THE RELEVANCE OF THE THEORY OF SECTORAL CLASHES TO THE MEXICAN ECONOMY

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IN THE FIRST PART, I WILL DESCRIBE BRIEFLY THE INTUITIVE RELEVANCE OF Professor Markos Mamalakis' "Theory of Sectoral Clashes"[1] to the Mexican case. In part II, I will briefly comment on aspects of the theory which are relevant to empirical verification.[2] And finally, in part III, I will attempt to derive and test some of the empirical implications of this hypothesis.

I

From the Porfirian era (1876–1910), with its obvious coalition between latifundium agriculture, the mining sector, and government, which favored exports of agricultural and mineral products, to the post-revolutionary period of a coalition between government and manufacturing, and its derived policy of fostering import substitution, it appears that the theory of sectoral clashes provides a reasonable framework to explain the development of the Mexican economy over the past one hundred years.

In fact, it seems that the development of the Mexican economy from 1876–1910—the Porfirian era—has all the characteristics of a coalition between mining, agriculture and the government sector.[3]

The Mexican Government favored massive social overhead capital investment—mainly railroads—which provided cheap transportation. This availability of massive and cheap transportation, in turn, facilitated the exports of mineral and agricultural products. The mining sector changed radically from the production of gold and silver to the production of industrial metals, and ownership passed to American capitalists.[4] The annual rate of growth of oil was thirty-two percent.

Although the rate of growth of food output was negative at times, the output of raw materials grew at the rate of 2.6 percent a year. More significantly, the output of agricultural exports had an annual rate of growth of 6.3 percent. The growth process of the agricultural and mining sectors was also fostered by low taxes on landed property, mineral production and export earnings.

Although the process of industrialization had started early, abetted by

* Thanks are due to Fernando Urbina for his help in the implementation of the empirical part.

the increase in aggregate demand derived from the increase in foreign investment, mining and agricultural exports, the government was reluctant to raise the import barriers on certain industrial goods. This helped maintain a price relation that was favorable to the agricultural and mining sectors using manufactured goods as inputs.

The government also pursued a cautious policy—until the revaluation of 1905—of not overvaluing the peso, in an attempt to maintain the competitiveness of the export industries. It also helped maintain the monopsonistic structure of the agricultural sector with the consequent beneficial effects to the large landowners. All of these policy measures, which favored the growth of exports of the mining and agricultural sectors, are congruent with the advantages that these sectors would expect from this type of coalition.

This traditional export sector-government coalition led to a clash that will be described below. In fact, the revolution of 1910–1917, aside from its obvious popular support, could be interpreted as a result and part of an induced clash. The underpinnings of this clash were as follows.

Capitalists in manufacturing industries wanted more and more protection from foreign competition. This protection was detrimental to the export sector, since it propitiated an increase in the price of inputs. But more importantly, manufacturing needed the release of the labor force from the *hacienda* for its own growth. The manufacturing capitalist class favored therefore and supported the Mexican revolution against the existing coalition.

The post revolutionary era (1917–1970) also fits well into Mamalakis' modern sectoral coalition and clash pattern.[5]

The agrarian reform, one of the principal outcomes of the Mexican revolution, had obvious advantages for the industrial sector. Of its two main results, the so-called "mobility" effect,[6] which measures the impact of the agrarian reform on labor mobility, is a precondition for industrial development, and the "distribution effect," which measures the impact of agrarian reform on the distribution of income, is also favorable to manufacturing growth.

Government investment changed placing relatively more importance to overhead investment favoring manufacturing, even though it also favored that part of the agricultural sector that was used as a quasi-capital goods sector. This claim is in part supported by Appendix Table 2,[7] which clearly shows the importance of public investment for manufacturing.

The financial sector of the economy was created to meet the needs of a modern economy and, since then, has been one of the principal instruments of government in fostering industrial development. Appendix Table 1 shows how the financial system also changed in favor of manufacturing. The tax system has also been used in such a way as tofavor manufacturing profits.

