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ABSTRACT

In this paper we explore the incidence of a sector specific minimum wage in a two sector Harris-Todaro model with intersectorally mobile capital. We note the absence of work on functional incidence in the Harris-Todaro literature, which in light both of Harberger's work and policy issues in LDCs seems a natural avenue to explore. Analytical results similar to those of Harberger for the incidence effects of a partial factor tax on the wage rentals ratio are obtained for the impact of a sector specific minimum wage. In addition to the output and substitution effects in Harberger's analysis of a partial factor tax, a third term reflecting the endogenously generated unemployment enters in the Harris-Todaro case. This improves the position of labour under a sector specific minimum wage due to the increase in the effective economy-wide capital labour ratio from the unemployment generated. We also explore the functional incidence issue numerically using general equilibrium computational techniques and data for Mexico due to Kehow and Serra. In a number of the calculations reported, capital more than bears the income loss from unemployment caused by the sector specific minimum wage. This is an opposite conclusion to empirical incidence analyses of partial factor tax incidence.

I. Introduction

In this paper, we explore the incidence of a sector specific minimum wage using the framework outlined by Todaro (1969), Harris and Todaro (1970)[1]. In a Harris-Todaro model, a fixed wage in one sector is prespecified with the wedge between factor prices across sectors being endogenously determined. Our approach is related to Harberger's (1962) two sector analysis of a partial factor tax. In a Harberger model an ad valorem wedge between the prices paid for the taxed factor in the two sectors occurs. While these two forms of distortion are closely related, important differences occur between them. Government receives the proceeds of the distortion in the Harberger model whereas in Harris-Todaro these proceeds accrue to urban labour. Endogenous unemployment is generated in a Harris-Todaro model through the equilibrium condition of an equal expected wage across the sectors, while in the Harberger model full employment occurs. We explore these similarities and differences here using both an analytical and a computational approach.

The motivation for our paper is that, to date, the Harris-Todaro literature has been oriented towards efficiency issues, primarily analyzing what policy offsets for a Harris-Todaro distortion are desirable. There is little or no discussion of either what the efficiency costs are of such a distortion, or what distributional impacts are involved. These, however, are the issues which would seem natural to someone working on Harris-Todaro models with a background in the Harberger literature. It may be the case, for instance, that despite the unemployment induced by the distortion that the free market wage rate increases by enough that capital bears the burden of the resulting income loss. This would contrast with the

[1]See also Bhagwati and Srivavasan (1974, 1975), Corden and Findlay (1975), Stiglitz (1974), Calvo (1978), Schweinberger (1979), Khan (1980), and Neary (1981). Although most Harris-Todaro models implicitly condider sector specific capital, we extend the analysis to incorporate intersectorally mobile capital.

Harberger conclusion that capital bears the burden of differential capital income taxation in the U.S.

Harberger's approach to the analysis of distortions in two sector models is to use local approximations and take total differentials through the general equilibrium system. By substituting and using Cramer's rule, Harberger obtains an expression for the impact of a partial factor tax on the (net of tax) wage-rentals ratio. As noted by Mieskowski [1967], Harberger's expression can be decomposed into output and substitution effects. The substitution effect is of unambiguous sign, with the output effect depending on the relative factor intensities of the two sectors. Harberger's analysis suggests the unambiguous qualitative result that a tax on capital in the capital intensive industry will depress the price of capital relative to labour. Whether capital fully bears the burden of the tax depends on parameter values in production and demand functions. A similar approach and decomposition occurs in the Johnson-Mieskowski [1970] two sector analysis of trade unions.

When the Harris-Todaro sector specific minimum wage is analyzed in a Harberger framework, a similar expression is obtained for the impact of a sector specific minimum wage on the wage of the free sector relative to the rental price of capital. The difference is that in addition to the output and substitution effects a third term generated by the endogenous unemployment enters. In analyzing the impacts of a sector specific minimum wage in the labour intensive industry, the additional term is of different sign to the output and substitution effects since unemployment increases the effective capital-labour ratio and tends to raise the real wage. Thus unambiguous qualitative predictions as to the impact on relative factor prices are more difficult for a sector specific minimum wage than for a partial factor tax.

