

# Labor Market Integration in the Presence of Social Capital

*Maurice Schiff*

Social capital raises productivity and falls with labor mobility. Because labor mobility generates a negative externality, integration of labor markets results in too much mobility, too low a level of social capital, and an ambiguous effect on welfare. Trade liberalization is superior to labor market integration because it reduces mobility and the negative externality associated with it.



## Summary findings

Labor market integration is typically assumed to improve welfare in the absence of distortions, because it allows labor to move to where returns are highest.

Schiff examines this result in a simple general equilibrium model in the presence of a common property resource: social capital.

Drawing on evidence that social capital raises productivity and falls with labor mobility, Schiff's main findings are that:

- Labor market integration imposes a negative externality and need not raise welfare.
- The welfare impact is more beneficial (or less harmful) the greater the difference in endowments is between the integrating regions.

- Whether positive or negative, the welfare impact is larger the more similar the levels of social capital of the integrating regions are and the lower the migration costs are.

- Trade liberalization generates an additional benefit—over and above the standard gains from trade—by reducing labor mobility and the negative externality associated with it. Trade liberalization is superior to labor market integration.

- The creation of new private or public institutions in response to labor market integration may reduce welfare.

Schiff shows that the welfare implications depend on two parameters of the model, the curvature of the utility function and the cost of private migration.

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This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to understand the link between market performance and welfare. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address [ltabada@worldbank.org](mailto:ltabada@worldbank.org). Policy Research Working Papers are also posted on the Web at <http://www.worldbank.org/research/workingpapers>. The author may be contacted at [mschiff@worldbank.org](mailto:mschiff@worldbank.org). November 1999. (26 pages)

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# **Labor Market Integration in the Presence of Social Capital**

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## **Labor Market Integration in the Presence of Social Capital**

### **1. Introduction**

This paper examines the welfare impact of labor market integration in the presence of social capital. A number of studies have shown that social capital affects social and economic well-being. For instance, in a paper on participation in civic organizations, Putnam (1995) describes studies showing that more civically active communities in the U.S.—those with high levels of social capital—are more successful in reducing poverty, unemployment, crime and drug abuse, and more successful in areas of education and health. Similarly, Narayan and Pritchett (1997) find that higher levels of associational membership are related to higher incomes in a sample of Tanzanian villages. And in his celebrated study of civic traditions in Italy, Putnam (1993) shows that the quality of local or regional public services is positively related to the degree of participation in “horizontal associations” or networks.

One implication of these studies is that a decline in social capital is likely to have serious economic and social consequences, including on violent crime (Lederman et al. 1999).<sup>1</sup> In fact, there is persuasive evidence in the U.S. of a significant decline in social capital, in terms of vibrancy of civil society, in recent decades (Putnam 1995). Participation in state and local elections declined by close to 25% from the early 1960s to 1990. And attendance at public school and town meetings, at political rallies, and serving on committees of local organizations, all fell by some 40% between 1973 and 1993. Similar or larger reductions occurred in the number of volunteers for civic organizations,

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<sup>1</sup> Their study covers 39 developed and developing countries and shows that trust reduces the incidence of violent crimes.

including the League of Women Voters, the Elks Club, and the Red Cross (off by 61% since 1970). And this decline took place despite the sharp rise in education levels—the best predictor of participation in civic organizations.

Participation in formal civic groups and organizations is one aspect of social capital. Others include social trust and norms of cooperative behavior. Evidence shows that these aspects of social capital have also declined in the U.S. For instance, the proportion of people saying most Americans can be trusted has shown a steady decline, falling by over a third, from 55-60% in the late 1950s and early 1960s to 35-39% in the 1990s (Knack and Keefer 1997).<sup>2</sup>

Moreover, Coleman (1988) argues that trust and cooperative behavior is low in the U.S. relative to other countries. For instance, he writes that in Jerusalem, children unattended by their parents are “looked after” by adults in the vicinity, and that this does not happen in most metropolitan areas of the United States. He concludes that families in Jerusalem have available to them social capital that does not exist in most metropolitan areas of the United States.

Similarly, given the high level of trust in their country, Danish citizens often leave their small children in strollers on the sidewalk while shopping or eating. This practice led to the arrest of a Danish mother visiting New York (N.Y. Times, May 22, 1997). She had not realized that she was no longer in a high-trust environment. New Yorkers, on

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<sup>2</sup> Knack and Keefer also find a positive relation between trust and civic norms on the one hand, and growth performance on the other, though not between membership in formal groups and growth.

the other hand, were shocked by her behavior: acting cooperatively in a non-cooperative environment can indeed be dangerous!<sup>3</sup>

Why the decline or low level of social capital in the U.S.? A hypothesis that is often suggested is labor mobility. Due to the enormous degree of mobility over a very extended geographical area, people in the U.S. tend to live further away from their family (parents, siblings, cousins, and others), childhood friends, and original community, and they tend to rely less on these support groups. For instance, data for the late 1980s and early 1990s indicate that some 20% of U.S. households move annually, something unheard of in other countries.

As for the decline over time, Putnam (1995) lists increased labor mobility as one of the major causes of the erosion of social capital in the U.S. He argues that residential stability is associated with greater civic engagement, while mobility uproots people and reduces civic participation. As Fannie Mae<sup>4</sup> advertises: “Neighborhoods are stronger when families are able to own their own homes.” And Hagan et al. (1996) find in a longitudinal study of adolescents in Toronto that multiple family moves have a deleterious effect on children’s emotional adjustment and educational achievement. They

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<sup>3</sup> Transactions take place within a social structure which determines the rewards and penalties for honesty and cheating (Becker 1974). A higher degree of mobility tends to weaken social ties, and transactions among less familiar agents are likely to result in more cheating, less trust, and higher transactions costs. Some of these issues are reviewed in detail in Zak and Knack (1998). An interesting example is the rotating credit association (ROCA), where members—who are typically unable to borrow from the formal banking system—put their contributions together and one of them (typically chosen at random) obtains the full sum. Over time, as this is repeated, all members get to borrow. ROCAs only work if the early recipients do not defect, and requires a high degree of closeness and trust and strong social sanctions, including ostracism (Laguette, 1998). ROCAs are consistently identified as a key resource for the creation of small businesses, as for instance in Asian immigrant firms in the U.S. (Light 1984). Given the success of ROCAs among immigrant groups in the U.S., attempts have been made to make them work among U.S. citizens. However, most attempts have failed—with defection of early recipients—because of weaker relations among participants and weaker social sanctions.