Tariffs and protection are among the most important instruments used by the manufacturing-government coalition and Mexico has been no exception. Tariffs and direct controls over imports were used strongly in favor of the manufacturing sector.[8] Other characteristics of this coalition have also been present in Mexico: the price fixing of products to keep consumer goods at low prices and force a price relation unfavorable to agriculture; the ceiling placed upon the money rate of interest which lowers the real rate of interest, and reduces the income and wealth of the rentier class to the benefit of the debtor industrial class; and the government policy of maintaining the foreign exchange rate rigid, thus artificially lowering the value of the imports used mainly by the manufacturing industry,

II

Although intuitively the theory of sectoral clashes fits well into the Mexican experience, I should like to test it more rigorously.

Unfortunately, without substantial reworking and as the theory is currently stated complete formal testing of it is very difficult, if not impossible.

A good theory once fully developed has certain characteristics, such as the possibility of deriving from it sharp, testable propositions, i.e., propositions capable of being refuted empirically. Although the theory of sectoral clashes is not fully developed yet, it is possible to obtain some logically deduced statements which can be checked with data and thus measure in part the reliability of the theory.

Before doing that, however, I will comment briefly on the intriguing points of the development of this theory which will be of great help in explaining the problems confronting its empirical implementation.

It is well known that a theory is defined as a set of statements divided fundamentally into three kinds:

a) Basic assumptions or fundamental statements.
b) Statements deduced from the initial axioms—theorems—which have implications which might be contradicted by observations.
c) Statements relating theoretical concepts to the observable. In order to check our derived statements, it is necessary to define them very clearly in terms of observable information.

We could argue about the relevance or validity of Mamalakis' basic assumption—existence of a stronger consciousness of sectoral interest instead of, say, the Marxist assumption of a stronger consciousness of class interest—but it is doubtful that a reasonable conclusion would be reached. It is, thus, preferable to discuss the deduced statements of the theory.

In part V of the paper[9] Mamalakis talks about three major effects[10] of sectoral coalitions and clashes:

a) The wage-employment effect.
b) The income-distribution effect.
c) The growth effect.

I will limit my comments and the subsequent empirical testing to the wage-employment effect.

Mamalakis argues that the wage and employment effect on the dominant sector is positive,[11] and supposedly a function of sectoral power. The wage-employment line that shows the intersections of the demand and supply of labor in a dominant position is expected to have a higher slope than the hypothetical line that the same sector would have if no dominance existed. The greater the power of the sector the higher this line is expected to be. This is true, but hard to prove, since only one wage-employment line is observed.

Next, it is argued that wages and employment are likely to rise in step-wise fashion, a pattern that "is dictated by the nature of dominance and the attempt of the sector to maintain it."[12] I think that the step-wise fashion of the wage-employment line is basically determined by the intra-sectoral class struggle. The capitalists, on the one side, would like to acquire as much as they can from the increased revenue gained by the sectoral coalition, and this could be achieved best if all additional labor were employed at a constant (or decreasing) marginal cost. Labor tries, on the other side, as a class in the sector to differentiate the market and block the entry so that all gains would go to them via higher wages. So I think the step-wise pattern of wages-employment could not be used as evidence of sectoral dominance but just as an indication of intra-sectoral class power.

The income and employment effects on the suppressed sector are the opposite of what they would have been if no suppression were present. But again, the real wage-employment line could rise, fall or remain constant and could not in itself be used as an evidence of the suppression of a sector.

In spite of all these reservations the wage-employment behavior can be used to test the sectoral clash hypothesis. That will be done in part III in a very preliminary and simple fashion.

III

The wage employment line for each sector is the intersection of the demand (value of the marginal product of labor) and supply of labor for each sector (Figure 1).

