Evidence on the Convergence of China's Dual Trade Regimes

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August 2008

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Abstract:

Since China embarked on economic reform in late 1978, China has consistently been the most rapidly growing economy, sustaining an average annual growth rate of 10 percent from 1978 through the recent years. One of the driving forces leading to China's recent economic development is the expansion of its export-oriented sector. Recent studies on China's export performance focus on one of China's trade regime, processing trade regime, while China's another trade regime, ordinary trade regime, did catch the same amount of attention. However, even a cursory look at Chinese ordinary export data suggests interesting developments under the ordinary regime. The purpose of this paper is to investigate the dynamics of the dualism of Chinese exports and provide adequate evidence on the convergence of these two trade regimes. The convergence of these two trade regimes will have a profound implication on the role played by China in the global trade system in the future. With the gradual unification of two trade regimes, the domestic enterprises who dominate the ordinary trade regime might catch up the foreigner enterprises and ultimately obtain foreign technologies and develop their own technological capabilities, which is the ultimate goal of the government policy. Our preliminary results show that there is obvious convergence of the two trade regimes, even though at significantly low speed. There is heterogeneity in the speed of convergence in high and medium-high technology sectors.

Keywords: Processing Trade, Ordinary Trade, China

JEL classification:

I. Introduction

Since China embarked on economic reform in late 1978, China has consistently been the most rapidly growing economy, sustaining an average annual growth rate of 10 percent from 1978 through the recent years. One of the driving forces leading to China's recent economic development is the expansion of its export-oriented sector. Recent studies on China's export performance focus on China's export structure. For example, Schott (2006) finds that China's export structure resembles the exports structure of the high-income countries even though China still belongs to the low-income countries in terms of factor endowment and level of development. Rodrik (2006) reaches the similar conclusion, countries which have the similar export structure as China already achieved much higher level of GDP per capita. Wang and Wei (2008) show that the fraction of products that the advanced countries export while China does not is shrinking steadily. In these studies, one of China's trade regimes, processing trade, is intensively examined while China's another trade regime, ordinary trade regime, did catch the same amount of attention.

However, even a cursory look at Chinese ordinary export data suggests interesting developments in that area. As Figure 1 reveals, even though the share of ordinary export in total exports has declined from 68.6% in 1988 to 41.6% in 1996, it has been stable since then. That suggests that ordinary exports are growing at the same rate as processing exports. In addition, as shown in Figure 2 there is a clear trend away from natural resources and low-tech goods towards high technology sectors. In Figures 2 and 3 we show shares of various industries on the SITC 2–digit level in ordinary and processing exports respectively between 1988 and 2005. As Figure 2 reveals, there is a substantial

reduction in importance of natural resource sectors, like petroleum, textile fibers, vegetables and fruits, feeding animal stuff. There is also a considerable decrease in the share of textile yarn and fabrics, the largest sector in Chinese ordinary export in 1988. On the other hand, the shares of manufacturing industries such as Manufacturing of metals, General industrial machinery, Electric machinery, Road vehicles, Apparel and clothing have been on the rise.

Another indication of some sort of convergence between the two regimes is the growth rates of high and medium technology exports. As the Table 1 illustrates high-tech export was the fastest growing component of Chinese ordinary trade, followed by medium-tech exports between 1992 and 2005.

Figures 1,2,3 and Table 1, to some extent, show the Chinese government' efforts unifying two trade regimes. The purpose of this paper is to investigate the dynamics of the dualism of Chinese exports and provide adequate evidence on the convergence of these two trade regimes.

The convergence of these two trade regimes will have a profound implication on the role played by China in the global trade system in the future. China is becoming a global player and a partner in the international trade system, recently taking over Germany as the third highest exporter in the world (CHECK THIS). Besides increasing the sheer amount of its trade, it is becoming a more sophisticated high technology exporter that led some western observers to express anxiety about the potential competition from China in the key exporting sectors that historically were prerogatives of industrial nations. As documented by many studies, China is breaking into more technologically advanced sectors, displacing other Asian companies, particularly, those

from Taiwan and Hong Kong. (See for example ……). The majority of economists, however, point out that the 'threat' from China is ill-founded once one looks at the types of the activities performed by China in those high technology sectors. Authors (…..) indicate that first of all, the exports in advanced technology sectors is dominated by foreign own companies, and second, China's involvement in those industries is still limited by either assembly operations or production of low end intermediate goods. Government policies towards establishing high-tech zones do help to bring multinationals' operations into China, however, the technology transfer and domestic technological upgrading has been slow.