<sup>4</sup> Fannie Mae provides liquidity by creating a secondary market for mortgages. It buys mortgage loans from banks, packages them into securities and sells them, enabling banks to make more loans.

link this to the fact that leaving a community destroys established bonds, and deprives family and children of a major source of social capital.

This paper models the link between labor market integration, social capital and welfare. Following the empirical findings in the literature, labor mobility and social capital are assumed to exhibit a negative relationship. A central point of the paper is that a unit of labor's productivity and/or utility depend in part on the social capital characteristics of the group to which it belongs. Thus, movements of labor differ from movements of goods because people create attachments with those with whom they share values, language, culture, and more—i.e., with whom they share social capital.

The paper is organized as follows. The model is presented in Section 2. The solution in the absence of labor market integration is provided in Section 3. Section 4 presents the labor market integration solution. Section 5 provides the solution in the absence of the negative externalities associated with labor mobility, as well as the welfare loss due to these externalities. Comparisons with the free trade equilibrium are examined in Section 6. Section 7 looks at the impact of an increase in the area of the integrating labor market. Section 8 examines a situation where labor market integration results in the formation of alternative institutions. Section 9 concludes. An appendix provides derivations of results.

## 2. The Model

The objective in this paper is to examine the impact of an increase in generalized labor mobility across regions with similar incomes, and not unidirectional mobility from poorer to richer areas in South-North or rural-urban migration. In this model, labor moves



not because of regional income differences but because the supply of human skills is unevenly distributed over space. This seems reasonable for a country like the U.S. where many industries are concentrated spatially,<sup>5</sup> and labor movements are typically associated with local or regional demand shocks for specific skills.

Assume two “islands”  $i = 1, 2$ , which are identical except for the endowment of skills. Two-way migration is obtained by assuming different endowments of industry-specific skills in each island, low moving costs for labor and prohibitive moving costs for goods, say due to trade barriers. The assumption on relative moving costs of labor and goods is reversed in Section 5.

Assume that the initial population on both islands is  $n = 1$ . Denote by  $n_{ij}$  the proportion of natives of Island  $i$  living on Island  $j$  ( $i, j = 1, 2$ ). Before migration takes place,  $n_{11} = n_{22} = 1$ , and the proportion that migrates  $m = n_{12} = n_{21} = 0$ .

Each native of Island 1 (2) produces the same quantity of a single good  $H$  ( $h$ ). Each individual from Island  $i$  living on Island  $j$ ,  $I_{ij}$ , consumes  $H_{ij}$  and  $h_{ij}$  units of  $H$  and  $h$ , with utility given by

$$U_{ij} = H_{ij}^{\beta} + h_{ij}^{\beta}, \quad \beta < 1 \quad (1)$$

Output of  $H$  and  $h$  depends on a specific factor as well as on local public goods and services whose provision, based on the evidence provided in Putnam (1993, 1995), is positively related to the level of social capital. Alternatively, assume that output depends on the specific factor and on aspects of social capital such as the extent of trust and cooperation among individuals which, Knack and Keefer (1997) and Narayan and

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<sup>5</sup> Spatially concentrated industries include the computer industry in Silicon Valley and the Washington, D.C. area, aerospace in Southern California and Washington State, automobiles in the Midwest, movies in Hollywood, finance in New York city, and textiles in the South.

Pritchett (1997) have shown, lower transactions costs and improve economic performance. Thus,  $H$  ( $h$ ) is produced with human capital or skills  $K$  ( $k$ ) and social capital. Only natives of Island 1 (2) are endowed with skills of type  $K$  ( $k$ ). The production functions for  $H$  and  $h$  are  $H_{1j} = H(K, S_{1j})$  and  $h_{2j} = h(k, S_{2j})$ . Specifically,  $H_{1j} = K.S_{1j}$  and  $h_{2j} = k.S_{2j}$ . Without loss of generality, assume  $K = k = 1$ . Then

$$H_{1j} = S_{1j}, h_{2j} = S_{2j}; j = 1, 2. \quad (2)$$

Assume that the social capital  $S_{ij}$  of individual  $I_{ij}$  increases with the proportion  $n_{ii}$  of natives in the total population of island  $i$ , or equivalently, that it declines with the proportion  $m = 1 - n_{ii}$  of migrants in the total population. In other words, and as the evidence has shown, the lower the degree of mobility ( $m$ ) of the population, the higher the level of social capital because the proportion of those who have interacted for a long period of time and have established cooperative relations and trust is higher. This is supported by Durkin (1998) who argues that positive spillovers from a group-specific public good rise with the share of that group in the population. Specifically, assume that the level of social capital available to each native  $I_{ij}$  is equal to the number of potential interactions with other natives, i.e.,  $S_{ij} = n_{ii}$ .

An individual  $I_{ij}$  moving from Island  $i$  to Island  $j$  does not benefit from the same amount of social capital as on his/her original island because creating a network of social relations and building trust takes time, and some relations and experiences (e.g., those with family and childhood friends) cannot be recreated. For instance, natives in Island  $i$

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<sup>6</sup> We have assumed here that social capital enters the production function and not the utility function. Assuming the latter—as in Schiff (1992, 1998a, 1998b) and Schiff and Winters (1998)—implies that labor market integration generates two negative externalities (in production and utility rather than only in the former). This reinforces our results but has no qualitative effect on them.

may speak a different language than those in Island  $j$ . Hence, migrants gain partial access to the social capital available in their island of destination. Specifically, the social capital  $S_{ij}$  available to a migrant from Island  $i$  to Island  $j$  ( $i \neq j$ ) is a proportion  $\alpha \leq 1$  of the social capital of natives of Island  $j$ , i.e.,  $S_{ij} = \alpha \cdot n_{jj}$ . For instance, if the language spoken on island  $i$  differs from that on island  $j$ ,  $\alpha$  measures the degree of similarity between the two languages. We thus have:

$$S_{ij} = \alpha^{1-\delta_{ij}} n_{jj}, 0 < \alpha \leq 1; i, j = 1, 2, \quad (3)$$

where  $\delta_{ij} = 1$  for  $i = j$  (no migration) and  $\delta_{ij} = 0$  for  $i \neq j$  (migration).