Mamalakis argues that the forces behind the shifts in the demand for

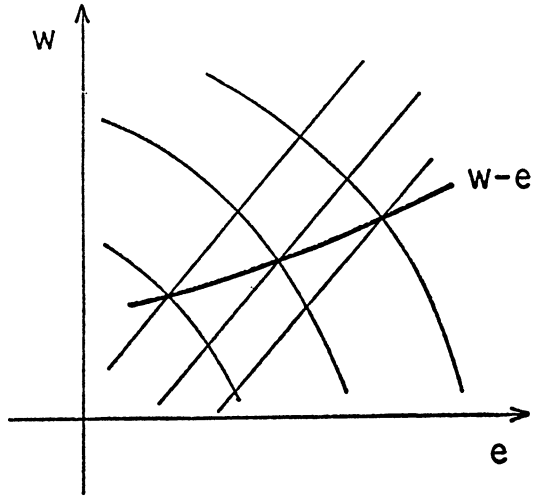

Figure 1

labor are due to a combined "real" effect[13] and also to factors related to the power of the dominant (or suppressed) sector. Graphically (see Figure 2) we have in the dominant sector the shift from D_1 to D_2' to reflect the natural or "real" effect, and the shift from D_2' to D_2 to reflect the "power" effect. In a suppressed sector the "power" effect supposedly is negative.

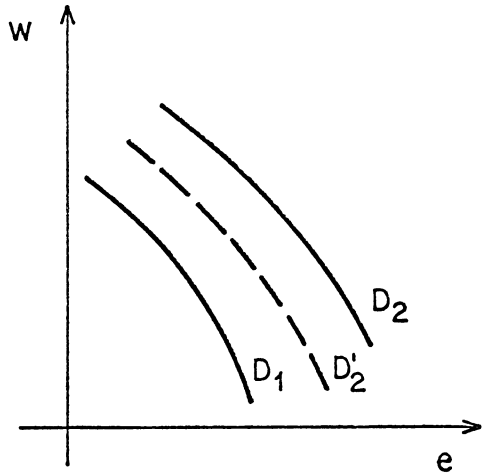

Figure 2

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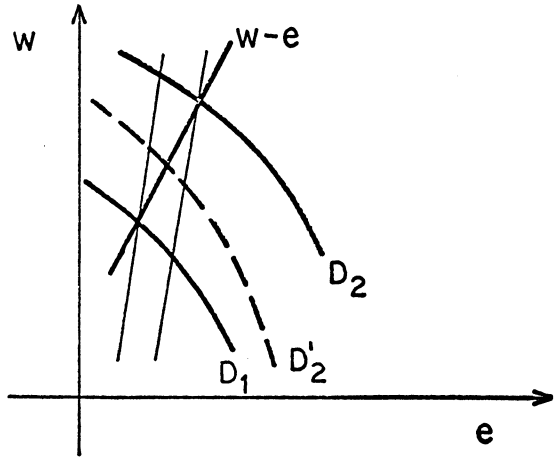

Figure 3

We can think of two exhaustive possibilities: the supply of labor can be elastic or inelastic. Suppose it is inelastic. What would the outcome be for the dominant and for the suppressed sector?

Figure 3 shows the case of the dominant sector. The real change from D_1 to D'_2 is positively related to natural forces of development. The shift from D'_2 to D_2 should be positively correlated with the power of the sector.

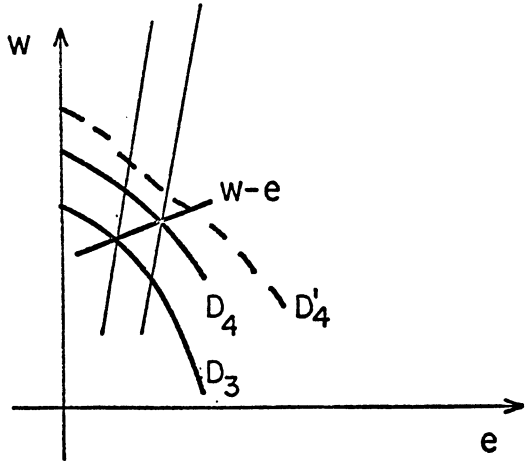

Figure 4

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Figure 4 shows the case of the suppressed sector. The shift from D_3 to D'_4 is due again to natural forces, and it is expected to be positively correlated with them. The shift from D'_4 to D_4 is expected to be positively correlated with the power of the sector.

So, we can hypothetically state the following relationship:

$$\frac{W(i)}{W(j)} = f\left(\frac{E(i)}{E(j)}, \frac{Y(i)}{Y(j)}, \frac{TP(i)}{TP(j)}\right) \qquad \text{(I)}$$

$W(i)$ = rate of growth of wages in the dominant sector.
$W(j)$ = rate of growth of wages in the suppressed sector.
$E(i)$ = income elasticity of demand in the dominant sector.
$E(j)$ = income elasticity of demand in the suppressed sector.
$Y(i)$ = change in output-per man in the dominant sector.
$Y(j)$ = change in output-per man in the suppressed sector.
$TP(i)$ = measure of protection in the dominant sector.
$TP(j)$ = measure of protection in the suppressed sector.

