Technical Appendix for

Quid Pro Quo: Technology Capital Transfers for Market Access in China[*]

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1. Introduction

This appendix provides additional details for our paper "Quid Pro Quo: Technology Capital Transfers for Market Access in China."[1] Specifically, we provide more details about features added to the model to avoid computational problems when investment rates are low, and we discuss the algorithm used to solve the model. We also discuss some results from our sensitivity analysis that are not included in the main text. For those interested in trying their own experiments, we have also made the computer codes available at www.minneapolisfed.org. Finally, we list all inputs used in the benchmark models and the extensions associated with our sensitivity analyses. Since our focus is on trends in the time series, the tables in the main paper list inputs only for selected years.

2. The Model

Here, we discuss two additions to the model reported in the main text, which were included to help with the computation when investment levels are near zero. The first addition is a subsidy to technology capital investment, with the functional form chosen so that it is approximately equal to zero unless investment in technology capital is close to zero. The second modification is to add adjustment costs on all investments in order to avoid large initial jumps in investments. For completeness, we specify the entire model and note where the changes are made.

2.1. Multinational Problem

Multinational j maximizes worldwide dividends

$$\max \sum_t p_t \left(1 - \tau_{dt}\right) D_t^j, \tag{2.1}$$

where

$$D_t^j = \sum_i \left\{ \left(1 - \tau_{p,it}\right) \left(Y_{it}^j - W_{it} L_{it}^j - \delta_T K_{T,it}^j - X_{I,it}^j - \chi_i^j X_{M,t}^j \right) \right.$$
$$\left. - K_{T,i,t+1}^j + K_{T,it}^j \right\} + \tau_s \left(\bar{X}_{Mt}^j / \mu_t^j \right) X_{Mt}^j, \tag{2.2}$$

where $\chi_j^j = 1$ and $\chi_i^j = 0$ if $i \neq j$, and

$$K_{T,i,t+1}^j = \left(1 - \delta_T\right) K_{T,it}^j + X_{T,it}^j - \varphi \left(X_{T,it}^j / K_{T,it}^j \right) K_{T,it}^j$$

$$K_{I,i,t+1}^j = \left(1 - \delta_I\right) K_{I,it}^j + X_{I,it}^j - \varphi \left(X_{I,it}^j / K_{I,it}^j \right) K_{I,it}^j$$

$$M_{i,t+1}^j = \left(1 - \delta_M\right) \left(1 - h_{it}^j \left(q_{it}^j\right)\right) M_{it}^j + X_{M,t}^j g \left(\mu_t^j\right) - \varphi \left(X_{M,t}^j / \mu_t^j \right) \mu_t^j.$$

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[1] A separate appendix is also available with more details on our analysis of Chinese patents. The appendix and patent data are available at the Federal Reserve Bank of Minneapolis, www.minneapolisfed.org/research/sr/ sr488.html, and the University of Minnesota, www.econ.umn.edu/ holmes/research.html.

Recall that i indexes the FDI host country, Y_i^j is output produced by j in i, W_i is the wage rate in i which is paid to labor L_i^j, $K_{T,i}^j$ is tangible capital used by j in i and $X_{T,i}^j$ is investment in this capital, $K_{I,i}^j$ is intangible capital that is specific to the production location in i and $X_{I,i}^j$ is the associated investment that is expensed and thus subtracted entirely from taxable profits made in i, M_i^j is technology capital that is used in multiple locations and investment in technology capital X_M^j is expensed and subtracted from profits at home in country j, μ^j is total technology capital in j's home country (defined below), τ_d is a tax on dividends, $\tau_{p,i}$ is a tax on profits earned in country i, and τ_s is a subsidy to investment in technology capital.

Two new elements in this specification of the model relative to that reported in the paper are the subsidy τ_s and the adjustment costs $\varphi(\cdot)$. The subsidy to innovation is included to ensure that all countries do a nonnegative amount of investment in technology capital. Another interpretation is that it captures the idea that countries do not want to be completely dependent on foreign innovation. The adjustment costs smooth out changes in investment and help avoid sharp nonnegative values at the start of some of our simulations.

Outputs are given by

$$Y_{it}^j = A_{it}^j \left(N_{it} q_{it}^j M_{it}^j \right)^\phi \left(Z_{it}^j \right)^{1-\phi}$$

$$Z_{it}^j = \left(K_{T,it}^j \right)^{\alpha_T} \left(K_{I,it}^j \right)^{\alpha_I} \left(L_{it}^j \right)^{1-\alpha_T-\alpha_I},$$

where N_i is the number of locations in country i, q_i^j is the intensity level chosen by firms in j when investing in i, M^j is the stock of technology capital from j, Z_i^j is a composite input used by multinationals j in country i, and A_i^j is the level of technology parameter faced by multinationals j in country i.

2.2. Appropriators Problem

Appropriators in country i choose capital and labor to maximize local dividends

$$\max \sum_t p_t \left(1 - \tau_{dt} \right) \tilde{D}_{it} \tag{2.3}$$

where

$$\tilde{D}_{it} = \left(1 - \tau_{p,it} \right) \left(\tilde{Y}_{it} - W_{it} \tilde{L}_{it} - \delta_T \tilde{K}_{T,it} - \tilde{X}_{I,it} \right) - \tilde{K}_{T,i,t+1} + \tilde{K}_{T,it}. \tag{2.4}$$

In this case, outputs are given by

$$\tilde{Y}_{it} = A_{it} \left(N_{it} \tilde{M}_{it} \right)^\phi \left(\tilde{Z}_{it} \right)^{1-\phi}$$

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$$\tilde{Z}_{it} = \left(\tilde{K}_{T,it}\right)^{\alpha_T} \left(\tilde{K}_{I,it}\right)^{\alpha_I} \left(\tilde{L}_{it}\right)^{1-\alpha_T-\alpha_I},$$

and the equations governing the evolution of the capital stocks are

$$\tilde{K}_{T,i,t+1} = (1-\delta_T)\,\tilde{K}_{T,it} + \tilde{X}_{T,it} - \varphi\left(\tilde{X}_{T,it}/\tilde{K}_{T,it}\right)\tilde{K}_{T,it}$$

$$\tilde{K}_{I,i,t+1} = (1-\delta_I)\,\tilde{K}_{I,it} + \tilde{X}_{I,i,t+1} - \varphi\left(\tilde{X}_{I,it}/\tilde{K}_{I,it}\right)\tilde{K}_{I,it}$$

$$\tilde{M}_{i,t+1} = (1-\delta_M)\,\tilde{M}_{it} + \sum_j (1-\delta_M)\,h_{it}^j\left(q_{it}^j\right)M_{it}^j.$$

Recall that $\tilde{Y}_i$ is output, W_i is the wage rate paid to labor $\tilde{L}_i$, $\tilde{K}_{T,i}$ is tangible capital and $\tilde{X}_{T,i}$ is the investment in tangible capital, $\tilde{K}_{I,i}$ is intangible capital that is specific to the production location and $\tilde{X}_{I,i}$ is the investment in intangible capital, and $\tilde{M}_i$ is transferred technology capital that is obtained in a quid pro quo arrangement and can only be used in i. Here, as in the multinational problem, we include adjustment costs on investment. Note, however, that the appropriators do not invest in technology capital themselves, just in location-specific tangible and intangible capital.

The argument of the externality function $g(\cdot)$ appearing in the problem of multinational j is defined to be the ratio of foreign technology capital being used in j's country of origin:

$$\mu_t^j = M_{jt}^j + \tilde{M}_{jt} + \sigma_{jt}^{\frac{1}{\phi}} \sum_{\ell \neq j} q_{jt}^{\ell} M_{jt}^{\ell}$$

and depends on own capital, transferred capital, and effective stock of foreign capital. Note that μ^j is not a choice of the firm; it is taken as given when solving the firm's maximization problem.

2.3. Household Problem

The household problem is unchanged. We repeat it here for completeness. Households choose sequences of consumption C_{it}, labor L_{it}, and assets B_{it+1} to solve the following problem:

$$\max \sum_t \beta^t U\left(C_{it}/N_{it}, L_{it}/N_{it}\right) N_{it}$$

subject to

$$\sum_t p_t\left[C_{it} + B_{i,t+1} - B_{it}\right]$$

$$\leq \sum_t p_t\left[(1-\tau_{l,it})\,W_{it}L_{it} + (1-\tau_{d,it})\left(D_t^i + \tilde{D}_{it}\right) + r_{bt}B_{it} + \kappa_{it}\right],$$

where τ_{li} and τ_d are tax rates on labor and company distributions, r_{bt} is the after-tax return on lending/borrowing, and L_{it} is the total labor supply to domestic and foreign multinationals and

the local public firm. We also include nonbusiness labor $\bar{L}_{nb,it}$ in the total labor supply, but treat it as exogenous.

2.4. Market clearing

To close the model, we need to specify market-clearing conditions. The worldwide resource constraint is

$$\sum_i \left\{ C_{it} + \sum_j \left(X^j_{T,it} + X^j_{I,it} \right) + X^i_{M,t} + \tilde{X}_{T,it} + \tilde{X}_{I,it} + \bar{X}_{nb,it} \right\}$$
$$= \sum_{i,j} Y^j_{it} + \sum_i \tilde{Y}_{it} + \sum_i \bar{Y}_{nb,it}$$

which is the market-clearing condition for the goods market. Here, we have added terms for nonbusiness investment $\bar{X}_{nb,it}$ and nonbusiness output $\bar{Y}_{nb,it}$ that are exogenous and included so that the model and NIPA accounts are consistent.

Market clearing in asset markets occurs if $\sum_i B_{it} = 0$ and market clearing in (business) labor markets occurs if

$$L_{it} = \tilde{L}_{it} + \sum_j L^j_{it} + \bar{L}_{nb,it}, \quad i = 1, \dots, I.$$

2.5. Computation

Computation of equilibria for the model involves finding sequences of quantities, prices, and aggregate states that satisfy the first-order conditions of the maximization problems above.[2]

The model has $3I^2 + 4I$ quantities, $I + 1$ prices, and $3I$ aggregate states that relevant for the firm problems, where I is the number of countries. The quantities include total consumption, total labor, total asset holdings, investment of technology capital, the distribution of tangible investments by multinationals across countries (which is I^2 values), the distribution of location-specific intangible investments by multinationals across countries (which is I^2 values), and the distribution of intensity levels across countries (which is at most I^2, but possibly lower if not all countries follow quid pro quo policies). The model prices include the world interest rate and wages in each country. The remaining states include transfers, the economy-wide technology capital

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[2] With positive growth in the technologies and populations, we also need to detrend the variables in order to work with a stationary system of equations. When we do this, we assume a common trend growth rate of γ_A for world technology and a common trend growth rate of γ_N for population. Any idiosyncratic differences in the sequences $\{A_{it}, N_{it}\}$ are treated as fluctuations around these common trends.

stocks, and transferred technology capital. Assuming there are T periods, this means finding a fixed point over a total of $(3I^2 + 8I + 1)T$ variables, with the set of equations given by the first-order conditions of the maximization problems above. If $I = 6$ and $T = 50$, then there are 7,850 unknowns.

Solving the fixed point can be done very quickly if we distribute the problem across processors on a parallel machine. Specifically, we assign each country to a processor and pass initial guesses for the vector of prices and aggregate states.[3] Given these data, we can compute equilibrium quantities on the slave processors and then pass the answer back to the master processor. We then update the prices and aggregate states using market-clearing conditions and pass these updated variables to the processors. We iterate until we find a fixed point.