With the gradual unification of two trade regimes, the domestic enterprises who dominate the ordinary trade regime might catch up the foreigner enterprises and ultimately obtain foreign technologies and develop their own technological capabilities, which is the ultimate goal of the government policy.

The paper is organized as follows. Section 2 reviews China's dual trade regimes. Section 3 describes the data and the empirical specification. Section 4 presents the estimation results. Section 5 concludes the paper.

II. China's Dual Trade Regimes

China's trade regime before 1979 was an extreme version of import substitution. In 1979, in order to promote export-oriented industry, an export processing trade regime was established. The dualistic trading regime plays an important role in China's foreign trade in the reform period.

The import substitution regime is also called "Ordinary Trade Regime" in China. Under the ordinary trade regime, companies are insulated from world prices and face

significant constraints on imports, freedom of management and access to financing. It is the state-owned foreign trade companies who intermediate the trade between the producers and world market. After 1994 exchange rate reform and VAT rebate program for all exports, more competitive and entrepreneurial practices were encouraged by the government, however, the ordinary trade regime is far from being open.

The processing trade regime is called "Export Promoting Regime." Under the processing trade regime, foreign parts and components are brought in, assembled in China, and re-exported to the rest of the world. Unlike the ordinary trade regime, the processing trade regime allows duty free import of raw materials and components, duty free import of investment goods, concessionary income tax rates, and tax holidays. In addition, it allows companies to circumvent 'the complex and unwieldy apparatus of import controls, canalization, and regulatory monopolies' (Barry Naughton).

In order to promote processing trade, the Chinese government adopted several policies. First, the state promised to make foreign exchange for the necessary imports available on a priority basis by incorporating it into the annual state foreign exchange import plan. Second, raw materials and components imported under the plan were allocated directly to the relevant export-producing firms in China rather than being allocated indirectly through the existing materials balance planning process. Third, the state guaranteed appropriate supplies of domestic raw materials, fuel, and electricity for these firms.[1]

In line with these policy reforms, other arrangements to promote China's trade liberalization were instituted. A new joint-venture law was issued in 1979. Four Special Economic Zones (SEZs) were established along the southeast coast of China in 1980

[1] Naughton (1996).

(Shenzhen, Zhuhai, Shantou and Xiamen). In 1984, fourteen coastal cities were open to outside world. In the meantime, China also opened the Yangtse Delta, the Pear River Delta, the Southern Fujian Triangle Area, the Liaodong Peninsula, and the Jiaodong Peninsula. In 1985, Coastal Economic and Technological Development Zones were established. Hainan Island became a separate province in 1985. The Pudong District of Shanghai was designed to be a new development zone in 1990. From 1994, the secondary "swap" market for foreign exchange was abolished. The exchange rate was unified near the lower swap-market rate, and access to foreign currency was greatly liberalized. However, restrictions on the capital account proved difficult to eliminate. Following the Asian Financial Crisis of 1997-1998, all Asian currencies, including the renminbi, came under intense downward pressure, and policy-makers decided not to allow the currency to depreciate. The managed float gradually became a de facto fixed exchange rate. In addition, national taxation system was shifted to a much larger reliance on value-added taxes. In 2004, the foreign-trade law came into effect. Under this law the Chinese government no longer restricts trade to a limited number of state-owned FTCs, except in a few agricultural commodities where state trading is still permitted.

After almost three decades, processing trade accounts for a large portion of Chinese foreign trade. Table 2 lists the shares of processing exports and imports in total exports and imports for the period 1988 – 2005. The share of processing exports increases from 30 percent to 55 percent.

III. Data and Empirical Specification

We use Chinese International Trade data set for the years 1992-2002 that is available at HS 6-digit level code. Even though the data for Chinese export is also

available for 1988-1991, it is recorded at SITC 5-digit level and after conversion into HS6 code, considerable amount of data is lost. Therefore, for consistency purposes we chose to stay with the sample of 1992-2002.