We expect to find a strong correlation with respect to the first two explicative terms,[14] and, in accord with the theory also, a strong and positive correlation with the third term.

But what would happen if the supply of labor were elastic? Figures (5) and (6) present the case for the dominant and suppressed sectors respectively. In this situation we could hypothetically expect the following relationship to hold:

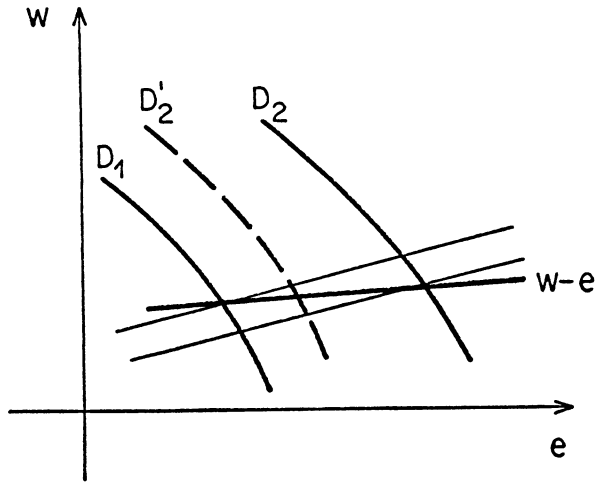

Figure 5

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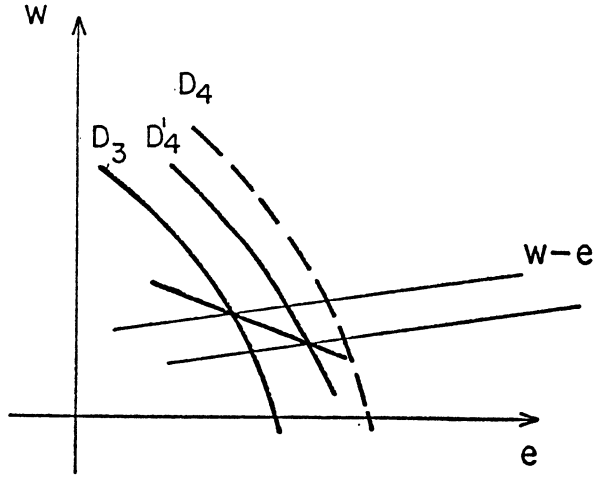

Figure 6

$$\frac{e(i)}{e(j)} = f\left(\frac{E(i)}{E(j)}, \frac{Y(i)}{Y(j)}, \frac{TP(i)}{TP(j)}\right) \quad \text{.....(II)}$$

where the only undefined terms are

e(i) = rate of growth of employment in the dominant sector.
e(j) = rate of growth of employment in the suppressed sector.

So we could argue that if the theory is applicable, you should expect, in relation I, relation II or both to find a positive correlation with the third factor. If neither one of them develops as we expect, we would have reasons to suspect the applicability of the theory to the Mexican case.

Data including the relevant variables of relations I and II were taken for 30 of the 45 branches[15] of the Mexican economy for the period 1950–1967. Based on the percentage protection rate for each branch and knowledge of the import quotas, the branches were divided into suppressed and dominant and are presented in Table 3.

The econometric results of this first alternative are the following:

$$\frac{W(i)}{W(j)} = 1.850 - \underset{(0.130)}{0.425}\frac{E(i)}{E(j)} - \underset{(0.028)}{0.059}\frac{Y(i)}{Y(j)} - \underset{(0.0192)}{0.0156}\frac{TP(i)}{TP(j)} \qquad r^2 = 0.48$$

$$\frac{e(i)}{e(j)} = -0.0060 - \underset{(0.2216)}{0.4760}\frac{E(i)}{E(j)} - \underset{(0.0478)}{0.1049}\frac{Y(i)}{Y(j)} - \underset{(0.0191)}{0.0179}\frac{TP(i)}{TP(j)} \qquad r^2 = 0.93$$

The first equation has a low r^2 and the signs are opposite of what is ex-

pected according to the theory of sectoral clashes.[16] The second equation is better. The r^2 is reasonably high but the significance of the coefficients tell us that the rate of growth of employment is explained mainly by the "real" or "natural" forces and that the "power" of the sector does not have any significance in explaining the rate of growth of employment.