As we noted above, we have included subsidies and adjustment costs in order to ensure non-negativity of investment decisions. Given the number of investment decisions we are trying to compute, applying standard penalty function methods is difficult.

2.6. Parameter Inputs

Here, we report *all* parameter inputs for our benchmark model and variations of the benchmark model.

Two new parameter inputs are introduced with the innovation subsidies and the adjustment costs. For completeness, we repeat Table A1 from the main paper and include these additional parameters. For innovation subsidies, we use the following functional form:

$$\tau_s (x) = \nu_0 \exp(-\nu_1 x).$$

In all of our numerical experiments, we set $\nu_0 = .25$ and $\nu_1 = 200$. This choice implies a subsidy that is zero unless a country's investment in technology capital relative to total technology capital in the country is very close to zero.

For the adjustment costs, we use a quadratic cost function:

$$\varphi (X/K) = \varphi_0/2 (X/K - \delta - \gamma_Y)^2$$

with $\varphi_0 = 1$, δ equal to the depreciation rate corresponding to the type of investment and γ_Y equal to the growth rate of output (which in all experiments is equal to 3 percent).

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[3] If there are large changes in policies over the sample of interest, it may be necessary to compute a sequence of economies, each involving only a small change in policy relative to the previous one in the sequence.

Tables A2–A5 from the main paper are also repeated but differ in two ways. First, we include all years for the benchmark model with and without quid pro quo and spillovers. Second, we provide details on the inputs used for the variations of the benchmark model with quid pro quo and spillovers. The results of those alternative models are reported in the Table 7 of the main paper. The parameter inputs are reported in Tables A2–A5 in this appendix. Table A2 reports the relative populations, which are the same for all experiments except when we group Korea with Japan. Tables A3–A5 comprise an exhaustive list of all parameters governing TFPs, openness, intensity levels, and quid pro quo costs. These parameters are different across experiments.

3. Further Sensitivity Analysis

In this section, we discuss results of additional sensitivity analysis that is not covered in the main text. The first set of results includes variations of the benchmark model with quid pro quo and spillovers and the second set of results includes variations of the model without quid pro quo or spillovers analyzed by McGrattan and Prescott (2010).[4]

3.1. In the Model with Quid Pro Quo and Spillovers

Two of the experiments are not included with the results of Table 8 in the main paper but are included here. The first allows for unrestricted portfolio flows across all countries. Recall that in the benchmark model, portfolios are restricted in the case of China, BRI, and rest of world. Second, we lower the elasticity of the cost function $h_i^j(q)$. Inputs for these experiments are shown in Tables A1–A5, and the results are summarized in Table A6.

In the benchmark model, we assumed that some country portfolios are restricted. The assumption was motivated by the fact that portfolio investments are not large in these countries and that evidence of capital controls is abundant. When we consider the opposite extreme with no capital controls on portfolios, we find that China has a larger share of proprietary capital by 2010—roughly 9.3 percent—and does more than twice as much outward FDI than in the benchmark model (1.16 versus 0.52). These predictions are shown in the first and second columns of Table A6. With portfolios unrestricted and TFP projected to rise, however, the model with unrestricted portfolio flows predicts a counterfactually large consumption share in China during the transition to higher levels of TFP; the model predicts average consumption equal to roughly 1.6

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[4] See Ellen McGrattan and Edward Prescott, Technology Capital and the U.S. Current Account, *American Economic Review*, 100(4), pages 1493–1522, 2010.

times average GDP in the 1990s. This prediction is not consistent with national account estimates for China that find relatively low levels of consumption and high levels of investment and savings. Thus, a more plausible assumption is to have portfolio restrictions closer to that in the benchmark model

The third column of Table A6 reports the results for a lower elasticity of the cost function. Recall that we used the following functional form:

$$h_{it}^j(q) = \min\{\bar{h}_t q \exp\left(-\eta\left(1-q\right)\right), 1\} \tag{3.1}$$

with $\eta = 10$. If we set $\eta = 9$ and adjust the path of $\bar{h}_t$ to fit the observed share of China's FDI inflows from the United States, Western Europe, and Japan (as in Figure A3 of the main paper), then we find very little difference in the results. We should note, however, that the equilibrium quid pro quo costs rise as we lower η. This can be seen by comparing Panel B with Panel J in Table A5. If it is lowered too much, the range of costs are inconsistent with our estimates based on patent counts.

3.2. In the Model without Quid Pro Quo or Spillovers

Next, we explore a version of the model without quid pro quo or spillovers extended to allow for a more general parameterization of the degree of openness. The point of this exercise is to introduce barriers to FDI that arise from sources other than quid pro quo such as distance and differences in language or culture. Here, we consider a version of the model with σ_{it} replaced by $\tilde{\sigma}_{it}^j = \zeta \sigma_{it}$ if i and j are not close and $\tilde{\sigma}_{it}^j = \sigma_{it}$ if i and j are close. Specifically, we assume that the United States and Western Europe are close to each other but far from the Asian countries and vice versa. The case of $\zeta = 1$ is the baseline model of McGrattan and Prescott. We also consider $\zeta = .95$ and $\zeta = .90$ which implies a 5 and 10 percent discount, respectively.

Figure A1 shows that shares of inward FDI to China from the technologically advanced countries fell from about 70 percent in the early 1990s to below 40 percent by 2010, implying a 30 percentage point decline. The McGrattan and Prescott model—with $\zeta = 1$—predicts a decline of roughly 4 percentage points. With a lower value for ζ, the model's prediction for this share shifts downward in all years but the overall decline between 1990 and 2010 is the same as in the McGrattan and Prescott model. This should not be surprising given that barriers such as distance and language do not change over time.

Figure A2 shows that allowing for $\zeta < 1$ does help slightly in terms of the predicted outward

FDI flows from China, but even with a 10 percent discount, the model overpredicts the outflow of FDI from China by a factor of 4.

From these exercises we conclude that allowing for $\zeta < 1$ in the baseline McGrattan and Prescott model without quid pro quo or spillovers makes no headway in fitting the pattern of the declining share of FDI from the technologically advanced countries into China and little headway in accounting for the low outflows of FDI from China.

Model Parameters Common Across Countries and Experiments

Parameter	Expression	Value
Preferences		
Discount factor	β	.98
Leisure weight	ψ	1.32
Growth rates (%)		
Population	γ_N	1.0
Technology	γ_A	1.2
Income shares (%)		
Technology capital	ϕ	7.0
Tangible capital	$(1-\phi)\alpha_T$	21.4
Plant-specific intangible capital	$(1-\phi)\alpha_I$	6.5
Labor	$(1-\phi)(1-\alpha_T-\alpha_I)$	65.1
Nonbusiness sector (%)		
Fraction of time at work	$\bar{L}_{nb}$	6
Investment share	$\bar{X}_{nb}/\text{GDP}$	15
Value-added share	$\bar{Y}_{nb}/\text{GDP}$	31
Depreciation rates (%)		
Technology capital	δ_M	8.0
Tangible capital	δ_T	6.0
Plant-specific intangible capital	δ_I	0
Tax rates (%)		
Labor wedge	τ_l	34
Dividends	τ_d	28
Innovation subsidy		
Scale	ν_0	0.25
Curvature	ν_1	200
Adjustment cost scale	φ_0	1.0

Note.—The additional parameters included here but not reported in the main paper are those related to the innovation subsidy and adjustment costs.

Populations Relative to the United States

	U.S.	W. Europe	Japan	China	BRI	ROW
A. Models with Korea Included in ROW						
1990	100	151	49	465	469	172
1991	100	150	49	465	471	173
1992	100	148	48	465	473	173
1993	100	147	48	464	475	174
1994	100	146	47	463	477	174
1995	100	144	47	463	479	175
1996	100	143	47	462	481	175
1997	100	142	46	462	482	176
1998	100	140	46	461	484	176
1999	100	139	45	459	485	177
2000	100	138	45	458	487	177
2001	100	137	45	457	489	178
2002	100	137	44	455	491	179
2003	100	137	44	454	494	180
2004	100	136	44	453	495	181
2005	100	136	43	451	497	182
2006	100	135	43	450	499	182
2007	100	135	42	448	500	183
2008	100	134	42	446	501	184
2009	100	134	42	444	503	184
2010	100	133	41	442	505	185
2011	100	133	41	442	505	185
2012	100	133	41	442	505	185
2013	100	133	41	442	505	185
2014	100	133	41	442	505	185
2015	100	133	41	442	505	185
B. Models with Korea and Japan Combined						
1990	100	151	67	469	465	155
1991	100	150	66	471	465	156
1992	100	148	65	473	465	156
1993	100	147	65	475	464	157
1994	100	146	64	477	463	157
1995	100	144	64	479	463	158
1996	100	143	64	481	462	158
1997	100	142	63	482	462	159
1998	100	140	63	484	461	159
1999	100	139	62	485	459	160
2000	100	138	62	487	458	161

See notes at the end of the table.

Populations Relative to the United States

	U.S.	W. Europe	Japan	China	BRI	ROW
B. Models with Korea and Japan Combined, Cont.						
2001	100	137	61	489	457	162
2002	100	137	61	491	455	163
2003	100	137	61	494	454	164
2004	100	136	60	495	453	165
2005	100	136	60	497	451	165
2006	100	135	59	499	450	166
2007	100	135	59	500	448	167
2008	100	134	58	501	446	167
2009	100	134	58	503	444	168
2010	100	133	57	505	442	169
2011	100	133	57	505	442	169
2012	100	133	57	505	442	169
2013	100	133	57	505	442	169
2014	100	133	57	505	442	169
2015	100	133	57	505	442	169

Note.—Source of the data is the World Bank, World Development Indicators database.

Table A3

Total Factor Productivities Relative to United States

	U.S.	W. Europe	Japan	China	BRI	ROW
A. Model without Quid Pro Quo or Spillovers						
1990	100	80.5	92.4	11.9	20.0	33.8
1991	100	80.5	92.3	12.0	20.0	34.0
1992	100	80.5	92.0	12.2	20.0	34.3
1993	100	80.5	91.3	12.5	20.0	34.6
1994	100	80.5	90.2	12.8	20.0	34.9
1995	100	80.6	89.2	13.2	20.0	35.2
1996	100	80.6	88.5	13.6	20.0	35.5
1997	100	80.6	88.2	14.2	20.0	35.8
1998	100	80.6	88.1	14.9	20.0	36.1
1999	100	80.6	88.0	15.7	20.0	36.4
2000	100	80.6	88.0	16.6	20.0	36.6
2001	100	80.6	88.0	17.6	20.1	36.9
2002	100	80.6	88.0	18.7	20.3	37.2
2003	100	80.7	88.0	19.9	20.5	37.4
2004	100	80.7	88.0	21.1	20.7	37.7
2005	100	80.7	88.0	22.4	20.9	38.0
2006	100	80.7	88.0	23.6	21.0	38.2
2007	100	80.7	88.0	24.7	21.0	38.5
2008	100	80.7	88.0	25.7	21.0	38.7
2009	100	80.7	88.0	26.6	21.0	38.9
2010	100	80.7	88.0	27.4	21.0	39.2
2011	100	80.7	88.0	28.1	21.0	39.4
2012	100	80.8	88.0	28.7	21.0	39.6
2013	100	80.8	88.0	29.1	21.0	39.8
2014	100	80.8	88.0	29.5	21.0	40.1
2015	100	80.8	88.0	29.8	21.0	40.3
B. Model with Quid Pro Quo and Spillovers (Benchmark)						
1990	100	80.5	92.4	13.5	20.0	34.0
1991	100	80.5	92.3	13.9	20.0	34.2
1992	100	80.5	92.0	14.4	20.0	34.5
1993	100	80.5	91.3	15.0	20.0	34.7
1994	100	80.5	90.2	15.6	20.0	35.0
1995	100	80.6	89.2	16.3	20.0	35.2
1996	100	80.6	88.5	17.0	20.0	35.5
1997	100	80.6	88.2	17.8	20.0	35.7
1998	100	80.6	88.1	18.6	20.0	36.0
1999	100	80.6	88.0	19.4	20.0	36.2
2000	100	80.6	88.0	20.3	20.1	36.4
2001	100	80.6	88.0	21.2	20.2	36.7

See notes at the end of the table.