We employ panel data regression controlling for province and time fixed effects:

$$\mathrm{Ln}(\mathrm{ESI}_{it}) = \beta_0 + \beta_1' \mathrm{X}_{it} + \alpha_i + \alpha_t + \varepsilon_{it} \qquad (1)$$

The unit of observation is province *i* at time *t*. industry *j*. The dependent variable is the variation of export similarity index proposed by Finger and Kreinin (1979):

$$\mathrm{ESI}_{it} = 100 \sum_j \min(s_{ijt}^{proc} - s_{ijt}^{ord}) \qquad (2)$$

where $s_{ijt}^{proc} = \dfrac{Exp_{ijt}^{proc}}{\sum_j Exp_{ijt}^{proc}}$ and $s_{ijt}^{ord} = \dfrac{Exp_{ijt}^{ord}}{\sum_j Exp_{ijt}^{ord}}$

We can use Wei's dissimilarity index or the share of export that is sold under both processing and ordinary regimes.

We use these indices to investigate which factors, if any, contribute to conversion of the two trade regimes.

Our independent variables represent provinces' characteristics. First of all we include the usual controls such as province GDP, GDP per capita, employment, wage, education variables at the secondary and college levels, FDI inflows, investment as a share of GDP……..

Second, we construct the following variables: export shares of state-owned firms (SOE), Sino-foreign contractual joint ventures (CJV), Sino-foreign equity joint venture (EJV), foreign-owned enterprises (FOE) and others such as collective and private enterprises. Including these variables allows us to see which types of firms – state own or foreign investment enterprises - export goods in ordinary trade that are also exported in

processing trade. We also construct shares of export that goes to various destinations: developed (DEVT) vs developing countries, Hong-Kong (HK) and other Asian tigers (TIG) – Korea, Taiwan, and Singapore. The variable DEVT is included to examine whether the demand for those overlapping goods come from developed versus developing countries. If it is the latter the quality of those good should be expected to be lower than in the former case. Also, since Hong Kong is considered an entrepot of trades and considerable amount of Chinese export goes through Hong Kong and many foreign companies in China are from Hong Kong, there might be a potential influence on the content of ordinary export from that country. Asian Tigers are also considered main trade partners for China in components and intermediate goods. Lastly, we also include processing export as a percentage of total export and total export as a share of GDP. The inclusion of those variables allows us to examine whether there are any learning or spillover effects from exporting and processing. We also include the year dummies and report the coefficients for them to capture the impact of government trade policies.

IV. Estimation Results

We run this regression for the total export and then for high, medium-high, medium-low, low tech industries separately. Errors are corrected for heteroskedasticity and 1st order autocorrelation. Table 3 presents the results.

First of all, there seem to be a general convergence trend between the two regimes, except for low-tech industries, as evident from the positive coefficient for the lag of dependent variable. Second, larger presence of foreign own enterprises contributes to dissimilarity of the two export regimes in the overall and high-tech exports, which is consistent with the previous studies. On the other hand, more exporting to the Asian

Tigers (excluding Hong Kong) and having higher share of processing exports increases convergence of the two regimes. We consider the latter as an indication of the positive spillovers from processing to ordinary trade.

Real GDP per capita seems to contribute positively to convergence in low and medium-low tech industries. College education variable do not seem to have any significant influence on the dynamic of the export dualism, while secondary education has negative and significant impact on convergence in low and medium-high tech industries. The more interesting results come from time dummies. As can be seen government policies have differential impact on exports in different sectors.
For example, in medium-high technology sector coefficient for 1995-1999 dummies are positive and significant, which indicates that that sector was the most affected by the 1995 exchange rate and VAT policies and not so much affected by the general downturn of the economy. On the other hand, convergence in high-tech industries speeds up in 1998 – probably as a result of the policies that led China's acceptance into the WTO. Medium-low and low technology sectors do not show much convergence over time. This probably due to low presence of processing trade in those industries.

V. Conclusions

There is obvious convergence of the two trade regimes, even though at significantly low speed. There is heterogeneity in the speed of convergence in high and medium-high technology sectors.

Further research: In 2004 the foreign-trade law came into effect that was supposed to change the dynamics of the dualism in trade. We expect that convergence should accelerate after 2004.