Like Harberger, we therefore also explore the incidence question numerically in a Harris-Todaro type model. We analyze the distributional impacts of a sector specific minimum wage distortion using general equilibrium computational techniques for Harris-Todaro general equilibrium models recently outlined in Imam and Whalley (forthcoming). To provide an empirical context for our calculations we use data for Mexico drawn from recent work by Kehoe and Serra [1981]. In a final section of the paper we report our calculations and offer an interpretation of their policy significance. In a number of the cases reported, capital more than bears the burden of the income loss from unemployment caused by the Harris-Todaro distortion. This suggests that both because of the presence of unemployment in equilibrium and that the urban labour receives the proceeds of the distortion, functional incidence impacts in Harberger and Harris-Todaro models are typically quite different.

II. A Two Sector Harris-Todaro Model in a Harberger Framework

The Harris-Todaro formulation of LDC labour market activity asserts that migration of labour from the rural to the urban sector will continue as long as expected wages in these sectors are different. If P_L is the endogenously determined rural wage rate and P_{L_u} is the institutionally fixed urban wage rate, the labour market equilibrium condition in a Harris and Todaro model is:

(1) $$P_L = \gamma \cdot P_{L_u}$$

where γ is the probability of being employed in the urban sector. With risk neutral labour supply behavior, this probability will equal the ratio of the employed labour in the urban sector to the total labour force seeking employment in that sector. If P_{L_u} is above P_L, the equilibrium condition implies that γ will be less than unity and unemployment will occur. Thus, in contrast to the traditional minimum wage models of Hagen [1958], Bhagwati and Ramaswami [1963], Jones [1971], or Bhagwati and Srinivasan [1971], unemployment is consistent with equilibrium in Harris-Todaro models. The fixed higher wage in the urban sector is sustained by an equilibrium level of unemployment; unemployment does not disappear by reverse migration since repeated drawings occur from the pool of employable labour in the urban sector.

The functional incidence question we analyze is the impact of a sector specific minimum wage on the wage to rental ratio in the free sector, in the case where capital is intersectorally mobile. If we can also determine the changes in factor use we can calculate whether labour as a class is better off or worse off in the presence of the distortion.

To do this we follow Harberger's approach in his analysis of the U.S. corporate tax. Harberger uses a traditional two sector, two factor formulation and employs a number of localization assumptions to determine the change in both the capital allocation by sector and the equilibrium price of capital resulting from the imposition of a surtax on the return to capital in one sector (X). Harberger assumes, as a local approximation, that demands for the two products X and Y depend only on relative prices, and ignores the income loss due to the deadweight loss of the tax. Revenues from the tax are assumed redistributed to households in a way which does not affect demands; implicitly an assumption of identical homothetic preferences.

In analyzing a Harris-Todaro distortion we use an approach similar to Harberger.[1] We suppose that a sector specific minimum wage P_{L_u} above the free market wage (P_L) is introduced in sector X. We ignore income effects

[1] See also appendix B to Shoven and Whalley (1972) where the Harberger partial factor tax analysis is presented in a form similar to that used here.

on demands from induced unemployment as a local approximation[1] and make the assumption that the quantity of X demanded depends only on P_X/P_Y.

Differentiating the demand function for X gives:

$$\frac{dX}{X} = E \frac{d(P_X/P_Y)}{(P_X/P_Y)} \tag{1}$$

where E is the price elasticity of demand for X. Choosing units for X and Y such that $P_X = P_Y = 1$ before the sector specific minimum wage is introduced, a local approximation of (1) gives

$$\frac{dX}{X} = E\,(dP_X - dP_Y). \tag{2}$$

We assume a production function for sector X

$$X = F(K_X, L_X) \tag{3}$$

which is continuous, differentiable, and homogeneous of degree one. Taking a total derivative through (3) yields

$$dX = \frac{\partial F(K_X, L_X)}{\partial K_X}\, dK_X + \frac{\partial F(K_X, L_X)}{\partial L_X}\, dL_X \tag{4}$$