Total Factor Productivities Relative to United States, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
B. Model with Quid Pro Quo and Spillovers (Benchmark), Cont.						
2002	100	80.6	88.0	22.0	20.5	36.9
2003	100	80.7	88.0	22.9	20.9	37.1
2004	100	80.7	88.0	23.7	21.3	37.4
2005	100	80.7	88.0	24.5	21.5	37.6
2006	100	80.7	88.0	25.3	21.7	37.8
2007	100	80.7	88.0	26.0	21.7	38.0
2008	100	80.7	88.0	26.6	21.7	38.2
2009	100	80.7	88.0	27.2	21.7	38.4
2010	100	80.7	88.0	27.8	21.7	38.6
2011	100	80.7	88.0	28.3	21.7	38.8
2012	100	80.8	88.0	28.7	21.7	39.0
2013	100	80.8	88.0	29.1	21.7	39.2
2014	100	80.8	88.0	29.4	21.7	39.4
2015	100	80.8	88.0	29.7	21.7	39.5
C. Benchmark without FDI Spillovers						
1990	100	80.5	92.4	13.5	20.0	34.0
1991	100	80.5	92.3	13.9	20.0	34.2
1992	100	80.5	92.0	14.4	20.0	34.5
1993	100	80.5	91.3	15.0	20.0	34.7
1994	100	80.5	90.2	15.6	20.0	35.0
1995	100	80.6	89.2	16.3	20.0	35.2
1996	100	80.6	88.5	17.0	20.0	35.5
1997	100	80.6	88.2	17.8	20.0	35.7
1998	100	80.6	88.1	18.6	20.0	36.0
1999	100	80.6	88.0	19.4	20.0	36.2
2000	100	80.6	88.0	20.3	20.1	36.4
2001	100	80.6	88.0	21.2	20.2	36.7
2002	100	80.6	88.0	22.0	20.5	36.9
2003	100	80.7	88.0	22.9	20.9	37.1
2004	100	80.7	88.0	23.7	21.3	37.4
2005	100	80.7	88.0	24.5	21.5	37.6
2006	100	80.7	88.0	25.3	21.7	37.8
2007	100	80.7	88.0	26.0	21.7	38.0
2008	100	80.7	88.0	26.6	21.7	38.2
2009	100	80.7	88.0	27.2	21.7	38.4
2010	100	80.7	88.0	27.8	21.7	38.6
2011	100	80.7	88.0	28.3	21.7	38.8
2012	100	80.8	88.0	28.7	21.7	39.0

See notes at the end of the table.

Total Factor Productivities Relative to United States, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
		C. Benchmark without FDI Spillovers, Cont.				
2013	100	80.8	88.0	29.1	21.7	39.2
2014	100	80.8	88.0	29.4	21.7	39.4
2015	100	80.8	88.0	29.7	21.7	39.5
		D. Benchmark with Quid Pro Quo Policy Fixed				
1990	100	80.5	92.4	13.5	20.0	34.0
1991	100	80.5	92.3	13.9	20.0	34.2
1992	100	80.5	92.0	14.4	20.0	34.5
1993	100	80.5	91.3	15.0	20.0	34.7
1994	100	80.5	90.2	15.6	20.0	35.0
1995	100	80.6	89.2	16.3	20.0	35.2
1996	100	80.6	88.5	17.0	20.0	35.5
1997	100	80.6	88.2	17.8	20.0	35.7
1998	100	80.6	88.1	18.6	20.0	36.0
1999	100	80.6	88.0	19.4	20.0	36.2
2000	100	80.6	88.0	20.3	20.1	36.4
2001	100	80.6	88.0	21.2	20.2	36.7
2002	100	80.6	88.0	22.0	20.5	36.9
2003	100	80.7	88.0	22.9	20.9	37.1
2004	100	80.7	88.0	23.7	21.3	37.4
2005	100	80.7	88.0	24.5	21.5	37.6
2006	100	80.7	88.0	25.3	21.7	37.8
2007	100	80.7	88.0	26.0	21.7	38.0
2008	100	80.7	88.0	26.6	21.7	38.2
2009	100	80.7	88.0	27.2	21.7	38.4
2010	100	80.7	88.0	27.8	21.7	38.6
2011	100	80.7	88.0	28.3	21.7	38.8
2012	100	80.8	88.0	28.7	21.7	39.0
2013	100	80.8	88.0	29.1	21.7	39.2
2014	100	80.8	88.0	29.4	21.7	39.4
2015	100	80.8	88.0	29.7	21.7	39.5
		E. Benchmark with Korea and Japan Combined				
1990	100	80.5	85.0	13.7	20.0	32.2
1991	100	80.5	85.0	14.1	20.0	32.5
1992	100	80.5	84.9	14.7	20.0	32.7
1993	100	80.5	84.7	15.2	20.0	32.9
1994	100	80.5	84.5	15.8	20.0	33.1
1995	100	80.6	84.3	16.5	20.0	33.4

See notes at the end of the table.

TOTAL FACTOR PRODUCTIVITIES RELATIVE TO UNITED STATES, CONT.

	U.S.	W. Europe	Japan	China	BRI	ROW
E. Benchmark with Korea and Japan Combined, Cont.						
1996	100	80.6	84.1	17.2	20.0	33.6
1997	100	80.6	84.0	18.0	20.0	33.8
1998	100	80.6	84.0	18.8	20.0	34.0
1999	100	80.6	84.0	19.6	20.0	34.2
2000	100	80.6	84.0	20.5	20.1	34.4
2001	100	80.6	84.0	21.4	20.2	34.7
2002	100	80.6	84.0	22.3	20.5	34.9
2003	100	80.7	84.0	23.1	20.9	35.1
2004	100	80.7	84.0	23.9	21.3	35.3
2005	100	80.7	84.0	24.7	21.5	35.5
2006	100	80.7	84.0	25.5	21.7	35.7
2007	100	80.7	84.0	26.2	21.7	35.8
2008	100	80.7	84.0	26.8	21.7	36.0
2009	100	80.7	84.0	27.4	21.7	36.2
2010	100	80.7	84.0	28.0	21.7	36.4
2011	100	80.7	84.0	28.5	21.7	36.6
2012	100	80.8	84.0	28.9	21.7	36.7
2013	100	80.8	84.0	29.3	21.7	36.9
2014	100	80.8	84.0	29.6	21.7	37.1
2015	100	80.8	84.0	29.9	21.7	37.2
F. Benchmark without Rest of World						
1990	100.0	80.5	92.4	13.7	20.0	–
1991	100.0	80.5	92.3	14.1	20.0	–
1992	100.0	80.5	92.0	14.6	20.0	–
1993	100.0	80.5	91.3	15.2	20.0	–
1994	100.0	80.5	90.2	15.8	20.0	–
1995	100.0	80.6	89.2	16.4	20.0	–
1996	100.0	80.6	88.5	17.1	20.0	–
1997	100.0	80.6	88.2	17.9	20.0	–
1998	100.0	80.6	88.1	18.7	20.0	–
1999	100.0	80.6	88.0	19.6	20.0	–
2000	100.0	80.6	88.0	20.4	20.1	–
2001	100.0	80.6	88.0	21.3	20.2	–
2002	100.0	80.6	88.0	22.1	20.5	–
2003	100.0	80.7	88.0	23.0	20.9	–
2004	100.0	80.7	88.0	23.8	21.3	–
2005	100.0	80.7	88.0	24.6	21.5	–

See notes at the end of the table.

Total Factor Productivities Relative to United States, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
F. Benchmark without Rest of World, Cont.						
2006	100.0	80.7	88.0	25.3	21.7	–
2007	100.0	80.7	88.0	26.0	21.7	–
2008	100.0	80.7	88.0	26.7	21.7	–
2009	100.0	80.7	88.0	27.3	21.7	–
2010	100.0	80.7	88.0	27.8	21.7	–
2011	100.0	80.7	88.0	28.3	21.7	–
2012	100.0	80.8	88.0	28.7	21.7	–
2013	100.0	80.8	88.0	29.1	21.7	–
2014	100.0	80.8	88.0	29.4	21.7	–
2015	100.0	80.8	88.0	29.7	21.7	–
G. Benchmark with UK Island Flows Reallocated						
1990	100	80.5	92.4	13.5	20.0	34.0
1991	100	80.5	92.3	13.9	20.0	34.2
1992	100	80.5	92.0	14.4	20.0	34.5
1993	100	80.5	91.3	15.0	20.0	34.7
1994	100	80.5	90.2	15.6	20.0	35.0
1995	100	80.6	89.2	16.3	20.0	35.2
1996	100	80.6	88.5	17.0	20.0	35.5
1997	100	80.6	88.2	17.8	20.0	35.7
1998	100	80.6	88.1	18.6	20.0	36.0
1999	100	80.6	88.0	19.4	20.0	36.2
2000	100	80.6	88.0	20.3	20.1	36.4
2001	100	80.6	88.0	21.2	20.2	36.7
2002	100	80.6	88.0	22.0	20.5	36.9
2003	100	80.7	88.0	22.9	20.9	37.1
2004	100	80.7	88.0	23.7	21.3	37.4
2005	100	80.7	88.0	24.5	21.5	37.6
2006	100	80.7	88.0	25.3	21.7	37.8
2007	100	80.7	88.0	26.0	21.7	38.0
2008	100	80.7	88.0	26.6	21.7	38.2
2009	100	80.7	88.0	27.2	21.7	38.4
2010	100	80.7	88.0	27.8	21.7	38.6
2011	100	80.7	88.0	28.3	21.7	38.8
2012	100	80.8	88.0	28.7	21.7	39.0
2013	100	80.8	88.0	29.1	21.7	39.2
2014	100	80.8	88.0	29.4	21.7	39.4
2015	100	80.8	88.0	29.7	21.7	39.5

See notes at the end of the table.