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Table 1: China's Ordinary Exports by Technological Level

Ordinary Exports (US$ mil.)			Export share		Growth rate
	1992	2005	1992	2005	1992-2005
High Tech	684	23,057	1.5%	6.7%	31%
Med-high Tech	7,626	87,773	16.8%	25.4%	21%
Med-low Tech	6,147	87,958	13.6%	25.5%	23%
Low Tech	19,773	123,704	43.6%	35.8%	15%
Non-manufacturing	11,102	23,025 2	4.5%	8.3%	8%
Total	45,333	345,518	100%	100%	17%

Source: China Customs Statistics. From "China's International Competitiveness: Reassessing the Evidence" by Assche, Hong, and Slootmaeker.

Table 2: Processing Trade: 1988 – 2005

Year	Total China's Exports (Billions US$)	Share of Processing Exports (%)	Total China's Imports (Billions US$)	Share of Processing Imports (%)
1988	47.5	30	30.4	44
1989	42.1	24	34.6	44
1990	51.4	31	35.1	51
1991	71.8	45	45.3	53
1992	80.9	48	60.8	50
1993	91.7	48	104	35
1994	121	47	116	41
1995	149	49	132	44
1996	151	56	139	45
1997	183	54	142	46
1998	184	57	140	49
1999	195	57	166	45
2000	249	55	225	42
2001	266	55	243.5	39
2002	325.6	55	295	42
2003		55		
2004		55		
2005		55		

Notes: Data in this table are computed using China's trade data for 1988 – 2005

Figure 1.

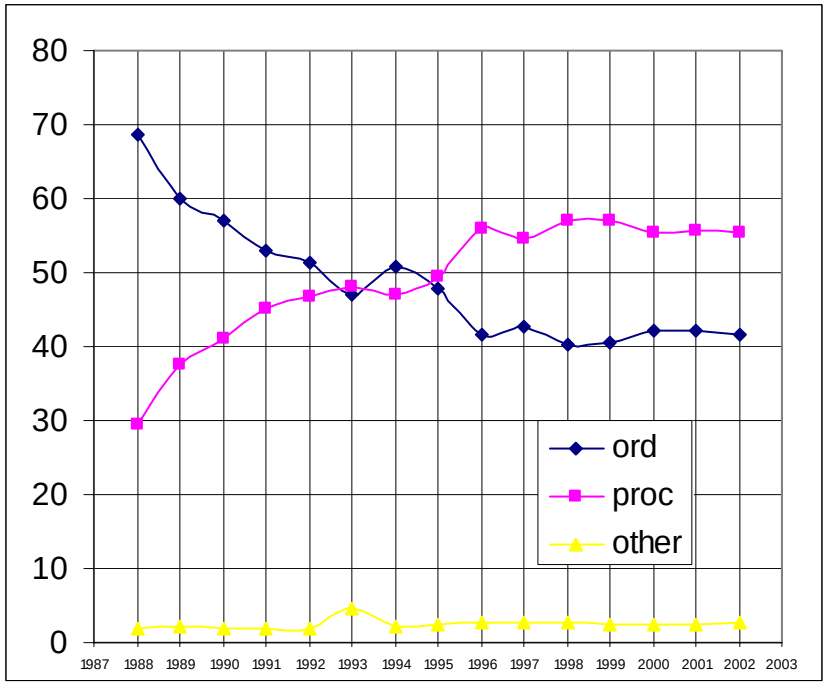
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Figure 2.