Dividing both sides by X, this can be written as

$$\frac{dX}{X} = \frac{\frac{\partial F(K_X, L_X)}{\partial K_X} K_X}{X} \cdot \frac{dK_X}{K_X} + \frac{\frac{\partial F(K_X, L_X)}{\partial L_X} L_X}{X} \cdot \frac{dL_X}{L_X} \tag{5}$$

or

$$\frac{dX}{X} = f_K \frac{dK_X}{K_X} + f_L \frac{dL_X}{L_X}, \tag{6}$$

where f_K, f_L may be interpreted as the relative factor shares in sector X.

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[1]The inclusion of an income term in the demand functions complicates the final 3 equation system (Equation 28) which represents the model, but does not significantly change the qualitative results. The empirical section which follows, numerically solves general equilibrium models in which, since full equilibria are computed, incomes effects are present.

In sector Y the definition of the elasticity of substitution between labour and capital, S_Y, implies that

$$\frac{d(K_Y/L_Y)}{(K_y/L_y)} = S_y \frac{d(P_K/P_L)}{(P_K/P_L)} \quad . \tag{7}$$

The free market wage, P_L, is taken to be the price of the numeraire, in terms of which other prices, including the minimum wage, are expressed. Units for labour and capital before the introduction of minimum wage are so chosen that $P_L = P_K = 1$. A local approximation of (7) gives

$$\frac{dK_Y}{K_y} - \frac{dL_Y}{L_Y} = S_Y(dP_K - dP_L) . \tag{8}$$

dP_K and dP_L are the changes in the price of capital and labour relevant for production decisions in sector Y. We define wages in the minimum wage sector as $P_{L_u} = P_L + \bar{w}$.[1] Since $P_L = 1$, the relevant change in the price of labour in sector X is thus $\bar{w}$; the equation analogous to (8) for sector X is given by

$$\frac{dK_x}{K_X} - \frac{dL_X}{L_X} = S_X(dP_K - \bar{w}). \tag{9}$$

The free market price of labour is taken to be unity both in the presence and absence of the Harris-Todaro distortion, and thus

$$dP_L = 0 . \tag{10}$$

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[1] In the original Harris and Todaro [1970] model the minimum wage is defined as a fixed marginal product of labour in terms of the manufactured good. Subsequent contributors to this literature have defined minimum wages in different ways, keeping the essential flavour of the Harris-Todaro formulation. For example, Khan [1980] defines the minimum wage as a given percentage above the unconstrained wage. Following Schweinberger [1979], we define minimum wages as an absolute difference between the sector wage rates. This formulation appears to us to be closest to Harberger's (1962) treatment of a partial factor tax. Since we are considering a local approximation, however, the specification of the minimum wage in the Harberger type system does not affect the analytics.

By the assumption of full employment of capital, and the initial full employment of labour

$$dK_Y = -dK_X \tag{11}$$

$$dL_Y = -dL_X - U \tag{12}$$

are obtained where U is the unemployment generated in sector X through the sector specific minimum wage.

According to the Harris-Todaro formulation the probability of being employed in sector X, γ, is

$$\gamma = \frac{L_X}{L_X + U} \tag{13}$$

where L_X is labour employed in X. As we assume local analysis for a sector specific minimum wage, the induced reallocation of labour is small. Using the Harris-Todaro equilibrium condition, along with the condition that $dP_L = 0$, gives

$$\gamma(\bar{w}+1) = 1 \tag{14}$$

which implies that

$$U = \bar{w}L_X \tag{15}$$

Substituting (15) into (12) gives

$$dL_Y = - dL_X - \bar{w}L_X \tag{16}$$

The production function of sector Y

$$Y = G(K_y, L_Y) \tag{17}$$

is also assumed continuous, differentiable, and homogeneous of degree one. These properties, along with competition in the factor markets, guarantee that factor payments just exhaust revenue, or

$$P_yY = P_LL_Y + P_KK_Y \tag{18}$$

Taking a total derivative of each side of (18) and appealing to a local approximation gives

$$P_YdY + YdP_Y = P_LdL_Y + L_YdP_L + P_KdK_Y + K_YdP_K \tag{19}$$

The equation analogous to (4) for sector Y is

$$dY = \frac{\partial G(K_Y, L_Y)}{\partial L_Y} dL_Y + \frac{\partial G(K_Y, L_Y)}{\partial K_Y} dK_Y \tag{20}$$