Finally, assume that migration entails real resource costs (e.g., goods, time and/or depreciation of skills), and that an emigrant leaving Island  $i$  with 1 unit of skills arrives in Island  $j$  with  $\gamma$  units, where  $0 < \gamma \leq 1$ . Thus, given symmetry, migrants' productive efficiency falls to a proportion  $\varepsilon \equiv \alpha\gamma \leq 1$  of its original value.

### 3. No Labor Market Integration

In the absence of migration,  $i = j$ . Since  $H$  and  $h$  are not traded, it follows from equations (2) and (3) that  $H_{11} = S_{11} = n_{11} = 1$ ,  $h_{22} = S_{22} = n_{22} = 1$  and  $H_{22} = h_{11} = 0$ , and from equation (1) that utility is  $U_{11} = U_{22} = 1$ . The natives of Island 1 consume no  $h$  and the natives of Island 2 consume no  $H$ . The relative value of  $H$  (in units of  $h$ ) on island  $i$ ,  $P_i$ , equals the ratio of marginal utilities, which—from equation (1)—is:  $P_i \equiv (h_{ii}/H_{ii})^{1-\beta}$ . In the absence of migration,  $P_1 = 0$  and  $P_2 = \infty$ . Consequently, there is an incentive to migrate in both directions; that is, those with skills  $K$  have an incentive to move from Island 1 to Island 2 and those with skills  $k$  from Island 2 to Island 1.

#### 4. Labor Market Integration

Assume now that the two islands sign a treaty integrating their labor markets by allowing free movement of people between them. As long as the migration benefits are larger than their private costs—which is the case since  $P_1 = 0$  and  $P_2 = \infty$ —people from Island 1 (2) will take their skills  $K$  ( $k$ ) to Island 2 (1) in order to produce  $H$  ( $h$ ) there and exchange part of it for  $h$  ( $H$ ). Because people migrate in both directions, goods  $H$  and  $h$  are now available on both islands.

Migration has three effects on welfare. First, since both  $H$  and  $h$  are now produced and consumed on both islands, everyone benefits from diversification of consumption. On the other hand, migration leads to a private loss of productive skills due to real migration costs and private loss of social capital. And third, migration generates negative externalities which lower social capital

Natives from Island  $i$  maximize  $U_{ij}$ . This includes choosing the value of  $j$ , that is  $j \neq i$  (migrating) or  $j = i$  (not migrating). Given symmetry, we choose to focus on Island 1. There are nine equations and nine variables. The variables are:  $n_{11}$ ,  $m$ ,  $S_{11}$ ,  $S_{21}$ ,  $P_1$ ,  $H_{11}$ ,  $h_{11}$ ,  $H_{21}$  and  $h_{21}$ . The nine equations are:

Population identity: (i)  $n_{11} + m = 1$

Budget constraint of natives  $I_{11}$ : (ii)  $P_1[(1-m) - H_{11}] = h_{11}$

Budget constraint of migrants  $I_{21}$ : (iii)  $\alpha(1-m)\gamma - h_{21} = P_1 \cdot H_{21}$

Market clearing: (iv)  $n_{11}[(1-m) - H_{11}] = m \cdot H_{21}$

(iv')  $m[\alpha(1-m)\gamma - h_{21}] = n_{11} \cdot h_{11}$

First Order Conditions:

$$(v) P_1 = (h_{11}/H_{11})^{1-\beta}$$

$$(vi) P_1 = (h_{21}/H_{21})^{1-\beta}$$

Migration Equilibrium:

$$(vii) U_{11} = U_{12} \text{ or } H_{11}^\beta + h_{11}^\beta = H_{12}^\beta + h_{12}^\beta.$$

Given symmetry,  $h_{12} = H_{21}$  and  $H_{12} = h_{21}$ , so that

$$(vii) H_{11}^\beta + h_{11}^\beta = H_{21}^\beta + h_{21}^\beta.$$

Social Capital:

$$(viii) S_{11} = n_{11}$$

$$(ix) S_{21} = \alpha n_{11}$$

Equation (iv') is not independent of equations (ii), (iii) and (iv) because of Walras Law. The solution is given below and the derivation is provided in the Appendix. Recall that  $\varepsilon \equiv \alpha\gamma$  is the amount of productive skills available to a migrant, with  $(1 - \varepsilon)$  being the loss of productive skills due to migration costs and private loss of social capital. The equilibrium number of natives  $n_{11}$  and of migrants  $m$  is

$$n_{11} = \frac{\varepsilon^{\frac{\beta}{\beta-1}}}{1 + \varepsilon^{\frac{\beta}{\beta-1}}}, \quad (4)$$

$$m = \frac{1}{1 + \varepsilon^{\frac{\beta}{\beta-1}}}. \quad (5)$$

Note that since  $\varepsilon \leq 1$  and  $\beta < 1$ ,  $n_{11} \geq m$ : no more than half the population of each island migrates. Since the case of  $n_{11} = m + c > m$  ( $c > 0$ ) is identical to (a mirror image of)  $n_{11} = m - c < m$ , except for the fact that in the latter case, resources are wasted in excess migration,  $n_{11} < m$  is never optimal. Note that when  $\varepsilon = 1$ , migration does not result in a private loss of productive skills,  $n_{11} = m = 1/2$ , and the two islands are identical following migration. The relative price of H (in units of h) is

$$P_1 = \varepsilon \leq 1. \quad (6)$$

That  $P_1 \leq 1$  is due to the fact that the supply of H is larger than the supply of h, both because  $n_{11} \geq m$  and because migrants experience a private loss of their productive skills. This is not the case for  $\varepsilon = 1$  where  $n_{11} = m = \frac{1}{2}$ ,  $P_1 = 1$  (equation 6), and  $H = h$ .