Total Factor Productivities Relative to United States, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
			H. Benchmark with Lower Chinese Profit Tax			
1990	100	80.5	92.4	13.4	20.0	34.0
1991	100	80.5	92.3	13.8	20.0	34.2
1992	100	80.5	92.0	14.3	20.0	34.5
1993	100	80.5	91.3	14.8	20.0	34.7
1994	100	80.5	90.2	15.4	20.0	35.0
1995	100	80.6	89.2	16.1	20.0	35.2
1996	100	80.6	88.5	16.8	20.0	35.5
1997	100	80.6	88.2	17.5	20.0	35.7
1998	100	80.6	88.1	18.3	20.0	36.0
1999	100	80.6	88.0	19.1	20.0	36.2
2000	100	80.6	88.0	19.9	20.1	36.4
2001	100	80.6	88.0	20.8	20.2	36.7
2002	100	80.6	88.0	21.6	20.5	36.9
2003	100	80.7	88.0	22.4	20.9	37.1
2004	100	80.7	88.0	23.2	21.3	37.4
2005	100	80.7	88.0	24.0	21.5	37.6
2006	100	80.7	88.0	24.7	21.7	37.8
2007	100	80.7	88.0	25.4	21.7	38.0
2008	100	80.7	88.0	26.0	21.7	38.2
2009	100	80.7	88.0	26.6	21.7	38.4
2010	100	80.7	88.0	27.1	21.7	38.6
2011	100	80.7	88.0	27.6	21.7	38.8
2012	100	80.8	88.0	28.0	21.7	39.0
2013	100	80.8	88.0	28.4	21.7	39.2
2014	100	80.8	88.0	28.7	21.7	39.4
2015	100	80.8	88.0	29.0	21.7	39.5
			I. Benchmark with Unrestricted Portfolios			
1990	100	80.7	92.9	19.1	24.0	40.0
1991	100	80.7	92.8	19.9	24.1	40.2
1992	100	80.7	92.4	20.7	24.3	40.3
1993	100	80.7	91.7	21.7	24.4	40.5
1994	100	80.7	90.5	22.6	24.6	40.7
1995	100	80.7	89.3	23.5	24.7	40.9
1996	100	80.8	88.6	24.5	24.9	41.0
1997	100	80.8	88.2	25.3	25.0	41.2
1998	100	80.8	88.1	26.1	25.2	41.4

See notes at the end of the table.

TABLE A3

TOTAL FACTOR PRODUCTIVITIES RELATIVE TO UNITED STATES, CONT.

	U.S.	W. Europe	Japan	China	BRI	ROW

I. Benchmark with Unrestricted Portfolios, Cont.

Year	U.S.	W. Europe	Japan	China	BRI	ROW
1999	100	80.8	88.0	26.8	25.3	41.5
2000	100	80.8	88.0	27.4	25.5	41.7
2001	100	80.8	88.0	27.9	25.6	41.9
2002	100	80.8	88.0	28.4	25.8	42.0
2003	100	80.9	88.0	28.8	25.9	42.2
2004	100	80.9	88.0	29.0	26.1	42.4
2005	100	80.9	88.0	29.3	26.2	42.5
2006	100	80.9	88.0	29.5	26.3	42.7
2007	100	80.9	88.0	29.6	26.5	42.8
2008	100	80.9	88.0	29.8	26.6	43.0
2009	100	80.9	88.0	29.9	26.8	43.1
2010	100	81.0	88.0	29.9	26.9	43.2
2011	100	81.0	88.0	30.0	27.0	43.4
2012	100	81.0	88.0	30.0	27.2	43.5
2013	100	81.0	88.0	30.1	27.3	43.6
2014	100	81.0	88.0	30.1	27.4	43.8
2015	100	81.0	88.0	30.1	27.5	43.9

J. Benchmark with Lower Elasticity of $h_i^j(q)$

Year	U.S.	W. Europe	Japan	China	BRI	ROW
1990	100	80.5	92.4	13.9	20.0	34.0
1991	100	80.5	92.3	14.3	20.0	34.2
1992	100	80.5	92.0	14.8	20.0	34.5
1993	100	80.5	91.3	15.4	20.0	34.7
1994	100	80.5	90.2	16.0	20.0	35.0
1995	100	80.6	89.2	16.6	20.0	35.2
1996	100	80.6	88.5	17.4	20.0	35.5
1997	100	80.6	88.2	18.1	20.0	35.7
1998	100	80.6	88.1	18.9	20.0	36.0
1999	100	80.6	88.0	19.7	20.0	36.2

See notes at the end of the table.

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TOTAL FACTOR PRODUCTIVITIES RELATIVE TO UNITED STATES, CONT.

	U.S.	W. Europe	Japan	China	BRI	ROW
		J. Benchmark with Lower Elasticity of $h_i^j(q)$, Cont.				
2000	100	80.6	88.0	20.6	20.1	36.4
2001	100	80.6	88.0	21.4	20.2	36.7
2002	100	80.6	88.0	22.3	20.5	36.9
2003	100	80.7	88.0	23.1	20.9	37.1
2004	100	80.7	88.0	23.9	21.3	37.4
2005	100	80.7	88.0	24.7	21.5	37.6
2006	100	80.7	88.0	25.4	21.7	37.8
2007	100	80.7	88.0	26.1	21.7	38.0
2008	100	80.7	88.0	26.8	21.7	38.2
2009	100	80.7	88.0	27.3	21.7	38.4
2010	100	80.7	88.0	27.9	21.7	38.6
2011	100	80.7	88.0	28.3	21.7	38.8
2012	100	80.8	88.0	28.8	21.7	39.0
2013	100	80.8	88.0	29.1	21.7	39.2
2014	100	80.8	88.0	29.5	21.7	39.4
2015	100	80.8	88.0	29.7	21.7	39.5

Note: TFP parameters are chosen to align trends in data and model. See text for details.

TABLE A4

DEGREE OF OPENNESS TO FOREIGN DIRECT INVESTMENT

	U.S.	W. Europe	Japan	China	BRI	ROW
A. Model without Quid Pro Quo or Spillovers						
1990	0.815	0.815	0.680	0.623	0.684	0.760
1991	0.815	0.815	0.680	0.688	0.684	0.760
1992	0.815	0.815	0.680	0.731	0.684	0.760
1993	0.815	0.815	0.680	0.751	0.684	0.760
1994	0.815	0.815	0.680	0.760	0.685	0.760
1995	0.815	0.815	0.680	0.763	0.685	0.760
1996	0.816	0.815	0.681	0.764	0.686	0.761
1997	0.816	0.815	0.681	0.765	0.687	0.761
1998	0.816	0.816	0.682	0.765	0.689	0.762
1999	0.817	0.816	0.683	0.765	0.692	0.763
2000	0.819	0.817	0.684	0.765	0.696	0.764
2001	0.821	0.818	0.686	0.765	0.703	0.766
2002	0.823	0.819	0.689	0.765	0.712	0.769
2003	0.827	0.821	0.692	0.765	0.723	0.772
2004	0.831	0.823	0.697	0.765	0.736	0.776
2005	0.834	0.824	0.701	0.765	0.749	0.781
2006	0.838	0.826	0.704	0.765	0.760	0.784
2007	0.840	0.827	0.707	0.765	0.769	0.787
2008	0.842	0.828	0.709	0.765	0.776	0.789
2009	0.844	0.829	0.710	0.765	0.780	0.790
2010	0.845	0.829	0.711	0.765	0.783	0.791
2011	0.845	0.830	0.712	0.765	0.785	0.792
2012	0.845	0.830	0.712	0.765	0.786	0.792
2013	0.846	0.830	0.713	0.765	0.787	0.793
2014	0.846	0.830	0.713	0.765	0.787	0.793
2015	0.846	0.830	0.713	0.765	0.788	0.793
B. Model with Quid Pro Quo and Spillovers (Benchmark)						
1990	0.849	0.852	0.689	0.667	0.654	0.775
1991	0.849	0.852	0.689	0.672	0.654	0.775
1992	0.849	0.852	0.689	0.678	0.655	0.775
1993	0.849	0.852	0.689	0.688	0.655	0.775
1994	0.849	0.852	0.689	0.701	0.655	0.775
1995	0.849	0.852	0.689	0.717	0.656	0.775
1996	0.849	0.852	0.690	0.736	0.658	0.776
1997	0.850	0.852	0.690	0.755	0.660	0.776
1998	0.850	0.852	0.691	0.771	0.664	0.777
1999	0.851	0.853	0.692	0.784	0.670	0.778
2000	0.852	0.853	0.693	0.794	0.679	0.780
2001	0.853	0.853	0.696	0.800	0.692	0.783

See notes at the end of the table.

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DEGREE OF OPENNESS TO FOREIGN DIRECT INVESTMENT, CONT.

	U.S.	W. Europe	Japan	China	BRI	ROW
B. Model with Quid Pro Quo and Spillovers (Benchmark), Cont.						
2002	0.855	0.854	0.699	0.805	0.709	0.787
2003	0.858	0.855	0.704	0.808	0.732	0.792
2004	0.861	0.856	0.708	0.809	0.757	0.797
2005	0.863	0.857	0.713	0.810	0.782	0.802
2006	0.866	0.858	0.717	0.811	0.805	0.807
2007	0.868	0.859	0.721	0.811	0.822	0.811
2008	0.869	0.859	0.723	0.812	0.835	0.814
2009	0.870	0.859	0.725	0.812	0.844	0.816
2010	0.871	0.860	0.726	0.812	0.850	0.817
2011	0.871	0.860	0.727	0.812	0.854	0.818
2012	0.872	0.860	0.727	0.812	0.856	0.818
2013	0.872	0.860	0.728	0.812	0.858	0.819
2014	0.872	0.860	0.728	0.812	0.859	0.819
2015	0.872	0.860	0.728	0.812	0.859	0.819
C. Benchmark without FDI Spillovers						
1990	0.849	0.852	0.689	0.667	0.654	0.775
1991	0.849	0.852	0.689	0.672	0.654	0.775
1992	0.849	0.852	0.689	0.678	0.655	0.775
1993	0.849	0.852	0.689	0.688	0.655	0.775
1994	0.849	0.852	0.689	0.701	0.655	0.775
1995	0.849	0.852	0.689	0.717	0.656	0.775
1996	0.849	0.852	0.690	0.736	0.658	0.776
1997	0.850	0.852	0.690	0.755	0.660	0.776
1998	0.850	0.852	0.691	0.771	0.664	0.777
1999	0.851	0.853	0.692	0.784	0.670	0.778
2000	0.852	0.853	0.693	0.794	0.679	0.780
2001	0.853	0.853	0.696	0.800	0.692	0.783
2002	0.855	0.854	0.699	0.805	0.709	0.787
2003	0.858	0.855	0.704	0.808	0.732	0.792
2004	0.861	0.856	0.708	0.809	0.757	0.797
2005	0.863	0.857	0.713	0.810	0.782	0.802
2006	0.866	0.858	0.717	0.811	0.805	0.807
2007	0.868	0.859	0.721	0.811	0.822	0.811
2008	0.869	0.859	0.723	0.812	0.835	0.814
2009	0.870	0.859	0.725	0.812	0.844	0.816
2010	0.871	0.860	0.726	0.812	0.850	0.817
2011	0.871	0.860	0.727	0.812	0.854	0.818
2012	0.872	0.860	0.727	0.812	0.856	0.818

See notes at the end of the table.

