.17
19. Real Estate	0.050	0.130	0.153	0.24
20. Public Administration	0.115	0.057	0.538	0.04
21. Education	0.079	0.030	0.573	0.03
22. Health & Social Work	0.068	0.038	0.509	0.05
23. Other services	0.030	0.031	0.315	0.09

Table 3. Substitution Elasticities, σ_{ik}

Labor	σ_{jj}	σ_{jK}	σ_{Kj}
1. Agriculture	-0.026	0.026	0.011
2. Fishing	-0.001	0.001	0.000
3. Mining	-0.005	0.005	0.002
4. Mfg. Food	-0.027	0.027	0.012
5. Mfg. Apparel	-0.013	0.013	0.004
6. Mfg. Publishing	-0.008	0.008	0.004
7. Mfg. Refining	-0.004	0.004	0.002
8. Mfg. Chemicals	-0.011	0.011	0.006
9. Mfg. Minerals	-0.009	0.009	0.004
10. Mfg. Metal Products	-0.011	0.011	0.004
11. Mfg. Transport Equip	-0.007	0.007	0.004
12. Mfg. Other	-0.054	0.054	0.023
13. Utilities	-0.018	0.018	0.009
14. Construction	-0.042	0.042	0.016
15. Trade	-0.098	0.098	0.038
16. Hotels & Restaurants	-0.027	0.027	0.011
17. Transport & Telecom	-0.056	0.056	0.029
18. Finance	-0.020	0.020	0.014
19. Real Estate	-0.042	0.042	0.020
20. Public Administration	-0.053	0.053	0.031
21. Education	-0.034	0.034	0.017
22. Health & Social Work	-0.033	0.033	0.019
23. Other services	-0.020	0.020	0.010
Capital K		-0.281	

Table 4. Comparative Static Elasticities

Economic Activity	Price-Labor	Price-Capital	Price-Output	Capital-Wage
1. Agriculture	8.07	0.265	7.07	0.87
2. Fishing	7.52	0.004	6.52	0.48
3. Mining	2.68	0.004	1.68	0.18
4. Mfg. Food	2.79	0.021	1.79	0.18
5. Mfg. Apparel	1.96	0.003	0.96	0.06
6. Mfg. Publishing	3.25	0.008	2.25	0.24
7. Mfg. Refining	13.1	0.102	12.06	1.65
8. Mfg. Chemicals	4.96	0.035	3.96	0.49
9. Mfg. Minerals	3.17	0.009	2.17	0.21
10. Mfg. Metal Products	2.92	0.007	1.92	0.15
11. Mfg. Transport Equip	1.70	0.002	0.70	0.08
12. Mfg. Other	2.28	0.026	1.28	0.12
13. Utilities	3.00	0.018	2.00	0.23
14. Construction	2.99	0.032	1.99	0.17
15. Trade	2.73	0.067	1.73	0.16
16. Hotels & Restaurants	3.23	0.025	2.23	0.19
17. Transport & Telecom	3.39	0.081	2.39	0.29
18. Finance	3.61	0.041	2.61	0.41
19. Real Estate	5.53	0.182	4.53	0.56
20. Public Administration	1.84	0.023	0.84	0.11
21. Education	1.74	0.011	0.74	0.08
22. Health & Social Work	1.95	0.016	0.95	0.12
23. Other services	3.13	0.021	2.13	0.22

Table 5. Projected Price Changes and Adjustments

	Prices	Wages	Outputs
1. Agriculture	2%	7.3%	5.3%
2. Fishing	5%	28.2%	23.2%
3. Mining	-1%	-5.1%	-4.1%
4. Mfg. Food	5%	11.5%	6.5%
5. Mfg. Apparel	-5%	-11.2%	-6.2%
6. Mfg. Publishing	-2%	-9.8%	-7.8%
7. Mfg. Refining	0	-19.5%	-19.5%
8. Mfg. Chemicals	1%	-0.9%	-1.9%
9. Mfg. Minerals	-3%	-12.7%	-9.7%
10. Mfg. Metal Products	-3%	-11.6%	-8.6%
11. Mfg. Transport Equip	-5%	-9.5%	-4.5%
12. Mfg. Other	0	-1.9%	-1.9%
13. Utilities	0	-3.0%	-3.0%
14. Construction	0	-3.0%	-3.0%
15. Trade	0	-2.7%	-2.7%
16. Hotels & Restaurants	3%	6.5%	3.5%
17. Transport & Telecom	-3%	-14.6%	-11.6%
18. Finance	-1%	-7.7%	-6.7%
19. Real Estate	5%	24.6%	19.6%
20. Public Administration	5%	8.0%	3.0%
21. Education	0	-1.1%	-1.1%
22. Health & Social Work	3%	4.5%	1.5%
23. Other services	0	-3.2%	-3.2%