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Macroeconomic Effects of Social Security Totalization Agreements

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The United States has signed international social security totalization agreements with 30 countries since 1978. For persons working in a foreign country during part of their careers, these agreements reduce double taxation on social security burdens and the risk of not qualifying for their home country's social security benefits. Hence, these agreements make it more attractive for individuals to temporarily work abroad and increase incentives of employers to invest in the foreign country and send their workers to oversee operations to partner countries. In this report, we consider the potential of international social security totalization agreements to affect macroeconomic outcomes. We explore the empirical evidence and use a theoretical framework to understand the channels through which these agreements affect economic activity.

The number of totalization agreements has continued to increase in recent years, with 13 of the 30 active agreements being implemented after the year 2000. The earliest agreements tended to be with other developed countries, mostly in Europe, but recent agreements have been signed with countries in East Asia, Eastern Europe, and Latin America. The number of workers covered by the agreements has correspondingly increased exponentially, although this is still a small fraction as a share of the U.S. economy. Statistics from the Social Security Administration (SSA) suggest that about 64,600 U.S. workers a year move abroad for an average of three years. This is much lower for foreign workers, but those data are too incomplete to make quantitative statements.

The expansion of the number of agreements corresponds with substantial changes in the world economy, in which multinational production — rather than international trade — has become the dominant way through which firms serve foreign consumers. U.S. workers covered by the agreements tend to have high incomes with about half of them earning more than $100,000 a year. This suggests that they are primarily managers and professionals. The employers most associated with workers covered under totalization agreements are large multinational firms, although there are also a substantial number of self-employed workers.

We find evidence that these agreements are associated with higher amounts of foreign direct investment by firms. The evidence is most robust for U.S. firms investing in foreign countries, which corresponds with the higher number of U.S. workers covered by these agreements than foreign workers.

We use a stylized macroeconomic model to generate predictions of the agreements' expected effects. To keep

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the model tractable, we consider a simplified setup, in which there are two countries; two types of employees, workers and managers with only the managers mobile across countries; and physical capital, which is also internationally mobile. To account for Social Security contributions, the model allows for payroll taxes proportional to earnings but capped at a country-specific threshold. This model captures key characteristics of the social security systems, which play a role in determining the totalization agreements' incentives for multinational firms' decisions.

The agreements affect the fraction of income to be paid in payroll taxes, and which country's social security system receives these taxes. The model shows that such an agreement, by decreasing the cost of relocating productive inputs across borders, increases the flows of foreign capital and investments that a country receives. The magnitude and the direction of the net effects depend on the characteristics of the countries involved. The increase in the share of foreign-controlled capital in a (host) country, given a decrease in the tax on foreign managers in that country, will be higher the more productive is the economy of country j, the less productive is country i, the higher is the ratio of the workforce size in country j relative to country i, and the higher is the country i's tax on local managers.

We studied three examples of partner countries: Chile, Germany, and Japan. The characteristics of these countries relative to the U.S. indicate that a totalization agreement's effects could be different across these countries. We used several data sources and the totalization agreements' characteristics to quantify the model to match the economies of the U.S., Japan, Chile, and Germany. We simulated the implementation of the totalization agreements between the U.S. and Japan and Chile. Additionally, we simulated a counterfactual situation in which the totalization agreement with Germany no longer holds.

The simulations predict that the totalization agreement increased the Japanese firms' incentives to reallocate their operations to the U.S., resulting in net inward investment flows from Japan to the U.S. For the case of Chile, however, the quantitative exercise indicates that the agreement made it more profitable for American firms to send managers and investments to their Chilean affiliates. Thus, indicating that the direction of the net effect depends on the relative characteristics of the partner country. The counterfactual exercise about Germany simulated the effects of removing the existing totalization agreement. This simulation predicts that if the agreement were removed, U.S. firms would decrease their investments in German affiliates and German firms would increase flows of capital and investment to the U.S. The results suggest that this agreement almost evens out German investments in the U.S. and U.S. investments in Germany, preventing the U.S. from being a net receptor of German investments.

Taken together, the empirical evidence and quantitative model suggest that totalization agreements facilitate the reallocation of productive factors and investments across borders by making it cheaper for multinational firms to expand their operations abroad. Increased economic production affects factor payments, workers incomes, and government revenues. The magnitudes and direction of those impacts depend on the combination of characteristics of the U.S. and the partner country. ❖

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