Degree of Openness to Foreign Direct Investment, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
C. Benchmark without FDI Spillovers, Cont.						
2013	0.872	0.860	0.728	0.812	0.858	0.819
2014	0.872	0.860	0.728	0.812	0.859	0.819
2015	0.872	0.860	0.728	0.812	0.859	0.819
D. Benchmark with Quid Pro Quo Policy Fixed						
1990	0.849	0.852	0.689	0.667	0.654	0.775
1991	0.849	0.852	0.689	0.671	0.654	0.775
1992	0.849	0.852	0.689	0.677	0.654	0.775
1993	0.849	0.852	0.689	0.686	0.655	0.775
1994	0.849	0.852	0.689	0.698	0.655	0.775
1995	0.849	0.852	0.689	0.713	0.656	0.775
1996	0.849	0.852	0.690	0.730	0.657	0.776
1997	0.850	0.852	0.690	0.747	0.660	0.776
1998	0.850	0.852	0.691	0.762	0.663	0.777
1999	0.851	0.852	0.692	0.774	0.668	0.778
2000	0.852	0.853	0.693	0.783	0.677	0.780
2001	0.853	0.853	0.696	0.789	0.688	0.782
2002	0.855	0.853	0.699	0.793	0.705	0.786
2003	0.857	0.854	0.704	0.796	0.725	0.790
2004	0.859	0.854	0.708	0.797	0.748	0.795
2005	0.862	0.855	0.713	0.798	0.772	0.800
2006	0.864	0.856	0.717	0.799	0.792	0.804
2007	0.866	0.856	0.721	0.799	0.809	0.808
2008	0.867	0.856	0.723	0.800	0.820	0.810
2009	0.868	0.857	0.725	0.800	0.829	0.812
2010	0.869	0.857	0.726	0.800	0.834	0.813
2011	0.869	0.857	0.727	0.800	0.837	0.814
2012	0.870	0.857	0.727	0.800	0.840	0.814
2013	0.870	0.857	0.728	0.800	0.841	0.815
2014	0.870	0.857	0.728	0.800	0.842	0.815
2015	0.870	0.857	0.728	0.800	0.842	0.815
E. Benchmark with Korea and Japan Combined						
1990	0.849	0.852	0.689	0.667	0.654	0.775
1991	0.849	0.852	0.689	0.672	0.654	0.775
1992	0.849	0.852	0.689	0.678	0.655	0.775
1993	0.849	0.852	0.689	0.688	0.655	0.775
1994	0.849	0.852	0.689	0.701	0.655	0.775
1995	0.849	0.852	0.689	0.718	0.656	0.775

See notes at the end of the table.

	U.S.	W. Europe	Japan	China	BRI	ROW
	E. Benchmark with Korea and Japan Combined, Cont.					
1996	0.849	0.852	0.690	0.737	0.658	0.776
1997	0.850	0.852	0.691	0.756	0.660	0.776
1998	0.850	0.852	0.692	0.773	0.664	0.776
1999	0.851	0.853	0.693	0.786	0.670	0.777
2000	0.852	0.853	0.696	0.796	0.679	0.779
2001	0.853	0.853	0.700	0.802	0.692	0.780
2002	0.855	0.854	0.705	0.807	0.709	0.783
2003	0.858	0.855	0.711	0.809	0.732	0.786
2004	0.861	0.856	0.718	0.811	0.757	0.790
2005	0.864	0.857	0.726	0.812	0.782	0.794
2006	0.867	0.858	0.732	0.813	0.805	0.797
2007	0.869	0.859	0.737	0.813	0.822	0.800
2008	0.870	0.859	0.741	0.814	0.835	0.801
2009	0.871	0.859	0.744	0.814	0.844	0.803
2010	0.872	0.860	0.745	0.814	0.850	0.804
2011	0.872	0.860	0.746	0.814	0.854	0.804
2012	0.873	0.860	0.747	0.814	0.856	0.804
2013	0.873	0.860	0.747	0.814	0.858	0.805
2014	0.873	0.860	0.748	0.814	0.859	0.805
2015	0.873	0.860	0.748	0.814	0.859	0.805
	F. Benchmark without Rest of World					
1990	0.849	0.852	0.689	0.671	0.654	–
1991	0.849	0.852	0.689	0.676	0.654	–
1992	0.849	0.852	0.689	0.684	0.655	–
1993	0.849	0.852	0.689	0.695	0.655	–
1994	0.849	0.852	0.689	0.711	0.656	–
1995	0.849	0.852	0.689	0.730	0.657	–
1996	0.850	0.852	0.690	0.752	0.658	–
1997	0.850	0.853	0.690	0.775	0.661	–
1998	0.851	0.853	0.691	0.794	0.666	–
1999	0.852	0.854	0.693	0.810	0.673	–
2000	0.853	0.854	0.695	0.821	0.683	–
2001	0.856	0.856	0.698	0.829	0.699	–
2002	0.859	0.858	0.703	0.834	0.720	–
2003	0.863	0.860	0.708	0.838	0.746	–
2004	0.867	0.862	0.714	0.840	0.776	–
2005	0.871	0.865	0.721	0.841	0.807	–

See notes at the end of the table.

Degree of Openness to Foreign Direct Investment, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
F. Benchmark without Rest of World, Cont.						
2006	0.875	0.867	0.726	0.842	0.833	–
2007	0.878	0.869	0.731	0.842	0.854	–
2008	0.881	0.870	0.734	0.843	0.870	–
2009	0.882	0.871	0.736	0.843	0.880	–
2010	0.883	0.872	0.738	0.843	0.887	–
2011	0.884	0.872	0.738	0.843	0.892	–
2012	0.884	0.873	0.739	0.843	0.895	–
2013	0.885	0.873	0.739	0.843	0.896	–
2014	0.885	0.873	0.740	0.843	0.897	–
2015	0.885	0.873	0.740	0.843	0.898	–
G. Benchmark with UK Island Flows Reallocated						
1990	0.849	0.852	0.689	0.677	0.654	0.775
1991	0.849	0.852	0.689	0.687	0.654	0.775
1992	0.849	0.852	0.689	0.700	0.654	0.775
1993	0.849	0.852	0.689	0.717	0.655	0.775
1994	0.849	0.852	0.689	0.736	0.655	0.775
1995	0.849	0.852	0.689	0.756	0.656	0.775
1996	0.849	0.852	0.690	0.773	0.658	0.776
1997	0.850	0.852	0.690	0.786	0.660	0.776
1998	0.850	0.852	0.691	0.796	0.663	0.777
1999	0.851	0.853	0.692	0.803	0.669	0.778
2000	0.852	0.853	0.693	0.808	0.678	0.780
2001	0.853	0.853	0.696	0.810	0.690	0.783
2002	0.855	0.854	0.699	0.812	0.708	0.787
2003	0.858	0.855	0.704	0.813	0.729	0.792
2004	0.861	0.856	0.708	0.814	0.754	0.797
2005	0.863	0.857	0.713	0.814	0.778	0.802
2006	0.866	0.858	0.717	0.815	0.799	0.807
2007	0.868	0.859	0.721	0.815	0.817	0.811
2008	0.869	0.859	0.723	0.815	0.829	0.814
2009	0.870	0.859	0.725	0.815	0.838	0.816
2010	0.871	0.860	0.726	0.815	0.844	0.817
2011	0.871	0.860	0.727	0.815	0.847	0.818
2012	0.872	0.860	0.727	0.815	0.849	0.818
2013	0.872	0.860	0.728	0.815	0.851	0.819
2014	0.872	0.860	0.728	0.815	0.852	0.819
2015	0.872	0.860	0.728	0.815	0.852	0.819

See notes at the end of the table.

Degree of Openness to Foreign Direct Investment, Cont.

	U.S.	W. Europe	Japan	China	BRI	ROW
			H. Benchmark with Lower Chinese Profit Tax			
1990	.822	.830	.689	.634	.690	.790
1991	.822	.830	.689	.683	.690	.790
1992	.822	.830	.689	.724	.690	.790
1993	.822	.830	.689	.755	.691	.790
1994	.822	.830	.689	.777	.691	.790
1995	.823	.830	.689	.792	.692	.790
1996	.823	.831	.690	.801	.693	.791
1997	.824	.831	.690	.807	.695	.791
1998	.825	.832	.691	.811	.699	.792
1999	.826	.832	.692	.813	.704	.793
2000	.828	.834	.694	.815	.712	.795
2001	.832	.836	.697	.816	.724	.798
2002	.836	.839	.701	.816	.740	.802
2003	.842	.842	.706	.817	.761	.807
2004	.849	.846	.711	.817	.783	.812
2005	.855	.850	.717	.817	.806	.818
2006	.861	.853	.722	.817	.827	.823
2007	.865	.856	.726	.817	.843	.827
2008	.869	.858	.729	.817	.855	.830
2009	.871	.860	.731	.817	.863	.832
2010	.872	.860	.732	.817	.868	.833
2011	.873	.861	.733	.817	.872	.834
2012	.874	.861	.733	.817	.874	.834
2013	.874	.862	.734	.817	.875	.835
2014	.875	.862	.734	.817	.876	.835
2015	.875	.862	.734	.817	.876	.835
			I. Benchmark with Unrestricted Portfolios			
1990	0.849	0.852	0.689	0.666	0.654	0.775
1991	0.849	0.852	0.689	0.670	0.654	0.775
1992	0.849	0.852	0.689	0.676	0.654	0.775
1993	0.849	0.852	0.689	0.685	0.655	0.775
1994	0.849	0.852	0.689	0.696	0.655	0.775
1995	0.849	0.852	0.689	0.711	0.656	0.775
1996	0.849	0.852	0.690	0.728	0.658	0.776
1997	0.850	0.852	0.690	0.744	0.660	0.776
1998	0.850	0.852	0.691	0.759	0.663	0.777
1999	0.851	0.852	0.692	0.770	0.669	0.778

See notes at the end of the table.

TABLE A4

DEGREE OF OPENNESS TO FOREIGN DIRECT INVESTMENT, CONT.

	U.S.	W. Europe	Japan	China	BRI	ROW
I. Benchmark with Unrestricted Portfolios, Cont.						
2000	0.852	0.853	0.693	0.779	0.677	0.780
2001	0.853	0.853	0.696	0.785	0.690	0.783
2002	0.855	0.854	0.699	0.789	0.707	0.786
2003	0.857	0.855	0.704	0.791	0.728	0.791
2004	0.860	0.855	0.708	0.793	0.752	0.796
2005	0.863	0.856	0.713	0.794	0.777	0.801
2006	0.865	0.857	0.717	0.794	0.798	0.806
2007	0.867	0.858	0.721	0.794	0.815	0.809
2008	0.868	0.858	0.723	0.795	0.828	0.812
2009	0.869	0.858	0.725	0.795	0.836	0.814
2010	0.870	0.859	0.726	0.795	0.842	0.815
2011	0.870	0.859	0.727	0.795	0.845	0.816
2012	0.871	0.859	0.727	0.795	0.847	0.816
2013	0.871	0.859	0.728	0.795	0.849	0.817
2014	0.871	0.859	0.728	0.795	0.850	0.817
2015	0.871	0.859	0.728	0.795	0.850	0.817
J. Benchmark with Lower Elasticity of $h_i^j(q)$						
1990	0.849	0.852	0.689	0.667	0.654	0.775
1991	0.849	0.852	0.689	0.672	0.654	0.775
1992	0.849	0.852	0.689	0.678	0.655	0.775
1993	0.849	0.852	0.689	0.688	0.655	0.775
1994	0.849	0.852	0.689	0.702	0.655	0.775
1995	0.849	0.852	0.689	0.719	0.656	0.775
1996	0.849	0.852	0.690	0.738	0.658	0.776
1997	0.850	0.852	0.690	0.756	0.660	0.776
1998	0.850	0.852	0.691	0.773	0.664	0.777
1999	0.851	0.853	0.692	0.787	0.669	0.778
2000	0.852	0.853	0.693	0.797	0.678	0.780
2001	0.853	0.853	0.696	0.803	0.691	0.783
2002	0.855	0.854	0.699	0.808	0.709	0.787
2003	0.858	0.855	0.704	0.810	0.731	0.792
2004	0.861	0.856	0.708	0.812	0.756	0.797
2005	0.864	0.857	0.713	0.813	0.781	0.802
2006	0.867	0.858	0.717	0.814	0.803	0.807
2007	0.869	0.859	0.721	0.814	0.821	0.811
2008	0.870	0.859	0.723	0.815	0.834	0.814
2009	0.871	0.859	0.725	0.815	0.843	0.816

See notes at the end of the table.