In the second alternative, instead of taking all of the suppressed sectors, we took the average value of each of the relevant variables. The corresponding results are the following:

$$\frac{W(i)}{W(j)} = 1.255 - \underset{(0.12)}{0.1256}\frac{E(i)}{E(j)} + \underset{(0.057)}{0.097}\frac{Y(i)}{Y(j)} - \underset{(0.0087)}{0.0095}\frac{TP(i)}{TP(j)} \qquad r^2 = 0.14$$

$$\frac{e(i)}{e(j)} = 1.6472 + \underset{(0.3117)}{0.5497}\frac{E(i)}{E(j)} - \underset{(0.046)}{0.035}\frac{Y(i)}{Y(j)} + \underset{(0.024)}{0.0248}\frac{TP(i)}{TP(j)} \qquad r^2 = 0.15$$

Again the wage equation is not good at all; the correlation coefficient is low and signs are as in the first alternative. None of the coefficients are significantly different from zero. But now the employment equation has a very low r^2. Both equations are obviously inferior to the first alternative.

Finally two more alternatives were run trying to capture a better measurement of protection. If we look at Table 3, certain branches, like basic chemicals, have a low protection rate. What happens is that in Mexico there also exists a quota system[17] so that the tariff rate is not always a good proxy to measure the degree of dominance.

It was attempted to correct this problem by using a dummy variable[18] for those branches where I thought that the protection rate was not a good proxy for measuring the degree of dominance.

The equations are similar and I will just explain in detail one of them. The rate of growth of wages equation is the following:

$$\frac{W(i)}{W(j)} = a + b\frac{E(i)}{E(j)} + d\frac{Y(i)}{Y(j)} + c\frac{TP(i)}{TP(j)} + e\,Z(i)\,\frac{TP(i)}{TP(j)}$$

where the variable

$$Z(i) = \begin{cases} 0 \text{ For all branches (i) which } TP(i) > 0.2 \\ 1 \text{ For all branches (i) which } TP(i) < 0.2 \end{cases}$$

What do we get by this artificial change? In Figure 7 is shown a hypothetical situation with two groups of observations. Group A shows the group of observations corresponding to branches for which TPi represents a good proxy of the degree of dominance and group B for branches for which TPi does not

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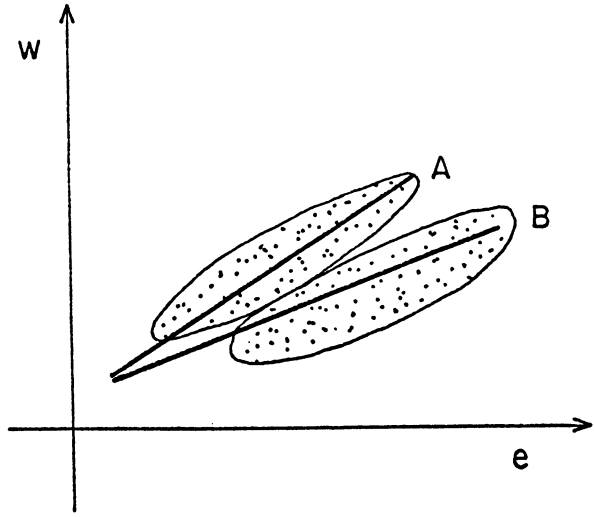

Figure 7

represent a good proxy of the degree of dominance. Notwithstanding that they are protected (and consequently have higher wi/wj) the protection is derived through quotas and therefore have relatively low values of $TP(i)/TP(j)$.

From Figure 7 we can see that we need to run a regression which will capture a change in the slope $\frac{dW(i)/W(j)}{dTP(i)\,TP(j)}$ for the group B of observation. This is done in the equation proposed.