Consumption and utility are

$$H_{11} = H_{21} = \left( \varepsilon^{\frac{\beta}{\beta-1}} / (1 + \varepsilon^{\frac{\beta}{\beta-1}}) \right)^2 \quad (7)$$

$$h_{11} = h_{21} = \varepsilon^{\frac{2\beta-1}{\beta-1}} / \left( 1 + \varepsilon^{\frac{\beta}{\beta-1}} \right)^2 \quad (8)$$

$$U_{11} = U_{21} = H_{11}^\beta + h_{11}^\beta = \frac{\varepsilon^{\frac{2\beta^2}{\beta-1}} + \varepsilon^{\frac{2\beta^2-\beta}{\beta-1}}}{\left( 1 + \varepsilon^{\frac{\beta}{\beta-1}} \right)^{2\beta}} \quad (9)$$

From equation (9), it is clear that under labor market integration utility depends exclusively on parameters  $\varepsilon$  and  $\beta$ . Given symmetry and migration arbitrage, utility U is the same for all groups, i.e.,  $U_{11} = U_{21} = U_{22} = U_{12} \equiv U$ . Recall that in the absence of migration,  $U = 1$ . The values of  $\varepsilon$  and  $\beta$  for which  $U = 1$  (the ‘U=1’ contour) are shown in Figure 1. The contour ‘U = 1’ is in fact a horizontal line at  $\beta = \frac{1}{2}$ .<sup>7</sup> Thus, there are no gains (or losses) from migration when  $\beta = \frac{1}{2}$ , no matter what the value of  $\varepsilon$ .

It can be shown from equation (9) that  $U > 1$  below the line ‘U = 1’ where  $\beta < \frac{1}{2}$  (see Figure 1). Thus, labor market integration is beneficial for low values of  $\beta$  because marginal utility diminishes rapidly and the benefits of diversification are large. For instance, utility increases from 1 for  $\beta = \frac{1}{2}$  to 2 for  $\beta = 0$ . On the other hand,  $U < 1$  above the line ‘U = 1’ where  $\beta > \frac{1}{2}$ . Thus, labor market integration generates a welfare loss when  $\beta$  is large.

<sup>7</sup> From equation (9), for  $\beta = \frac{1}{2}$ ,  $U = (1/\varepsilon + 1)/(1 + 1/\varepsilon) = 1$  and is independent of  $\varepsilon$ .

The fact that welfare increases for low values of  $\beta$  can be given an alternative interpretation. If  $H$  and  $h$  were perfect substitutes, there would be no gain from diversification and migration would only involve costs. On the other hand, the greater the difference between  $H$  and  $h$ , the greater the gains from diversifying consumption. In other words, for any level of  $H$  and  $h$ , the greater the difference in their marginal utilities, the greater the benefits from diversification. The ratio of marginal utilities  $U_H/U_h = (h/H)^{1-\beta}$ . For  $\beta = 1$ ,  $U_H/U_h = 1$ ,  $H$  and  $h$  are perfect substitutes (with  $U = H + h$ ), and there are no gains from diversification. The higher the value of  $\beta$ , the greater the degree of substitution between  $H$  and  $h$ , and the smaller the benefits of diversification. As the value of  $\beta$  falls, the degree of substitution between  $H$  and  $h$  falls as well, and the benefits of diversification increase.

Note that a low degree of substitution between  $H$  and  $h$  implies a low degree of substitution between inputs  $K$  and  $k$ . Thus, if integration is between two “islands” or countries with similar labor endowments (with skills  $K$  similar to  $k$ ), the gains from diversification are likely to be small. If the countries have different types of labor endowments (e.g., farmers versus industrial workers) and produce different goods (agriculture versus manufactures), labor market integration is more likely to generate welfare gains.

What about the relationship  $\partial U/\partial \epsilon$  between private migration costs  $(1-\epsilon)$  and welfare? From Figure 1—and from equation (10) in Section 8 and Figure 2 below—we can see that  $\partial U/\partial \epsilon \geq 0$  for  $\beta \leq 1/2$  (where  $U \geq 1$ ). In other words, for  $\beta < 1/2$ ,  $U > 1$ , and the benefits of migration rise as the private migration costs  $(1-\epsilon)$  fall. This makes sense: if migration is beneficial, lower private costs—which result in more migration—is more

beneficial. For  $\beta > \frac{1}{2}$ ,  $U < 1$ , and  $\partial U / \partial \varepsilon < 0$ . In other words, if migration lowers welfare, then as private migration costs  $(1-\varepsilon)$  fall, migration increases, resulting in a greater welfare loss. In this case, a decrease in private migration costs results in immiserization due to the dominance of the negative externalities associated with increased migration.

Thus, whether positive or negative, the impact of migration on welfare increases with  $\varepsilon$ . In other words, whether beneficial or not, the impact of migration is larger the lower the real migration costs and the closer the social capital of the two “islands”.

In general, labor market integration has an ambiguous impact on welfare in the presence of the negative externality on social capital. If the externality were internalized, a political change allowing free movement of people across the islands would result in less migration and would unambiguously raise welfare. The equilibrium level of migration is higher than the welfare-maximizing one. This is likely to be especially important in a country such as the U.S. because it constitutes the largest and most integrated labor market (see Section 7).

What can the authorities do to raise welfare? Though a tax on mobility might help, it is unacceptable in a democratic society where freedom of movement is a fundamental right. An alternative is to subsidize length of residence. For instance, as mentioned in Section 1, homeowners are known to invest more than renters in their neighborhood, in terms of internal and external care of their homes, interaction with neighbors, beautification of public areas, and crime prevention. A subsidy on home ownership would thus help build social capital. This is the case in the U.S. where interest payments on the mortgage are tax deductible. An additional measure that would help



would be to make the capital gains tax on the sale of a house a declining function of the length of time of residence.