TABLE A4

DEGREE OF OPENNESS TO FOREIGN DIRECT INVESTMENT, CONT.

	U.S.	W. Europe	Japan	China	BRI	ROW
		J. Benchmark with Lower Elasticity of $h_i^j(q)$, Cont.				
2010	0.872	0.860	0.726	0.815	0.848	0.817
2011	0.872	0.860	0.727	0.815	0.852	0.818
2012	0.873	0.860	0.727	0.815	0.854	0.818
2013	0.873	0.860	0.728	0.815	0.856	0.819
2014	0.873	0.860	0.728	0.815	0.857	0.819
2015	0.873	0.860	0.728	0.815	0.857	0.819

NOTE.—Degree of openness parameters are chosen to align trends in data and model.

Intensity Levels and Quid Pro Quo Costs

| | FDI of Advanced Countries | | | | | | FDI of China | | | FDI of BRI | | |
| | in China | | | in BRI | | | in BRI | | | in China | | |
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
A. Model without Quid Pro Quo or Spillovers												
1990	1	0	0	1	0	0	1	0	0	1	0	0
1991	1	0	0	1	0	0	1	0	0	1	0	0
1992	1	0	0	1	0	0	1	0	0	1	0	0
1993	1	0	0	1	0	0	1	0	0	1	0	0
1994	1	0	0	1	0	0	1	0	0	1	0	0
1995	1	0	0	1	0	0	1	0	0	1	0	0
1996	1	0	0	1	0	0	1	0	0	1	0	0
1997	1	0	0	1	0	0	1	0	0	1	0	0
1998	1	0	0	1	0	0	1	0	0	1	0	0
1999	1	0	0	1	0	0	1	0	0	1	0	0
2000	1	0	0	1	0	0	1	0	0	1	0	0
2001	1	0	0	1	0	0	1	0	0	1	0	0
2002	1	0	0	1	0	0	1	0	0	1	0	0
2003	1	0	0	1	0	0	1	0	0	1	0	0
2004	1	0	0	1	0	0	1	0	0	1	0	0
2005	1	0	0	1	0	0	1	0	0	1	0	0
2006	1	0	0	1	0	0	1	0	0	1	0	0
2007	1	0	0	1	0	0	1	0	0	1	0	0
2008	1	0	0	1	0	0	1	0	0	1	0	0
2009	1	0	0	1	0	0	1	0	0	1	0	0
2010	1	0	0	1	0	0	1	0	0	1	0	0
2011	1	0	0	1	0	0	1	0	0	1	0	0
2012	1	0	0	1	0	0	1	0	0	1	0	0
2013	1	0	0	1	0	0	1	0	0	1	0	0
2014	1	0	0	1	0	0	1	0	0	1	0	0
2015	1	0	0	1	0	0	1	0	0	1	0	0
B. Model with Quid Pro Quo and Spillovers (Benchmark)												
1990	.23	.002	.024	.31	.006	.075	.37	.011	.138	.25	.002	.034
1991	.28	.004	.048	.32	.006	.082	.33	.007	.094	.30	.005	.063
1992	.31	.005	.069	.33	.007	.090	.33	.006	.085	.32	.006	.083
1993	.33	.007	.091	.34	.008	.099	.32	.006	.084	.34	.008	.100
1994	.35	.009	.113	.34	.008	.107	.33	.007	.086	.35	.009	.118
1995	.36	.011	.139	.35	.009	.115	.33	.007	.089	.36	.011	.138
1996	.38	.013	.167	.35	.009	.121	.33	.007	.093	.38	.013	.160

See notes at the end of the table.

	FDI of Advanced Countries in China			in BRI			FDI of China in BRI			FDI of BRI in China		
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
B. Model with Quid Pro Quo and Spillovers (Benchmark), Cont.												
1997	.39	.016	.197	.36	.010	.127	.33	.007	.097	.39	.015	.185
1998	.41	.019	.231	.36	.010	.134	.34	.008	.101	.40	.017	.213
1999	.42	.022	.268	.36	.011	.141	.34	.008	.105	.41	.020	.243
2000	.43	.025	.305	.37	.012	.150	.34	.009	.111	.42	.022	.272
2001	.43	.028	.340	.37	.013	.163	.34	.009	.120	.42	.024	.300
2002	.43	.030	.372	.37	.014	.182	.35	.010	.135	.42	.026	.324
2003	.43	.033	.403	.38	.017	.209	.35	.012	.156	.42	.028	.345
2004	.43	.035	.432	.38	.019	.243	.36	.014	.183	.41	.029	.364
2005	.42	.037	.460	.38	.022	.283	.36	.017	.216	.40	.031	.384
2006	.41	.039	.488	.37	.026	.325	.35	.020	.252	.39	.032	.405
2007	.39	.041	.515	.36	.029	.367	.34	.022	.289	.38	.034	.427
2008	.38	.043	.540	.35	.032	.406	.33	.025	.325	.36	.035	.451
2009	.36	.044	.560	.34	.034	.440	.33	.027	.357	.35	.037	.474
2010	.35	.045	.575	.33	.036	.466	.32	.029	.386	.34	.038	.493
2011	.34	.045	.586	.33	.037	.485	.31	.031	.409	.33	.039	.511
2012	.33	.046	.592	.32	.038	.498	.31	.032	.427	.33	.040	.524
2013	.33	.046	.594	.32	.039	.507	.31	.033	.442	.32	.041	.535
2014	.33	.046	.594	.31	.039	.513	.31	.034	.454	.32	.041	.542
2015	.32	.045	.593	.31	.039	.516	.30	.035	.463	.32	.042	.549
C. Benchmark without FDI Spillovers												
1990	.24	.002	.029	.32	.006	.075	.36	.010	.131	.27	.003	.042
1991	.28	.004	.049	.32	.006	.082	.34	.008	.103	.30	.005	.064
1992	.31	.005	.066	.33	.007	.091	.34	.008	.097	.32	.006	.079
1993	.32	.006	.084	.34	.008	.100	.34	.008	.098	.33	.007	.094
1994	.34	.008	.103	.34	.008	.108	.34	.008	.101	.34	.008	.108
1995	.35	.010	.123	.35	.009	.116	.34	.008	.103	.36	.010	.123
1996	.37	.012	.151	.35	.010	.122	.34	.008	.103	.37	.012	.147
1997	.39	.015	.191	.36	.010	.128	.34	.008	.101	.39	.014	.182
1998	.41	.019	.234	.36	.010	.134	.34	.008	.101	.40	.018	.219
1999	.42	.022	.276	.36	.011	.141	.34	.008	.104	.41	.020	.254
2000	.43	.025	.314	.37	.012	.149	.34	.009	.110	.42	.023	.285
2001	.43	.028	.347	.37	.013	.162	.34	.009	.120	.42	.025	.312
2002	.43	.031	.377	.37	.014	.181	.35	.010	.135	.42	.027	.335
2003	.43	.033	.405	.38	.016	.207	.35	.012	.157	.42	.029	.354

See notes at the end of the table.

Intensity Levels and Quid Pro Quo Costs, Cont.

	FDI of Advanced Countries in China			FDI of Advanced Countries in BRI			FDI of China in BRI			FDI of BRI in China		
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$

C. Benchmark without FDI Spillovers, Cont.

2004	.43	.035	.432	.38	.019	.240	.36	.014	.185	.41	.030	.370
2005	.42	.037	.458	.38	.022	.279	.36	.017	.218	.40	.031	.387
2006	.41	.039	.483	.37	.025	.320	.35	.020	.255	.39	.032	.404
2007	.39	.040	.508	.36	.028	.362	.34	.023	.293	.37	.033	.422
2008	.38	.042	.532	.35	.031	.402	.34	.025	.331	.36	.034	.440
2009	.36	.043	.551	.34	.034	.437	.33	.028	.365	.35	.036	.459
2010	.35	.044	.565	.33	.036	.465	.32	.030	.396	.34	.037	.477
2011	.34	.045	.576	.33	.037	.485	.31	.032	.419	.33	.038	.493
2012	.33	.045	.582	.32	.038	.498	.31	.033	.438	.32	.039	.507
2013	.33	.045	.585	.32	.039	.507	.31	.034	.453	.32	.039	.518
2014	.33	.045	.585	.31	.039	.513	.31	.035	.465	.32	.040	.527
2015	.32	.045	.584	.31	.039	.516	.31	.036	.474	.32	.041	.534

D. Benchmark with Quid Pro Quo Policy Fixed

1990	.22	.002	.023	.31	.005	.069	.36	.010	.130	.25	.002	.032
1991	.28	.003	.047	.32	.006	.076	.33	.007	.088	.30	.005	.060
1992	.31	.005	.067	.32	.006	.084	.32	.006	.079	.32	.006	.079
1993	.33	.007	.087	.33	.007	.092	.32	.006	.078	.33	.007	.095
1994	.35	.008	.109	.34	.008	.100	.32	.006	.079	.35	.009	.111
1995	.36	.010	.132	.34	.008	.107	.32	.006	.082	.36	.010	.129
1996	.38	.012	.157	.35	.009	.113	.33	.006	.085	.37	.012	.149
1997	.39	.015	.184	.35	.009	.118	.33	.007	.087	.38	.014	.171
1998	.40	.017	.217	.36	.010	.123	.33	.007	.088	.39	.016	.197
1999	.41	.020	.251	.36	.010	.129	.33	.007	.090	.41	.018	.226
2000	.42	.023	.283	.36	.011	.136	.33	.007	.094	.42	.020	.252
2001	.43	.025	.311	.37	.011	.145	.34	.008	.101	.42	.022	.275
2002	.44	.027	.334	.38	.013	.159	.35	.009	.111	.43	.024	.293
2003	.44	.029	.352	.39	.014	.177	.36	.010	.126	.43	.025	.306
2004	.45	.030	.366	.40	.016	.200	.37	.011	.144	.43	.026	.316
2005	.45	.031	.376	.40	.018	.223	.38	.013	.164	.44	.026	.323
2006	.45	.031	.383	.41	.020	.246	.39	.015	.184	.44	.027	.328
2007	.45	.032	.388	.42	.021	.266	.40	.016	.203	.44	.027	.332
2008	.45	.032	.391	.42	.023	.282	.40	.018	.221	.44	.027	.336
2009	.45	.032	.392	.43	.024	.296	.41	.019	.236	.44	.028	.339
2010	.45	.032	.393	.43	.025	.307	.41	.020	.250	.44	.028	.342

See notes at the end of the table.

INTENSITY LEVELS AND QUID PRO QUO COSTS, CONT.