The results are the following for the two alternatives:

First alternative:

$$\frac{W(i)}{W(j)} = 1.872 - \underset{(0.635)}{0.0317}\frac{E(i)}{E(j)} - \underset{(0.028)}{0.057}\frac{Y(i)}{Y(j)} - 0.0171\frac{TP(i)}{TP(j)} + \underset{(0.264)}{0.1063}\; Zi\frac{TP(i)}{TP(j)} \qquad r^2 = 0.55$$

$$\frac{e(i)}{e(j)} = 0.1313 + \underset{(0.2266)}{0.4189}\frac{E(i)}{E(j)} + \underset{(0.050)}{0.100}\frac{Y(i)}{Y(j)} + \underset{(0.020)}{0.00173}\frac{TP(i)}{TP(j)} + \underset{(0.44)}{0.0616}\; Zi\frac{TP(i)}{TP(j)} \qquad r^2 = 0.83$$

Again the first equation has low r^2, but the second equation has high r^2 and the signs are as expected. The "real" or "normal" coefficients are sig-

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nificantly different from zero but not so for the "power" coefficients. Finally the second aternative is the following:

$$\frac{W(i)}{W(j)} = 0.972 + \underset{(0.0774)}{0.0293}\,\frac{Ed(i)}{Ed(j)} + \underset{(0.1343)}{0.0406}\,\frac{Y(i)}{Y(j)} - \underset{(0.006)}{0.006}\,\frac{TP(i)}{TP(j)} - \underset{(0.1228)}{0.0559}$$

$$Zi\,\frac{TP(i)}{TP(j)} \qquad r^2 = 0.95$$

$$\frac{e(i)}{e(j)} = 1.645 + \underset{(0.3343)}{0.3302}\,\frac{Edi}{Edj} + \underset{(0.21)}{0.2289}\,\frac{Y(i)}{Y(j)} + \underset{(0.025)}{0.0255} + \underset{(0.5196)}{0.3798}$$

$$Zi\,\frac{TP(i)}{TP(j)} \qquad r^2 = 0.25$$

Here we have for both equations the correct signs for the "normal" causes, but in the wage equation the opposite sign for the "power effect" even though it is not significantly different from zero. In the four regressions the dummy coefficient is not significantivelyly different from zero.

This makes us conclude that the "normal" causes explain relatively well the growth of employment in this alternative, and that the power of the sector does not have any significance in explaining the rate of growth of employment.

Based on these results I will conclude that the evidence of the Mexican economy does not conform with the theory insofar as the wage employment effect is concerned. It seems, however, both convenient and necessary to try to develop testable propositions with regard to the income distribution and growth effect before being able to make a more definitive conclusion with respect to applicability of Mamalakis' Theory of Sectoral Clashes to Mexican economic development between 1950 and 1967.

NOTES

1. See Markos Mamalakis, "The Theory of Sectoral Clashes" *LARR,* present issue. This essay will be referred to hereafter as *Theory of Sectoral Clashes.*

2. In the second and third parts of the present paper the wage-employment hypothesis of Mamalakis' Theory of Sectoral Clashes is discused and tested. It may be pointed out that the presentation of this hypothesis has been omitted from the version of the theory published in the present issue of LARR because of space limitations. The wage-employment hypothesis is described in detail, however, in Markos Mamalakis, "Teoría de los choques sectoriales: segundo ensayo" *El Trimestre Económico,* México, Abril–Junio de 1969, Núm. 142, pp. 215–246. This essay will be referred to hereafter as *Choques sectoriales: segundo ensayo.*