Noting that competition implies that the marginal product of labour in Y is (P_L/P_y) and that of capital is (P_K/P_Y), (20) may be written as

$$dY = \frac{P_L}{P_Y} dL_Y + \frac{P_K}{P_Y} dK_Y$$

or

$$P_Y dY = P_L dL_Y + P_K dK_Y \ . \tag{21}$$

Subtracting this result from (19) gives

$$Y dP_Y = L_Y dP_L + K_Y dP_K \tag{22}$$

Dividing both sides by Y and recalling that the initial prices of both factors and outputs are assumed to be unity, one gets

$$dP_Y = g_L dP_L + g_K dP_K \tag{23}$$

where g_L, g_K are the relative factor shares in sector Y. Performing a similar procedure for sector X results in the relation

$$dP_X = f_L \bar{w} + f_K dP_K \tag{24}$$

Equations (24), (23) and (10) can be substituted into equation (2) giving

$$\frac{dX}{X} = E[f_K dP_K + f_L \bar{w} - g_K dP_K] \tag{25}$$

Equating the right-hand term of (6) and (25) we get

$$E f_L \bar{w} = E(g_K - f_K) dP_K + f_L \frac{dL_X}{L_X} + f_K \cdot \frac{dK_X}{K_X} \tag{26}$$

By substituting (16), (11) and (10) into (8) one obtains

$$\frac{K_X(-dK_X)}{K_Y K_X} - \frac{L_X(-dL_X - \bar{w} L_X)}{L_Y L_X} = S_Y dP_K \tag{27}$$

Using equation (9), (26) and rearranging the terms in (27), the following system of three equations is derived:

$$Ef_L\bar{w} = E(g_K - f_K)dP_K + f_L \frac{dL_X}{L_X} + f_K \frac{dK_X}{K_X}$$

$$\frac{\bar{w}L_X}{L_Y} = S_Y \cdot dP_K - \frac{L_X}{L_Y}\frac{dL_X}{L_X} + \frac{K_X}{K_Y}\frac{dK_X}{K_X} \tag{28}$$

$$-S_X\bar{w} = -S_X \cdot dP_K - \frac{dL_X}{L_X} + \frac{dK_X}{K_X}$$

The solution for dP_K, can be achieved by applying Cramer's rule to (27). That is,

$$dP_K = \bar{w} \cdot \frac{\begin{vmatrix} Ef_L & f_L & f_K \\ \frac{L_X}{L_Y} & -\frac{L_X}{L_Y} & \frac{K_X}{K_Y} \\ -S_X & -1 & 1 \end{vmatrix}}{\begin{vmatrix} E(g_K - f_K) & f_L & f_K \\ S_Y & -\frac{L_X}{L_Y} & \frac{K_X}{K_Y} \\ -S_X & -1 & 1 \end{vmatrix}} \tag{29}$$

This can be solved for dP_K giving

$$dP_K = \frac{\bar{w}[Ef_K(\frac{K_X}{K_Y} - \frac{L_X}{L_Y}) - S_X(\frac{f_L K_X}{K_Y} + \frac{f_K L_X}{L_Y}) - \frac{L_X}{L_Y}]}{E(g_K - f_K)(\frac{K_X}{K_Y} - \frac{L_X}{L_Y}) - S_Y - S_X(\frac{f_L K_X}{K_Y} + \frac{f_K L_X}{L_Y})} \tag{30}$$