	FDI of Advanced Countries in China			in BRI			FDI of China in BRI			FDI of BRI in China		
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
D. Benchmark with Quid Pro Quo Policy Fixed, Cont.												
2011	.45	.032	.393	.43	.026	.315	.42	.021	.262	.44	.028	.346
2012	.45	.032	.393	.44	.026	.321	.42	.022	.272	.44	.029	.349
2013	.45	.032	.393	.44	.027	.326	.42	.023	.280	.44	.029	.353
2014	.45	.032	.392	.44	.027	.330	.43	.023	.288	.44	.029	.357
2015	.45	.032	.391	.44	.027	.333	.43	.024	.295	.44	.029	.360
E. Benchmark with Korea and Japan Combined												
1990	.19	.001	.018	.30	.006	.077	.36	.014	.173	.21	.002	.024
1991	.25	.003	.043	.31	.006	.085	.32	.008	.104	.27	.004	.054
1992	.28	.005	.064	.31	.007	.092	.31	.007	.090	.30	.006	.076
1993	.31	.006	.085	.32	.008	.100	.31	.006	.086	.31	.007	.095
1994	.33	.008	.109	.32	.008	.107	.31	.007	.086	.33	.009	.115
1995	.34	.011	.136	.33	.009	.115	.31	.007	.089	.34	.011	.136
1996	.36	.013	.166	.33	.009	.123	.31	.007	.093	.36	.012	.159
1997	.37	.016	.198	.34	.010	.131	.32	.007	.098	.37	.014	.184
1998	.39	.018	.231	.34	.011	.139	.32	.008	.102	.38	.017	.209
1999	.40	.021	.269	.35	.011	.147	.32	.008	.105	.39	.019	.237
2000	.41	.025	.308	.35	.012	.158	.32	.008	.110	.40	.021	.266
2001	.42	.028	.346	.36	.013	.172	.33	.009	.117	.40	.024	.294
2002	.42	.031	.381	.36	.015	.192	.33	.010	.130	.41	.025	.317
2003	.42	.033	.413	.37	.017	.220	.34	.011	.149	.41	.027	.338
2004	.42	.036	.442	.38	.020	.256	.34	.013	.174	.40	.029	.357
2005	.42	.038	.469	.38	.023	.295	.35	.016	.202	.40	.030	.380
2006	.41	.040	.494	.38	.026	.334	.35	.018	.232	.39	.032	.405
2007	.40	.041	.519	.37	.029	.370	.34	.020	.261	.38	.034	.432
2008	.39	.043	.542	.36	.031	.401	.34	.022	.289	.37	.036	.458
2009	.38	.044	.562	.35	.033	.427	.33	.024	.315	.36	.038	.484
2010	.37	.045	.578	.34	.035	.448	.32	.026	.337	.35	.039	.506
2011	.36	.046	.587	.34	.036	.463	.32	.027	.357	.35	.041	.523
2012	.35	.046	.592	.33	.036	.474	.31	.028	.374	.34	.041	.535
2013	.35	.046	.594	.33	.037	.481	.31	.029	.388	.34	.042	.544
2014	.34	.046	.592	.33	.037	.486	.31	.030	.401	.34	.042	.551
2015	.34	.046	.590	.33	.037	.490	.31	.031	.412	.34	.043	.555

See notes at the end of the table.

INTENSITY LEVELS AND QUID PRO QUO COSTS, CONT.

	FDI of Advanced Countries in China			FDI of Advanced Countries in BRI			FDI of China in BRI			FDI of BRI in China		
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$

F. Benchmark without Rest of World

	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
1990	.20	.001	.017	.29	.004	.053	.35	.009	.111	.23	.002	.026
1991	.26	.003	.038	.30	.004	.059	.31	.005	.071	.29	.004	.052
1992	.29	.004	.056	.31	.005	.067	.30	.005	.063	.31	.005	.069
1993	.31	.006	.074	.32	.006	.075	.30	.005	.062	.32	.006	.083
1994	.33	.007	.095	.32	.006	.084	.30	.005	.064	.34	.008	.098
1995	.35	.009	.119	.33	.007	.091	.30	.005	.066	.35	.009	.116
1996	.37	.012	.147	.34	.008	.098	.31	.005	.068	.36	.011	.137
1997	.38	.014	.178	.34	.008	.105	.31	.005	.071	.38	.013	.161
1998	.40	.017	.214	.35	.009	.111	.31	.006	.073	.39	.015	.189
1999	.41	.020	.252	.35	.009	.119	.31	.006	.076	.40	.018	.219
2000	.42	.023	.290	.35	.010	.128	.32	.006	.080	.41	.020	.249
2001	.43	.027	.327	.36	.011	.141	.32	.007	.088	.41	.022	.277
2002	.43	.029	.361	.36	.013	.160	.32	.008	.100	.42	.024	.303
2003	.43	.032	.393	.37	.015	.186	.33	.009	.118	.41	.026	.325
2004	.43	.034	.424	.37	.017	.220	.34	.011	.142	.41	.028	.346
2005	.42	.037	.453	.37	.021	.260	.34	.013	.172	.40	.029	.367
2006	.40	.039	.482	.37	.024	.303	.33	.016	.205	.39	.031	.389
2007	.39	.041	.510	.36	.027	.347	.33	.018	.241	.37	.032	.412
2008	.38	.042	.535	.35	.030	.388	.32	.021	.277	.36	.034	.435
2009	.36	.044	.556	.34	.033	.423	.31	.024	.311	.35	.036	.458
2010	.35	.044	.571	.33	.035	.451	.31	.026	.341	.34	.037	.478
2011	.34	.045	.582	.32	.036	.472	.30	.028	.367	.33	.038	.496
2012	.33	.045	.588	.32	.037	.486	.30	.029	.388	.32	.039	.510
2013	.33	.045	.591	.32	.038	.496	.30	.030	.406	.32	.040	.521
2014	.33	.045	.591	.31	.038	.503	.30	.032	.421	.32	.040	.530
2015	.32	.045	.589	.31	.038	.508	.30	.033	.434	.32	.041	.537

G. Benchmark with UK Island Flows Reallocated

	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
1990	.23	.002	.024	.31	.005	.072	.36	.010	.133	.25	.002	.034
1991	.28	.004	.050	.32	.006	.079	.33	.007	.091	.30	.005	.065
1992	.31	.006	.073	.33	.007	.087	.32	.006	.082	.33	.007	.087
1993	.34	.008	.098	.34	.007	.096	.32	.006	.081	.34	.008	.108
1994	.36	.010	.124	.34	.008	.104	.32	.006	.083	.36	.010	.129
1995	.37	.012	.153	.35	.009	.111	.33	.007	.086	.37	.012	.151
1996	.39	.015	.183	.35	.009	.118	.33	.007	.090	.38	.014	.174

See notes at the end of the table.

Intensity Levels and Quid Pro Quo Costs, Cont.

	FDI of Advanced Countries in China			in BRI			FDI of China in BRI			FDI of BRI in China		
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$

G. Benchmark with UK Island Flows Reallocated, Cont.

	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
1997	.38	.014	.178	.34	.008	.105	.31	.005	.071	.38	.013	.161
1998	.40	.017	.214	.35	.009	.111	.31	.006	.073	.39	.015	.189
1999	.41	.020	.252	.35	.009	.119	.31	.006	.076	.40	.018	.219
2000	.42	.023	.290	.35	.010	.128	.32	.006	.080	.41	.020	.249
2001	.43	.027	.327	.36	.011	.141	.32	.007	.088	.41	.022	.277
2002	.43	.029	.361	.36	.013	.160	.32	.008	.100	.42	.024	.303
2003	.43	.032	.393	.37	.015	.186	.33	.009	.118	.41	.026	.325
2004	.43	.034	.424	.37	.017	.220	.34	.011	.142	.41	.028	.346
2005	.42	.037	.453	.37	.021	.260	.34	.013	.172	.40	.029	.367
2006	.40	.039	.482	.37	.024	.303	.33	.016	.205	.39	.031	.389
2007	.39	.041	.510	.36	.027	.347	.33	.018	.241	.37	.032	.412
2008	.38	.042	.535	.35	.030	.388	.32	.021	.277	.36	.034	.435
2009	.36	.044	.556	.34	.033	.423	.31	.024	.311	.35	.036	.458
2010	.35	.044	.571	.33	.035	.451	.31	.026	.341	.34	.037	.478
2011	.34	.045	.582	.32	.036	.472	.30	.028	.367	.33	.038	.496
2012	.33	.045	.588	.32	.037	.486	.30	.029	.388	.32	.039	.510
2013	.33	.045	.591	.32	.038	.496	.30	.030	.406	.32	.040	.521
2014	.33	.045	.591	.31	.038	.503	.30	.032	.421	.32	.040	.530
2015	.32	.045	.589	.31	.038	.508	.30	.033	.434	.32	.041	.537

H. Benchmark with Lower Chinese Profit Tax

	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
1990	.39	.002	.023	.52	.009	.103	.51	.008	.096	.38	.002	.021
1991	.42	.003	.032	.52	.008	.100	.53	.009	.111	.42	.002	.031
1992	.45	.004	.044	.52	.008	.098	.54	.011	.125	.45	.004	.044
1993	.47	.005	.058	.51	.008	.097	.54	.011	.136	.47	.005	.061
1994	.49	.006	.074	.51	.008	.097	.55	.012	.141	.50	.007	.079
1995	.51	.008	.093	.51	.008	.097	.55	.012	.140	.52	.008	.100
1996	.53	.009	.113	.51	.008	.098	.54	.012	.137	.53	.010	.122
1997	.54	.011	.134	.51	.008	.100	.54	.011	.135	.55	.012	.146
1998	.55	.013	.157	.51	.009	.103	.53	.011	.134	.56	.014	.170
1999	.55	.015	.180	.51	.009	.107	.53	.011	.135	.56	.017	.195
2000	.56	.017	.204	.51	.010	.114	.52	.012	.139	.56	.019	.221
2001	.56	.019	.230	.50	.010	.124	.52	.012	.146	.56	.021	.247
2002	.55	.022	.256	.49	.011	.137	.51	.013	.157	.55	.023	.275

See notes at the end of the table.

Intensity Levels and Quid Pro Quo Costs, Cont.

	FDI of Advanced Countries in China			in BRI			FDI of China in BRI			FDI of BRI in China		
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$

H. Benchmark with Lower Chinese Profit Tax, Cont.

2003	.54	.024	.285	.48	.013	.156	.49	.014	.174	.54	.026	.305
2004	.52	.026	.315	.47	.015	.181	.48	.016	.197	.52	.028	.336
2005	.50	.029	.347	.45	.017	.210	.46	.018	.225	.50	.031	.370
2006	.47	.031	.380	.43	.020	.244	.44	.021	.257	.48	.033	.405
2007	.44	.034	.414	.41	.022	.279	.41	.023	.291	.45	.036	.440
2008	.42	.036	.448	.39	.025	.315	.39	.026	.326	.42	.038	.474
2009	.39	.038	.481	.37	.028	.351	.37	.028	.361	.40	.041	.507
2010	.37	.040	.511	.35	.030	.384	.35	.031	.394	.38	.042	.537
2011	.35	.042	.538	.33	.032	.413	.33	.033	.423	.36	.044	.564
2012	.34	.043	.559	.32	.033	.438	.32	.034	.448	.34	.045	.586
2013	.33	.044	.575	.31	.035	.458	.31	.036	.469	.33	.046	.602
2014	.32	.045	.586	.30	.036	.474	.31	.037	.485	.33	.047	.614
2015	.32	.045	.593	.30	.036	.485	.30	.037	.497	.32	.047	.621