3. The so-called traditional pattern; see Mamalakis, *Theory of Sectoral Clashes, op. cit.*

4. Luciano Barraza, "A Three Sector Model of Growth for Mexico," Ph.D. Thesis—University of Wisconsin, 1968, pp. 14–16.
5. See M. Mamalakis, *Theory of Sectoral Clashes, op cit.*
6. See L. Barraza *op. cit.*, page 36.
7. Mamalakis, *Theory of Sectoral Clashes, op. cit.*
8. G. M. Bueno, "La estructura de la protección efectiva en México en 1960." Mimeographed Paper. El Colegio de México.
9. Mamalakis, *Theory of Sectoral Clashes.*
10. I prefer to concentrate on the major effects that are more fully developed, instead of the corollaries that are presented without much discussion, particularly since these corollaries do not necessarily follow from the initial axioms.
11. M. Mamalakis, *Choques sectoriales: segundo ensayo*, pp. 218–224.
12. *Ibid.*, p. 219.
13. "Changes in the production process that can be considered natural. These changes include higher efficiency, technological innovation, higher quality of labor, rising exports and so forth." Mamalakis, *Theory of Sectoral Clashes, op. cit.*
14. These are proxies for the normal effect. Clearly the higher the income elasticity of demand for a sector, the greater the shift in the value of the marginal product of labor (demand for labor) for a given shift in income. Change in output per man is used as a proxy for the level of all other inputs and technological change. It would have probably been better if the rate of change were used as a proxy.
15. The branches were defined by the input output matrix.
16. Clearly, the order of the signs is not necessarily opposite to what is expected in a neoclassical model. In fact, these results tell us clearly that the employment equation is the relevant one in the Mexican case. That is that Mexico has an elastic supply of labor, which is the intuitively expected result. In any case, I will present also the results of the wage equation.
17. It is called quota-price system.
18. I couldn't use the proxy that I consider the best one, i.e., the ratio of international to national shadow prices for each sector.

APPENDIX

TABLE 1

Financial Transfers in Mexico
(Millions of Pesos 1960)

	Coming From				*Going Into*			
Years	*Agriculture*	*Manufacturing*	*Services*	*Total*	*Agriculture*	*Manufacturing*	*Services*	*Total*
1942	3,533.6	5,048.1	7,193.5	15,775.2	2,106.7	3,274.5	7,951.3	13,332.5
1943	3,994.0	6,084.4	8,585.3	18,663.7	2,133.6	3,819.2	7,999.6	13,932.4
1944	3,594.1	6,291.4	9,232.6	19,478.2	2,495.2	4,839.7	7,567.1	14,902.0
1945	3,861.3	7,096.6	9,914.2	20,872.1	1,729.3	5,821.2	7,642.8	15,193.3
1946	3,490.3	6,028.6	9,145.6	18,664.5	1,454.6	6,330.3	7,406.9	15,191.8
1947	3,631.3	5,884.7	9,106.3	18,662.3	1,625.1	7,287.8	7,719.6	16,632.5
1948	4,230.9	6,681.4	10,032.7	20,945.0	1,696.3	8,097.8	9,122.1	18,916.2
1949	4,815.0	7,257.5	11,188.4	23,260.9	1,873.3	8,457.0	9,950.9	20,281.2
1950	5,417.8	8,100.7	12,528.8	26,047.3	2,003.2	8,977.3	10,129.8	21,110.3
1951	5,346.6	8,255.7	12,606.3	26,208.6	2,032.3	10,388.4	9,433.8	21,854.5
1952	5,206.0	8,703.9	13,205.2	27,115.1	2,367.1	10,937.5	9,950.0	23,254.6
1953	5,753.2	9,518.6	14,850.0	30,121.8	3,134.0	12,390.5	11,518.5	27,043.0
1954	6,939.8	10,650.1	16,765.4	34,355.3	2,966.4	14,052.7	12,747.8	29,776.9
1955	7,362.4	11,388.2	17,517.4	36,268.0	3,505.5	12,866.0	12,405.3	28,796.8
1956	7,220.1	12,683.8	19,123.4	39,027.3	3,805.0	13,882.5	13,108.7	30,796.2
1967	7,626.2	13,325.3	20,049.5	41,001.0	4,039.1	15,493.0	13,990.5	33,522.6
1958	8,297.7	15,015.0	20,590.7	43,903.4	4,413.6	17,169.6	15,794.6	37,377.8
1959	8,556.5	16,247.7	23,265.9	48,070.1	5,256.4	18,987.0	16,649.1	40,892.5
1960	9,059.1	17,751.7	25,554.1	52,364.9	5,801.4	21,052.9	19,559.8	46,414.1

Source: L. Solis "Desarrollo a largo plazo de México" in *Demographia y Economia I*, 1, 1967.