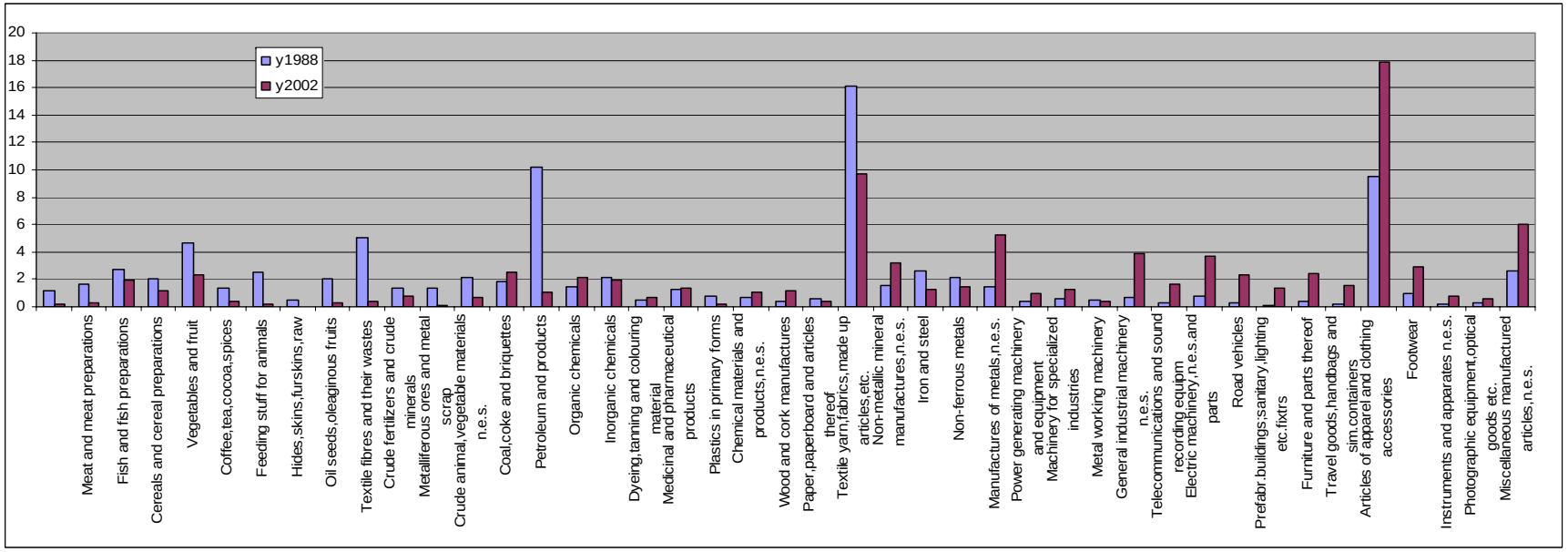

Figure 3.