##### 5. Labor Market Integration in the Absence of Externalities

Comparing the equilibrium with and without externalities can help us further understand the impact externalities have on migration, social capital, consumption and welfare. It is also helpful in characterizing the equilibrium under free trade in Section 6. An absence of externalities associated with migration can occur if people in both “islands” are identical in terms of the attributes of social capital. For instance, in the case of two regions within a given country for which the only relevant characteristic of social capital is nationality, two-way migration will not affect social capital in either region. And if the only characteristic that matters is the identity of the ‘club’ one belongs to, including a church, social club or sports club, two-way migration by people belonging to the same club has no impact on social capital either.<sup>8</sup>

In those cases, social capital is not affected by migration and remains equal to 1 rather than  $(1-m)$ . Moreover, there is no private loss of social capital from migration either, i.e.,  $\alpha = 1$ . Replacing  $(1-m)$  by 1 and  $\alpha$  by 1 in the system of equations (i)-(ix), and solving it, we obtain the same solutions for  $n_{11}$ ,  $m$  and  $P_1$  as when externalities are present, but with  $\varepsilon \equiv \alpha\gamma$  replaced by  $\gamma \geq \varepsilon$ . Thus,  $n_{11}^N$ ,  $m^N$  and  $P_1^N$  values--where the superscript ‘N’ stands for “no externality”--are also given by equations (4), (5) and (6),

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<sup>8</sup> One can think of the characteristic shared by members of a “club” as a “club good.” Clubs include religious groups. These regularly internalize the externality associated with entry and exit from the club through prohibitions and sacrifice. This is examined by Iannaccone (1992) in a club-good model where members benefit from the religious and social activity of other members. Prohibitions and sacrifice may make all club members better off. Of course, if prohibitions are coercive and exit is

respectively, except for  $\varepsilon$  replaced by  $\gamma$ . Since  $\gamma \geq \varepsilon$ ,  $n_{11}^N \geq n_{11}$ ,  $m^N \geq m$  and  $P_1^N \geq P_1$ .

And  $H^N$ ,  $h^N$  and  $U^N$  are all larger in the absence of externalities. In the case of

externalities,  $H = n_{11}^2$  (equations 4 and 7). In this case,  $H^N = n_{11}^N \geq n_{11} > n_{11}^2 = H$ .

Similarly, with externalities,  $h = n_{11}^2 \cdot \varepsilon^{1/(1-\beta)}$  (equations 4 and 8) while  $h^N = n_{11}^N \cdot \gamma^{1/(1-\beta)} >$

$h$ . Thus,  $U^N > U$ .

For instance, assume  $\gamma = 1$  and  $\alpha = \beta = 1/2$ . For  $\beta = 1/2$ , welfare  $U = 1$  in the presence of externalities. Note that  $n_{11} = 2/3$ ,  $H = 4/9$  and  $h = 1/9$ . In the absence of externalities,  $n_{11}^N = m^N = 1/2$ ,  $H^N = h^N = 1/2$ , and  $U = 1.41$ . Thus, the externalities result in an 11% reduction (from 50 to 44.4%) in consumption of  $H$ , a 76% reduction (from 50 to 11.1%) in the consumption of  $h$ , and a 29% reduction in welfare (from 1.41 to 1).

## 6. Equilibrium under free trade

Mundell (1957) has shown the equivalence between the movement of goods and the movement of factors. On the other hand, a number of politicians and economists in the US and the EU support free trade while also advocating restrictions on migration. Bhagwati (1991, p.3) argues that this is due to a lack of consistent criteria by which the two issues are judged, and (pp. 5-6) that applying the utilitarian logic leads to the free migration solution. As we have seen in Section 4, this need not hold in the presence of social capital.

Moving goods differs from moving people because people create attachments with those with whom they share values and culture. Insofar as trade and migration are

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prevented, as in some sects, most members are likely to be worse off. For more on this, see Iannaccone (1998). In this model, the externality associated with mobility is not internalized.

substitutes (which is the case in this model and in the Heckscher-Ohlin one)<sup>9</sup>, trade liberalization generates an additional welfare gain by reducing or eliminating migration and the negative externality associated with it. So far, we assumed that, due to prohibitive trade barriers, H and h are not traded. Assume now that the trade barriers are removed, and that the physical costs of moving H and h are the same as those for moving people (1- $\gamma$ ). Then, the solution under free trade is  $U^{FT} = (n_{11}^N)^\beta \cdot (1 + \gamma^{\beta/(1-\beta)})$  where 'FT' stands for 'free trade' and  $n_{11}^N$  is the share of natives staying in their own island in the absence of externalities (see Section 5). This solution is the same as in Section 5, i.e.,  $U^{FT} = U^N$ . Thus,  $U^{FT} > U$ .

For instance, assume that both trade costs and private migration costs are zero, i.e.,  $\gamma = 1$ . Then, under free trade, goods and factor prices are equalized across islands and there is no incentive to migrate. Given symmetry, people on island 1 (2) produce one unit of H (h) and export half of it for half a unit of h (H). Thus, everyone consumes half a unit of H and h, and welfare is  $U^{FT} = 2/2^\beta > 1$ . For  $\beta = 1/2$ ,  $U^{FT} = 1.41$ . Under labor market integration,  $U = 1$  when  $\beta = 1/2$ . Thus, welfare is 41% higher under free trade than under free migration, as in Section 5. The reason for the higher welfare under free trade is that migration reduces the social capital of migrants and generates a negative externality on the social capital of those left behind, while trade does not.

Consequently, integration of markets for goods H and h is superior to labor market integration (assuming that trading costs are no larger than private migration

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<sup>9</sup> Markusen (1983) obtains complementarity between trade and migration by amending different features of the Heckscher-Ohlin model. Lopez and Schiff (1998) obtain complementarity for unskilled labor and substitution for skilled labor in a model with migration costs and financing constraints. In the present model, either labor or goods move—depending on which moving costs are lower—but not both.

costs). Thus, a policy directed at integrating goods markets is likely to generate a higher level of welfare than a policy aiming to integrate labor markets.

#### 7. Increasing the migration area.

Assume that instead of two “islands,” there are fifty “states”. People in each state are endowed with a unique skill and produce a unique good. The fifty goods enter symmetrically in everybody’s utility function which is the same for all and is now  $U_{ij} = \sum_r (H_{ijr})^\beta$ , with  $r = 1, \dots, 50$  representing the 50 goods. Assume the 50 states now allow free movement of people. This results in a much larger proportion of people migrating than in the two-island case because there are forty nine other states where the returns to one’s skills are higher and it takes vastly larger amounts of migration to arbitrage away the private migration benefits. Though social capital falls more in the large country, since the gains from diversification are larger, the welfare impact of increased mobility is ambiguous.

For instance, as shown in Section 4, in the symmetric two-island case, if there are no private migration costs ( $\alpha = \gamma = \varepsilon = 1$ ), then  $n_{11} = n_{22} = m = 1/2$ ; that is, 50% of the people remain on their own island and social capital is reduced by half. However, if the same conditions prevail in the case of 50 states, then  $n_{ii} = 1/50$  and  $m = 49/50$ ; that is, only 2% of people remain in their own state, 98% move and social capital is reduced by 98%.