The elasticities of substitution, S_X, S_Y and price elasticity, E, are negative. Therefore the three terms of the denominator are all positive:

$$- S_X(f_L \cdot \frac{K_X}{K_Y} + f_K \cdot \frac{L_X}{L_Y}) > 0$$

$$- S_Y \qquad > 0$$

$$E(g_K - f_K)(\frac{K_X}{K_Y} - \frac{L_X}{L_Y}) \qquad > 0$$

The signs of the first two are quite obvious. If the sector X is capital intensive, $\frac{K_X}{K_Y} > \frac{L_X}{L_Y}$, then $g_K < f_K$, and vice versa if X is labour intensive. The sign of the third term above will therefore also be positive. As in Harberger (1962), therfore, the denominator is always positive irrespective of the factor intensity of the minimum wage sector.

The first two terms in the numerator are respectively identified by Mieskowski as the output and substitution effects. The signs of these effects are as follows:

$$- S_X(f_L \cdot \frac{K_X}{K_Y} + f_K \frac{L_X}{L_Y}) > 0$$

$$Ef_L(\frac{K_X}{K_Y} - \frac{L_X}{L_Y}) \qquad \gtrless 0$$

Since E is negative, the output effect will be negative if sector X is capital intensive; otherwise it is positive. The third term in the numerator can be factored out as $-\bar{w}\frac{L_X}{L_Y}$ which can be rewritten from (15) as $-\frac{U}{L_Y}$. We denote this term as the unemployment creation effect, which is always negative. Taking all three terms, the sign of the numerator becomes ambiguous. With a sector specific minimum wage in the labour intensive industry, capital will gain from the output and substitution effects, but lose from the unemployment creation effect. For a given value of $\bar{w}$, if the sector is small the unemployment creation effect is also small since L_X/L_Y tends to zero.

The issue of whether or not labour bears the burden of a sector specific minimum wage is therefore different from the tax incidence question posed by Harberger. In the tax case, revenues are transferred to the government and Harberger's conclusion that capital bears the burden of the corporate tax is based on a numerical calculation that the change in capital's price times the economy-wide endowment of capital equals tax revenues. In the sector specific minimum wage case, no revenues are transferred to the government but unemployment occurs. The incidence question is thus whether labour or capital bears the burden of the income loss from unemployment. The analogue of the Harberger approach would be to calculate the changes in factor prices and labour allocation by sector, and compare factor reward changes to the income loss from unemployment. The localization assumptions in the Harberger approach, however, can be relaxed by using numerical general equilibrium techniques to explicitly solve for equilibria in the with and without distortion regimes. Thus, to investigate whether capital or labour bears the burden of sector specific minimum wages, we use a numerical general equilibrium simulation similar to Shoven and Whalley (1972) on which we report in the following section.

III. Numerical Calculations of Functional Incidence

In order to numerically investigate functional incidence of a sector specific minimum wage we have used the techniques outlined in Imam-Whalley (forthcoming) which apply computational fix point algorithms to general equilibrium models incorporating sector specific minimum wages. We have adopted particular functional forms for production and demand functions in order to investigate the functional incidence question. We use data for Mexico drawn from Kehoe and Serra [1981] since these are readily available, and in addition Mexico has high rates of unemployment and underemployment of labour and is often cited as an example of the Harris-Todaro sector specific minimum wage distortion. On the production side of the model CES production functions are assumed, denoted by,

$$Y_i = A_i[\delta_i K_i^{-\rho_i} + (1-\delta_i)L_i^{-\rho_i}]^{-\frac{1}{\rho_i}} \qquad i = u,R$$

where S_i, the elasticity of factor substitution, equals $\frac{1}{1+\rho_i}$.