TABLE 2

Public Investment by Destination, Mexico
(Millions of Pesos)

Years	Total	Agri-culture[a]	Manu-facturing[b]	Communi-cations[c]	Social Investment[d]	Others[e]
1939	233	39	27	144	17	1
1940	290	44	60	152	22	5
1941	337	59	28	189	44	7
1942	464	65	38	300	43	7
1943	568	86	36	387	40	8
1944	657	122	63	388	46	13
1945	848	144	132	460	54	21
1946	999	193	153	526	76	21
1947	1,310	258	162	674	114	29
1948	1,539	319	279	681	138	19
1949	1,956	458	472	758	118	32
1950	2,672	515	796	1,079	113	26
1951	2,836	579	732	1,158	120	22
1952	3,280	561	697	1,378	292	44
1953	3,076	563	762	1,344	115	150
1954	4,183	626	1,365	1,488	231	313
1955	4,408	605	1,738	1,422	446	46
1956	4,571	649	1,289	1,703	502	74
1957	5,628	670	1,737	2,018	649	145
1958	6,190	698	2,090	2,377	430	149
1959	6,532	752	1,943	2,746	472	228
1960	8,376	580	2,610	3,014	748	287
Rates of growth:						
1940–45	24.0	27.0	17.1	24.5	25.7	26.7
1945–50	24.9	29.0	43.3	18.6	23.0	12.5
1950–55	10.5	3.3	16.9	5.7	18.5	10.4
1955–60	13.5	—.9	10.0	15.2	24.8	18.5

Source: "Estadísticas básicas para la proyección del desarrollo económico de México." Grupo Secretaría de Hacienda-Banco de México, S.A. (SH-BM).

[a] Primarily irrigation. [b] Primarily electricity, oil and steel. [c] Primarily roads and railroads.
[d] Primary hospital, education, and housing. [e] Primary administration, and defense.

TABLE 3

Suppressed and Dominant Sectors

	(1) *e*	(2) *w*	(3) *d*	(4) *Rate p*	(5) *y*
Suppressed branches					
1. Agriculture	2.3	11.8	0.648	0.133	1,000
2. Livestock	1.47	11.8	0.648	0.159	1.000
7. Oil	3.6	9.0	1.456	0.151	1.000
13. Textiles	—1.5	10.2	0.931	0.186	3.074
14. Other textiles	3.5	1.8	0.931	0.284	3.074
19. Leather	2.2	5.9	0.931	0.138	16.216
Dominant Branches					
3. Forestry	2.3	4.2	0.648	0.950	1.000
6. Non-metallic minerals	8.8	6.2	1.930	2.643	1.000
8. Dairy products	5.7	8.0	0.324	0.666	—1.775
9. Milling	3.6	8.2	0.324	0.367	—1.775
10. Other foodstuffs	3.8	9.5	0.324	0.230	—1.775
11. Beverages	4.7	7.6	0.324	2.990	—1.775
15. Apparel	—0.3	8.3	0.931	0.853	6.928
16. Wood and cork	1.5	7.9	2.306	0.620	1.831
17. Paper products	3.7	9.5	2.306	0.380	—5.847
18. Painting	3.6	9.5	2.306	0.609	679
20. Rubber products	4.8	8.7	1.619	0.351	—1.700
21. Basic chemicals	7.6	9.3	1.619	0.128	10.822
22. Plastics	6.7	7.2	1.619	0.141	10.822
23. Insecticides	5.9	11.0	1.619	0.064	10.822
24. Soaps and detergents	4.2	7.3	1.619	0.430	10.822
25. Pharmaceuticals	6.6	8.3	1.619	0.271	10.822
26. Perfumes	7.0	7.9	1.619	8.184	10.822
27. Other chemicals	6.3	8.6	1.619	0.188	10.822
28. Non-metallic products	3.6	9.2	1.930	0.227	4.986
29. Metallic products	8.1	8.8	2.218	0.887	9.402
30. Metallic products	7.8	6.3	2.218	0.244	9.402
31. Machinery repair	7.3	9.0	2.218	0.193	5.058
32. Electric machinery	7.0	10.1	2.218	0.179	5.058
35. Manufacturing	5.6	7.4	2.218	0.180	10.344

Note: The symbols found in this table are explained in the text.

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