Our model thus shows why the social support structure deteriorates to a larger degree in a large country than in a small one and hence why people tend to be more isolated in the former. And given the negative externalities, people will be too isolated

from the viewpoint of Pareto optimality. The problem exists in small countries as well but is more pronounced in larger countries such as the United States, Brazil or Russia. The problem would be expected to be most severe in the United States as it constitutes the largest and most fully integrated labor market.

## 8. Institutional Change

With the increased labor mobility associated with labor market integration, new institutions are likely to emerge in response to a greater demand for lower migration costs (higher  $\gamma$ ) and lower private social capital losses (higher  $\alpha$ ). For instance, if different languages are spoken in the two islands, the higher degree of inter-island labor mobility may lead authorities to include the other island's language in the school curriculum (raising  $\alpha$ ). It may also lead the authorities of both islands to cooperate on deep integration measures. These may include migration facilitation measures (raising  $\gamma$ ) such as eliminating requirements for visas (as is the case for many countries) and for work permits (as in the EU), and improvement in transport networks.

Other developments that are likely to facilitate labor mobility include the creation of hotel and restaurant chains which provide standardized services of predictable quality and enable travelers to feel in more familiar surroundings when away from home. These types of institutions help reduce the private loss of social capital (raise  $\alpha$ ) associated with increased labor mobility, though they are also likely to reduce mobility costs (raise  $\gamma$ ). Others institutions designed to lower mobility costs include private and public agencies providing information on distant labor markets,<sup>10</sup> moving companies, credit card

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<sup>10</sup> Rosenbloom (1988) examined the role of employment agencies and publicly sponsored labor exchanges in the integration of the U.S. labor market in the late 19<sup>th</sup> century. He found that though they

companies, the interstate highway system, and legislation to increase the inter-firm portability of pensions.

Private institutions will not arise unless they are profitable, i.e., unless the private value of the services is higher than the cost. But will they raise welfare? In analyzing institutional development, the main theoretical framework used in the early days of the cliometric school (1970s) was neoclassical economics. Under this approach, institutions developed optimally in response to market demand. Theoretical and empirical developments, including strategic interactions, asymmetric information, interdependence of agents' tastes, insecure property rights, and coordination problems, affected the development of cliometrics and led to the understanding that institutional development might not be optimal (Greif, 1997). In this paper, institutional development need not be optimal because of the negative externality on social capital associated with increased mobility.

If the externality is small, so that the private migration equilibrium is not much larger than the social optimum, then a new institution lowering migration costs and resulting in an increase in migration is likely to raise welfare. However, where migration externalities are large and the socially optimal migration level is significantly lower than the market equilibrium, then it is more likely that a new institution resulting in an increase in migration will lower welfare, even though it may be privately profitable.

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increased considerably in local markets, they played a small role in directing long-distance movements of labor; and real wage differentials between large cities persisted. They were higher in the Midwest than on the East Coast by some 20-25%, with no tendency toward convergence (though real wage rates in San Francisco converged toward eastern levels following completion of the transcontinental railroad). A truly national labor market only emerged in the 20<sup>th</sup> century when this gap fell by some 70-80%.

The welfare impact of a costless institutional change that raises  $\varepsilon$  is obtained by deriving  $U_{11}$  in equation (9) with respect to  $\varepsilon$ :

$$\begin{aligned} \frac{\partial U_{11}}{\partial \varepsilon} = & \frac{\beta}{\left(1 + \varepsilon^{\frac{\beta}{\beta-1}}\right)^{2\beta}} \cdot \left[ \left( \frac{2\beta}{\beta-1} \cdot \varepsilon^{\frac{2\beta^2-\beta+1}{\beta-1}} + \frac{2\beta-1}{\beta-1} \cdot \varepsilon^{\frac{2\beta^2-2\beta+1}{\beta-1}} \right) \right. \\ & \left. - \frac{2\beta}{\beta-1} \cdot \varepsilon^{\frac{1}{\beta-1}} \cdot \left( \varepsilon^{\frac{2\beta^2}{\beta-1}} + \varepsilon^{\frac{2\beta^2-\beta}{\beta-1}} \right) \left( 1 + \varepsilon^{\frac{\beta}{\beta-1}} \right)^{-1} \right] \end{aligned} \quad (10)$$

The  $(\varepsilon, \beta)$ -contour for which  $\partial U/\partial \varepsilon = 0$  is shown in Figure 2. The “ $\partial U_{11}/\partial \varepsilon = 0$ ” contour is a straight line at  $\beta = 1/2$  (where  $U = 1$ ). It can be shown from equation (10) that  $\partial^2 U/\partial \varepsilon \partial \beta < 0$ . Thus,  $\partial U/\partial \varepsilon > 0$  for  $\beta < 1/2$ , and  $\partial U/\partial \varepsilon < 0$  for  $\beta > 1/2$ , i.e., lower migration costs raise welfare if the benefits of diversification are large ( $\beta < 1/2$ ) and migration is beneficial.

In the case of institutional changes which costlessly reduce migration costs, such as elimination of visa and work permit requirements, these lower welfare for  $\beta > 1/2$ , raise welfare for  $\beta < 1/2$  and have no impact on welfare for  $\beta = 1/2$ . In fact, some of these reforms may entail administrative simplification and save resources. Any such gains must enter in the cost-benefit calculus of the reform. For instance, in the presence of such gains, a reform would *raise* welfare for  $\beta = 1/2$ .

What if institutional change is costly? Assume the cost of some change—say, an improvement in the inter-island transport system—is financed by general taxes unrelated to the use of the new transport system. Then private migration costs fall. Abstracting from transport improvement costs, welfare falls for  $\beta > 1/2$  and rises for  $\beta < 1/2$ . Taking transport improvement costs into account, welfare falls for  $\beta > 1/2$ , and the effect is ambiguous for  $\beta < 1/2$ . What if, instead of general taxes, a toll is levied such that

migration costs are unchanged. Then, migration is unchanged. Whether welfare rises or falls depends on whether toll revenues are larger or smaller, respectively, than the transport improvement costs.