I. Benchmark with Unrestricted Portfolios

1990	0.22	0.002	0.022	0.31	0.006	0.073	0.37	0.012	0.148	0.25	0.002	0.031
1991	0.28	0.004	0.048	0.32	0.006	0.080	0.33	0.007	0.095	0.30	0.005	0.062
1992	0.31	0.005	0.070	0.33	0.007	0.088	0.32	0.006	0.084	0.32	0.006	0.083
1993	0.33	0.007	0.092	0.33	0.007	0.096	0.32	0.006	0.083	0.34	0.008	0.101
1994	0.35	0.009	0.115	0.34	0.008	0.105	0.32	0.006	0.084	0.35	0.009	0.119
1995	0.36	0.011	0.141	0.34	0.009	0.112	0.32	0.007	0.087	0.36	0.011	0.139
1996	0.37	0.013	0.169	0.34	0.009	0.119	0.32	0.007	0.091	0.37	0.013	0.161
1997	0.38	0.016	0.198	0.34	0.010	0.125	0.32	0.007	0.095	0.38	0.015	0.184
1998	0.39	0.018	0.232	0.34	0.010	0.132	0.32	0.007	0.098	0.38	0.017	0.211
1999	0.39	0.021	0.269	0.34	0.011	0.140	0.31	0.008	0.102	0.39	0.019	0.243
2000	0.40	0.025	0.307	0.34	0.012	0.151	0.31	0.008	0.107	0.39	0.022	0.274
2001	0.40	0.027	0.342	0.34	0.013	0.164	0.31	0.009	0.116	0.39	0.024	0.302
2002	0.40	0.030	0.370	0.34	0.014	0.183	0.31	0.010	0.129	0.38	0.026	0.324
2003	0.39	0.031	0.389	0.34	0.016	0.207	0.31	0.011	0.146	0.38	0.027	0.337
2004	0.39	0.032	0.399	0.35	0.018	0.236	0.32	0.013	0.166	0.38	0.027	0.343
2005	0.39	0.033	0.408	0.35	0.021	0.265	0.32	0.014	0.185	0.38	0.028	0.349
2006	0.39	0.034	0.430	0.36	0.023	0.293	0.33	0.015	0.196	0.38	0.029	0.368
2007	0.40	0.039	0.483	0.37	0.025	0.318	0.33	0.015	0.198	0.39	0.033	0.412
2008	0.41	0.043	0.535	0.37	0.027	0.337	0.33	0.016	0.207	0.39	0.037	0.458

See notes at the end of the table.

Intensity Levels and Quid Pro Quo Costs, Cont.

	FDI of Advanced Countries in China						FDI of China in BRI			FDI of BRI in China		
				in BRI								
	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$

I. Benchmark with Unrestricted Portfolios, Cont.

	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
2009	0.41	0.043	0.537	0.37	0.028	0.353	0.34	0.018	0.229	0.40	0.037	0.463
2010	0.40	0.042	0.521	0.38	0.029	0.365	0.35	0.020	0.254	0.39	0.036	0.453
2011	0.40	0.040	0.505	0.38	0.030	0.373	0.35	0.022	0.277	0.39	0.035	0.444
2012	0.40	0.039	0.491	0.38	0.030	0.380	0.36	0.023	0.298	0.39	0.035	0.437
2013	0.40	0.038	0.479	0.38	0.030	0.385	0.36	0.025	0.315	0.39	0.034	0.432
2014	0.40	0.038	0.470	0.38	0.031	0.389	0.37	0.026	0.330	0.39	0.034	0.430
2015	0.39	0.037	0.464	0.38	0.031	0.393	0.37	0.027	0.342	0.39	0.034	0.429

J. Benchmark with Lower Elasticity of $h_i^j(q)$

	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$	q	$h(q)$	$h'(q)$
1990	0.22	0.002	0.024	0.32	0.006	0.073	0.37	0.011	0.134	0.25	0.003	0.034
1991	0.28	0.004	0.048	0.32	0.007	0.080	0.34	0.008	0.091	0.30	0.005	0.063
1992	0.31	0.006	0.069	0.33	0.007	0.087	0.32	0.007	0.081	0.33	0.007	0.083
1993	0.33	0.007	0.089	0.34	0.008	0.095	0.32	0.007	0.079	0.34	0.008	0.100
1994	0.35	0.009	0.111	0.35	0.009	0.104	0.33	0.007	0.082	0.36	0.010	0.117
1995	0.37	0.012	0.135	0.35	0.009	0.112	0.33	0.007	0.086	0.37	0.012	0.135
1996	0.39	0.014	0.163	0.36	0.010	0.119	0.33	0.008	0.090	0.38	0.013	0.156
1997	0.40	0.017	0.192	0.36	0.011	0.126	0.34	0.008	0.095	0.39	0.016	0.179
1998	0.41	0.020	0.224	0.37	0.011	0.132	0.34	0.008	0.099	0.41	0.018	0.204
1999	0.43	0.023	0.257	0.37	0.012	0.140	0.34	0.009	0.104	0.42	0.020	0.230
2000	0.44	0.026	0.290	0.37	0.013	0.149	0.35	0.009	0.110	0.42	0.023	0.256
2001	0.44	0.029	0.322	0.38	0.014	0.162	0.35	0.010	0.120	0.43	0.025	0.280
2002	0.45	0.031	0.352	0.39	0.016	0.180	0.36	0.011	0.134	0.43	0.027	0.301
2003	0.45	0.034	0.380	0.39	0.018	0.205	0.36	0.013	0.154	0.43	0.028	0.320
2004	0.44	0.036	0.406	0.39	0.021	0.238	0.37	0.015	0.180	0.43	0.030	0.337
2005	0.44	0.038	0.431	0.40	0.024	0.275	0.37	0.018	0.211	0.42	0.031	0.354
2006	0.43	0.040	0.456	0.39	0.027	0.315	0.37	0.021	0.245	0.41	0.033	0.373
2007	0.41	0.042	0.480	0.39	0.030	0.354	0.36	0.024	0.279	0.40	0.034	0.394
2008	0.40	0.044	0.502	0.38	0.033	0.389	0.36	0.026	0.311	0.38	0.036	0.417
2009	0.39	0.045	0.520	0.37	0.036	0.419	0.35	0.029	0.341	0.37	0.037	0.439
2010	0.37	0.046	0.534	0.36	0.037	0.442	0.34	0.031	0.367	0.36	0.039	0.457
2011	0.36	0.046	0.545	0.35	0.039	0.459	0.33	0.032	0.387	0.35	0.040	0.474
2012	0.36	0.047	0.551	0.34	0.040	0.471	0.33	0.034	0.404	0.35	0.041	0.488
2013	0.35	0.047	0.554	0.34	0.040	0.479	0.33	0.035	0.417	0.34	0.042	0.498
2014	0.35	0.047	0.554	0.34	0.040	0.484	0.33	0.035	0.428	0.34	0.042	0.506
2015	0.35	0.047	0.553	0.34	0.041	0.487	0.33	0.036	0.437	0.34	0.043	0.513

NOTE.—Quid pro quo costs are chosen to align trends in data and model.

Chinese Statistics for Variations on the Benchmark
Model with Quid Pro Quo and Spillovers, 1990–2010

	Benchmark Model	Two Variations on the Benchmark	
		Unrestricted Portfolio Flows	Lower Elasticity on Quid Pro Quo Cost Function
2010 Predictions for:			
% Share of world Proprietary capital	5.9	9.3	5.7
Capital-GDP ratios			
Proprietary capital	.16	.24	.15
Transferred capital	.45	.37	.46
Cumulated outward to inward FDI	.52	1.16	.47
% Welfare gain due to quid pro quo	4.5	4.0	4.6

NOTE.—Results for the benchmark model are also shown in Tables 4–7 and Figure 3 in the main text. The experiments are as follows: "Unrestricted Portfolio Flows" relaxes all restrictions on borrowing and lending, and "Lower Elasticity on Quid Pro Quo Cost Function" uses an elasticity of $\nu = 9$ for the $h_{it}^{j}(q)$ cost function and an alternative path for $\bar{h}_t$ that ensures inward FDI shares to China are consistent with the data (see equation A.1 and Figure A3 in the main text). The same procedure for choosing parameters in the benchmark model is applied in both variations on the benchmark. See Appendix A in the main text for details.

FIGURE A1. SHARE OF INWARD FDI TO CHINA FROM THE
UNITED STATES, WESTERN EUROPE, AND JAPAN
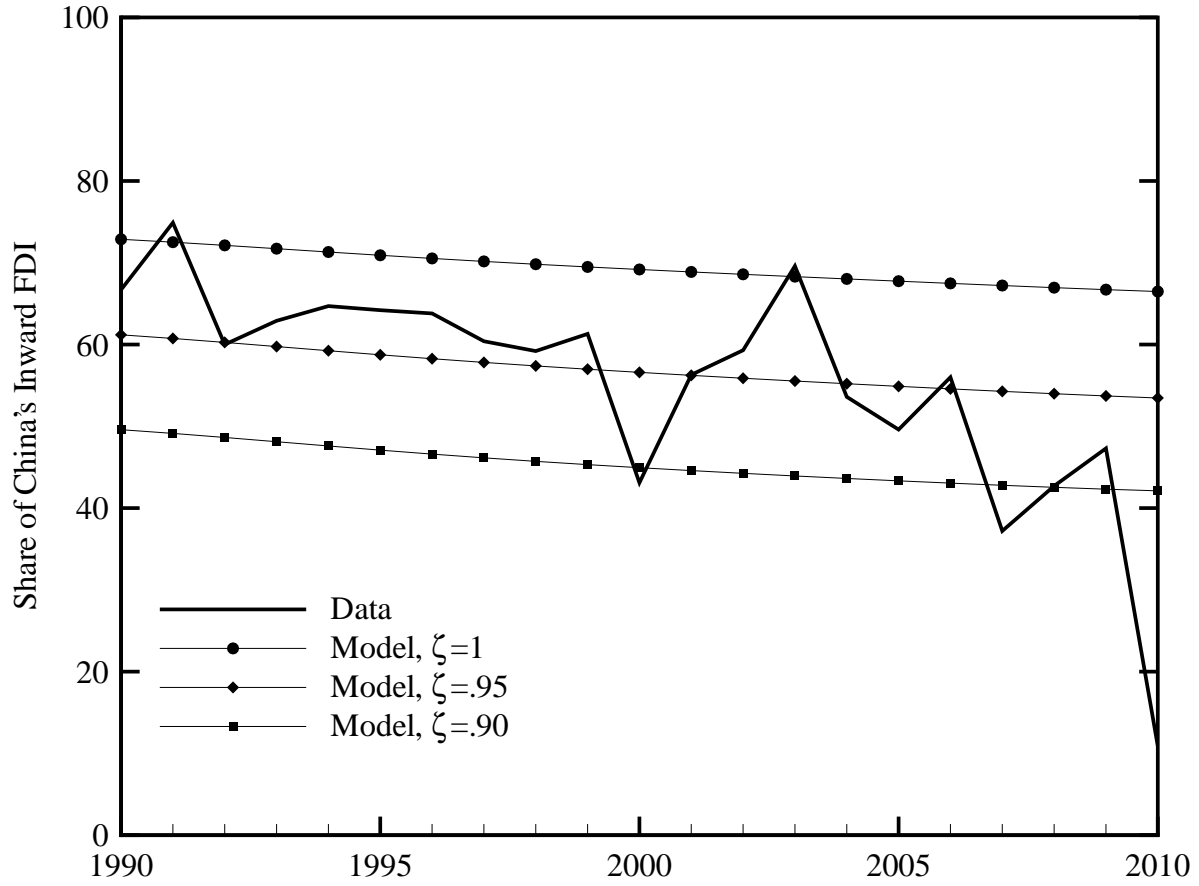
Model without Quid Pro Quo or Spillovers

FIGURE A2. CUMULATIVE OUTWARD FDI RELATIVE TO TREND GDP,
Normalized by 2010 Estimate of Inward FDI to China

Model without Quid Pro Quo or Spillovers