On the demand side we use demand funceions derived from CES utility functions denoted by

$$X_i = \frac{\alpha_i I}{P_i^{\epsilon} \cdot \sum_j \alpha_j P_j^{1-\epsilon}} \qquad i = u,R.$$

The implicit assumption underlying this specification is one of identical homothetic preferences. We choose share parameters for these functions using the calibration technique common in recent applied general equilibrium analysis and outlined in Mansur and Whalley (1981). This involves assuming the data for Mexico characterize an equilibrium in the presence of a sector specific minimum wage with unemployment in the urban sector. Share parameters for demand and production.

functions are chosen such that the specification will replicate these data as an equilibrium solution for the model. Values for $\rho_i(S_i)$ and ε are prespecified in the process. With all demand and production function parameters determined in this way, the model is then solved for the equilibrium in which the distortion is absent.

Table 1 reports the data used for Mexico. These involve two sectors (urban and rural) and two factors of production; the urban sector is relatively labour intensive. We use data on national unemployment rates, from which we infer the level of unemployment in the urban sector. No unemployment occurs in the rural sector. The assumed national unemployment rate thus implies a sector specific minimum wage rate in the urban sector. Official data indicate unemployment rates in Mexico are in the neighbourhood of 7-8%, but unofficial estimates of combined unemployment/underemployment are in the range of 30-40%. In our calculations we perform sensitivity analysis using both of these.

In Tables 2 and 3 general equilibrium calculations of the impacts of removing sector specific minimum wages are reported for a number of alternative specifications. Across the cases described in Table 2 production function and demand parameters are changed along with the assumed unemployment rate characterizing equilibrium in the presence of the sector specific minimum wage. The unemployment reported is the assumed value of the national unemployment rate. In making our calculations this is converted into the specific unemployment rate. In each case the sector specific minimum wage is abolished and the pre- and post-change equilibria are compared. In all cases units are chosen such that the pre-change situation has a wage rate of unity. Labour's share in national income is the same, since the assumed unemployment rate does not affect the income

TABLE 1

Factor Allocations by Sector in Kehoe and Serra's [1981] Data for Mexico

(1973 bill. of pesos)

	Urban Sector	Rural Sector	Total
Capital	650	270	920
Labour	480	160	640
Value Added	1130	430	$\boxed{1560}$

TABLE 2

Case Descriptions for General Equilibrium Calculations of Impacts of Removing Sector Specific Minimum Wage

Case Number	National Unemployment Rate in Benchmark Data (%)	S_u	S_R	ε	Other Features
1	7.5	.5	.5	.75	
2	15.0	.5	.5	.75	
3	30.0	.5	.5	.75	
4[1]	7.5	1.0	1.0	.75	
5	7.5	2.0	2.0	.75	
6	7.5	2.0	.5	.75	
7	7.5	.5	2.0	.75	
8	7.5	.5	.5	3.0	
9	7.5	.5	.5	.25	
10	7.5	.15	.5	.25	
11	30.0	.15	.5	.25	
12	7.5	.5	.5	.75	As case 1, except that the sector specific minimum wage applies in rural sector.

[1] For computational convenience the Cobb-Douglas unitary elasticities are approximated in our code for CES functions by using values of 0.999.

TABLE 3

General Equilibrium Incidence Impacts of Removing Sector Specific Minimum Wage

	(1) Free Market Wage/Rental Ratio	(2) Labour's Share in National Income	(3) Change in The Value of Employment Labour[1] (Bill. Pesos)	(4) Change in Labour's Reward (-ve indicates loss from removing minimum wage) (Bill. Pesos)
A. Equilibrium In Presence of Sector Specific Minimum Wage	1.0	.41	—	0.0
B. Equilibria in the Absence of Sector Specific Minimum Wage				
Case No. 1	.93	.39	52.1	-45.1
Case No. 2	.85	.37	113.3	-96.2
Case No. 3	.72	.33	274.0	-178.8
Case No. 4	.99	.41	52.1	-0.4
Case No. 5	1.04	.42	52.1	+25.1
Case No. 6	1.05	.42	52.1	+31.3
Case No. 7	.96	.40	52.1	-26.5
Case No. 8	.93	.39	52.1	-45.7
Case No. 9	.93	.39	52.1	-45.4
Case No. 10	.76	.35	52.1	-154.4
Case No. 11	.35	.20	274.0	-415.5
Case No. 12	.93	.39	52.1	44.3

[1]These numbers differ in the column across the cases because the unemployment rate assumed in the presence of the sector specific minimum varies across the cases. Although different values assumed for unemployment rates across the cases do not change, the other characteristics of the with minimum wage equilibria remain the same.

of employed labour.