## 9. Concluding Comments

In this paper, I have provided a simple model to explain the evidence on the inverse relation between labor market integration, on the one hand, and the level of social capital and social support structure, on the other. Given that the movement of labor generates a negative externality, labor market integration results in excessive labor movement, excessively low levels of social capital, too much isolation, and an ambiguous impact on welfare. This is particularly important for large and highly integrated labor markets such as that of the United States, and has implications for the integration of other labor markets, including the EU.

A positive welfare impact is more likely, the greater the gains from diversification. That is, gains are more likely, the greater the difference in labor endowments between the integrating countries or regions (e.g., skilled versus unskilled labor, or agricultural versus industrial workers). Whether labor market integration generates gains or losses, these are larger the closer the social capital of the people in the integrating regions and the lower the real migration costs. Insofar as trade liberalization reduces labor movements, it provides an additional benefit by reducing the negative externality associated with labor mobility. Finally, new institutions designed to lower mobility costs need not raise welfare.



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## Appendix

This appendix shows how equations (4) to (9) in the text are obtained.

$$(v), (vi) \Rightarrow H_{11}/h_{11} = H_{21}/h_{21} \quad (x)$$

$$(vii), (x) \Rightarrow H_{11} = H_{21}; h_{11} = h_{21} \text{ or}$$

$$H_{11} = H_{21} = h_{12}; h_{11} = h_{21} = H_{12} \quad (xi)$$

$$(ii), (iv) \Rightarrow n_{11}h_{11} = m \cdot H_{21}P_1 \quad (xii)$$

$$(v), (vi), (xii) n_{11}/m = H_{21}/h_{11}^\beta \cdot H_{11}^{1-\beta} \quad (xiii)$$

$$(xi), (xiii) \Rightarrow \frac{n_{11}}{m} = \left( \frac{H_{11}}{h_{11}} \right)^\beta \quad (xiv)$$

$$(1), (xiv) \Rightarrow n_{11} = \frac{\left( \frac{H_{11}}{h_{11}} \right)^\beta}{1 + \left( \frac{H_{11}}{h_{11}} \right)^\beta} = \frac{H_{11}^\beta}{h_{11}^\beta + H_{11}^\beta} \quad (xv)$$

$$(1), (xv) \Rightarrow m \frac{h_{11}^\beta}{h_{11}^\beta + H_{11}^\beta} \quad (xvi)$$

$$(ii), (iii), (xi) \Rightarrow P_1(1-m) = P_1H_{11} + h_{11} \left. \vphantom{P_1(1-m)} \right\} \Rightarrow P_1 = \varepsilon \quad (6)$$

and  $\alpha(1-m)\gamma = P_1H_{11} + h_{11}$

$$(v), (6) \Rightarrow \left( h_{11}/H_{11} \right)^{1-\beta} = \varepsilon \quad (xvii)$$

$$(xvii) \Rightarrow \left( H_{11}/h_{11} \right) = \varepsilon^{\frac{1}{1-\beta}} \quad (xviii)$$

$$(xv), (xviii) \Rightarrow n_{11} = \frac{\varepsilon^{\frac{\beta}{\beta-1}}}{1 + \varepsilon^{\frac{\beta}{\beta-1}}} \quad (4)$$

$n_{11} > m$ , but if  $\alpha = \gamma = 1 \Rightarrow n_{11} = m = 1/2$  and  $P_1 = 1$

$$(4), (i) \Rightarrow m = \frac{1}{1 + \varepsilon^{\frac{\beta}{\beta-1}}} \quad (5)$$

$$(iv), (xi), (4) \Rightarrow H_{11} = \left( \frac{\varepsilon^{\frac{\beta}{\beta-1}}}{1 + \varepsilon^{\frac{\beta}{\beta-1}}} \right)^2 = n_{11}^2 \quad (7)$$

$$(xvii), (7) \Rightarrow h_{11} = \frac{\varepsilon^{\frac{2\beta-1}{\beta-1}}}{\left( 1 + \varepsilon^{\frac{\beta}{\beta-1}} \right)^2} = n_{11}^2 \cdot \varepsilon^{\frac{1}{1-\beta}} \quad (8)$$

$$(1), (7), (8) \Rightarrow U_{11} = \left( \frac{\varepsilon^{\frac{\beta}{\beta-1}}}{1 + \varepsilon^{\frac{\beta}{\beta-1}}} \right)^{2\beta} + \left\{ \frac{\varepsilon^{\frac{2\beta-1}{\beta-1}}}{\left( 1 + \varepsilon^{\frac{\beta}{\beta-1}} \right)^2} \right\}$$

$$= n_{11}^{2\beta} (1 + \varepsilon^{\frac{\beta}{1-\beta}}) \quad (9)$$

Figure 1: Welfare (U)

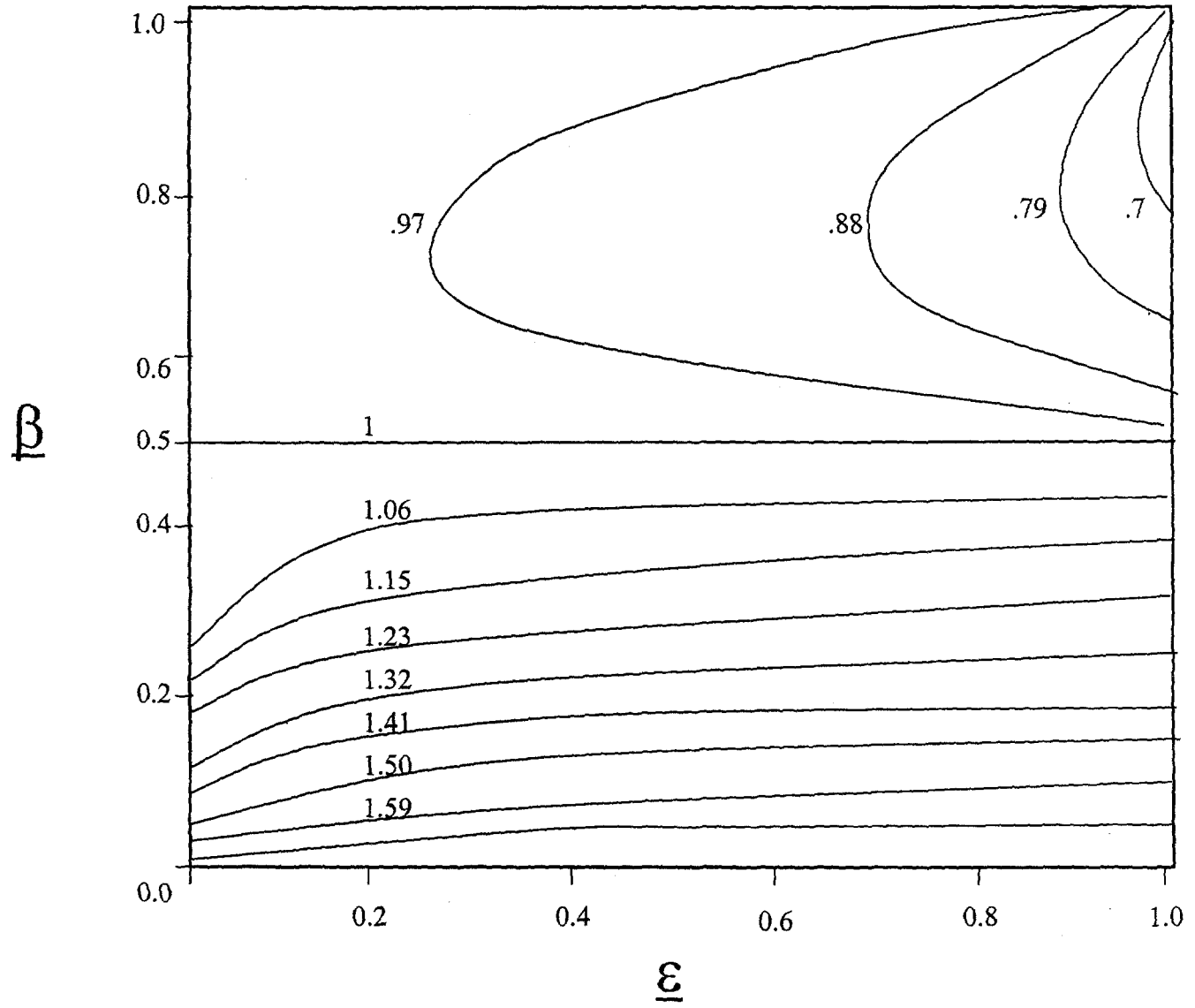
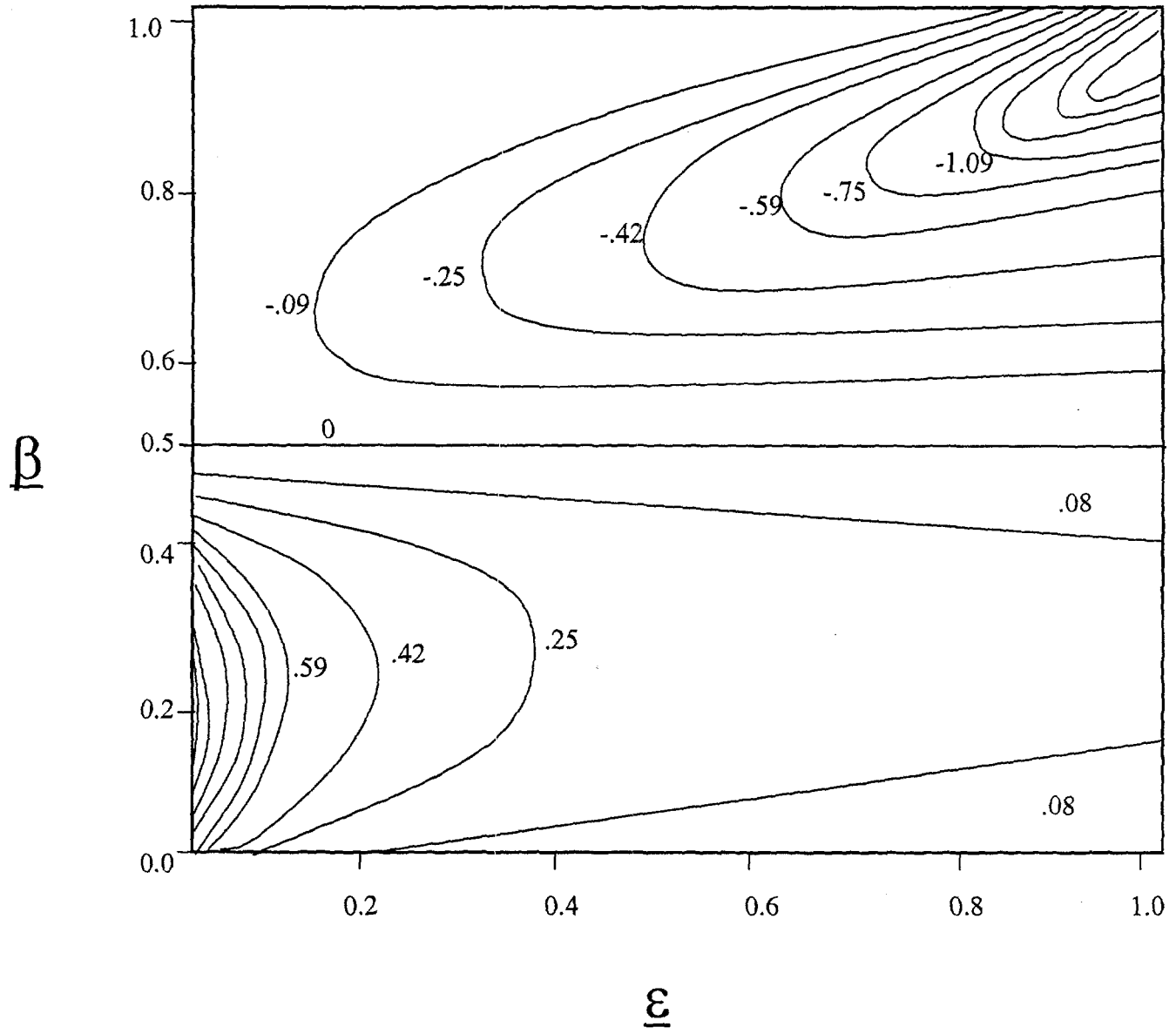


Figure 2: Change in Welfare ( $\partial U/\partial \epsilon$ )



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