The results from Table 3 are consistent with the intuition yielded by the Harberger decomposition in the preceding section. The presence of a sector specific minimum wage in the labour intensive industry suggests that output and substitution of effects work against labour, but that the unemployment effect works in favour of labour. If the entry in column (4) is positive and equal to the positive entry in column (3), the conclusions is that labour bears the burden of the income loss from the sector specific minimum wage. If the entry in column (4) is zero, capital bears the burden of the income loss, and if the entry in column (4) is negative, capital more than bears the burden of the induced income loss.

In case 1 labour loses an amount close to the change in the value of employment if the sector specific minimum wage is removed. Put another way, labour gains from the sector specific wage by an amount close to the value of unemployment generated. Case 1 corresponds to a situation where capital more than bears the burden of the sector specific minimum wage.

Other cases correspond to the intuition yielded from the earlier formula. The change in dP_K is linear in $\bar{w}$ (and thus U) which is confirmed in cases 2 and 3. In the Cobb-Douglas case (case 4) capital fully bears the burden of the sectors specific minimum wage since factor shares are constant. Increasing the value of S_u strengthens the substitution effect and if large enough can offset the unemployment effect. This is confirmed in cases 5 and 6. Case 7 demonstrates that S_u and not S_R is the more important elasticity parameter, as would be suggested by the Harberger equation. Case 8 strengthens the output effect, but since factor intensities are not radically different this has little result. Case 9 weakens the output effect with a similar result. Cases 10 and 11 weaken both substitution and output effects with dramatic results from the unemployment effect. In Case 11 capital not only more bears the burden of the sector specific minimum wage, but labour's share in national income id doubled by the distortion. Case 12 finally switches the data between sectors so that the sector specific minimum wage is in the capital intensive rather than the labour intensive sector. The sign of the output effect changes, but this remains quantitatively small due to similar factor intensities by industry.

While more careful calculations are needed to select appropriate parameter values for actual LDCs to be analyzed, the results above indicate that a Harberger-type decomposition provides a useful dichotomy of the total effect of a sector specific minimum wage into constituent parts each of which has a natural interpretation. Because of the contrast in signs, labour can be made worse off or better off by a sector specific minimum wage, and capital can easily more than fully bear the burden of the distortion due to the unemployment effect. Whether such a result in fact turns out to be typical for LDCs awaits further investigation, although the sharp differences from Harberger's results are apparent from Table 3. Harberger concludes that capital bears the burden of a tax capital in the corporate sector. Because labour receives the difference between wage rates in the two sectors (unlike the capital tax case) and wage rates tend to rise with unemployment, it seems more likely that labour as a class can gain from a sector specific minimum wage, and leave capital bearing the burden of the induced income loss.

IV. Conclusion

In this paper we evaluate the functional incidence impacts of a sector specific minimum wage in a two sector, two factor Harris-Todaro model using both a Harberger and a computational general equilibrium approach. Using a formulation similar to that adopted by Harberger in his analysis of the U.S. corporate tax, it is possible to generate an expression for the impacts of a sector specific minimum on the free wage to rental ratio similar to that derived by Harberger for the partial factor tax case. A comparable decomposition of the total effect into an output and factor substitution effect is obtained, but with an extra unemployment effect working in favour of a higher wage-rentals ratio.

To numerically investigate the functional incidence issue we have applied general equilibrium computational techniques to data for Mexico due to Kehoe and Serra (1981). In a number of cases the impact of the sector specific minimum wage is to raise the wage rate. This we attribute to the impact of unemployment gererated through the sector specific minimum wage which raises the effective capital/labour ratio of the economy. In the cases we consider, this often dominates the substitution and output effects associated with the sector specific minimum wage, and capital bears, or more than fully bears, the burden of the income loss.

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1982

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