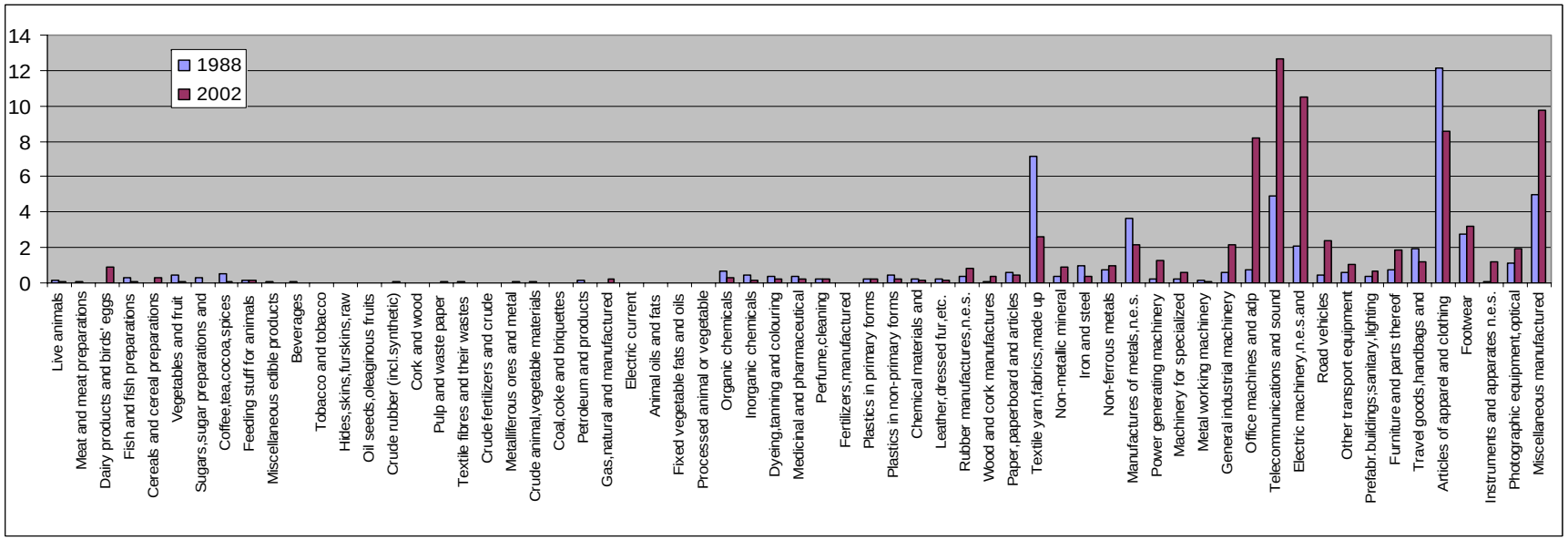

Table 2. Regression Results. Dependent Variable: Finger & Kreinin Index

	(1)	(2)	(3)	(4)	(5)
	All Industries	High-Tech Industries	Medium-High-Tech Industries	Medium-Low-Tech Industries	Low-Tech Industries
INDEX_LAG	0.2004*	0.2645*	0.2824*	0.3254*	-0.0609
	(0.0480)	(0.0489)	(0.0547)	(0.0550)	(0.0575)
SOE	-0.0134	-0.0048	-0.0079	0.0154*	0.0016
	(0.0090)	(0.0066)	(0.0064)	(0.0054)	(0.0057)
CJV	-0.0318**	-0.0148	0.0375	0.0031	0.0223
	(0.0149)	(0.0108)	(0.0257)	(0.0068)	(0.0366)
EJV	-0.0176	-0.0099	0.0107	0.0313*	-0.0128***
	(0.0127)	(0.0095)	(0.0074)	(0.0089)	(0.0075)
FOE	-0.0242***	-0.0166***	-0.0122	0.0148	-0.0144
	(0.0136)	(0.0100)	(0.0139)	(0.0098)	(0.0089)
POLICY	0.0425	-0.0029	-0.0179	0.0683	-0.0035
	(0.0617)	(0.0459)	(0.0712)	(0.0616)	(0.0605)
DEVT	0.0039	0.0029	-0.0029	-0.0057	0.0042
	(0.0059)	(0.0044)	(0.0049)	(0.0038)	(0.0040)
HK	0.0067	0.0036	0.0148*	-0.0029	0.0028
	(0.0058)	(0.0043)	(0.0049)	(0.0042)	(0.0041)
TIG	0.0226*	0.0130**	-0.0028	-0.0092	0.0136**
	(0.0072)	(0.0053)	(0.0052)	(0.0064)	(0.0068)
EXP/GDP	0.0000	0.0000	0.0000	0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
PROC_SHARE	2.0451*	1.6438*	0.6649	0.0469	0.4936
	(0.5655)	(0.4239)	(0.5720)	(0.4968)	(0.4460)
real_GDPc	0.1327	0.1577	-0.2879	0.6654**	0.6292***
	(0.2881)	(0.2187)	(0.3442)	(0.3185)	(0.3376)
real_wage	-0.0000	-0.0000	0.0001	-0.0001	-0.0001***
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0000)
real_inv_gdp	0.0012	0.0017	-0.0172*	0.0015	0.0026
	(0.0060)	(0.0044)	(0.0066)	(0.0068)	(0.0059)
real_GDP	-0.0000	-0.0000	-0.0000	0.0000	0.0001**
	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0000)
real_fdi_pop	0.0002	-0.0001	-0.0005	-0.0006	0.0007
	(0.0012)	(0.0009)	(0.0013)	(0.0013)	(0.0013)
college	0.3071	0.2184	0.1600	-0.0645	0.1918
	(0.2120)	(0.1589)	(0.2933)	(0.2488)	(0.2019)
second	-0.2198	-0.2708	-0.6785***	-0.0932	-0.4782***
	(0.2862)	(0.2138)	(0.3580)	(0.3143)	(0.2862)
empl_pop	1.5655	1.5306***	1.2977	1.9353	1.5639
	(1.0941)	(0.8133)	(1.3243)	(1.2747)	(1.0687)
_Iyear_1994	0.5375	0.2931	0.1991	0.1047	0.0831
	(0.3296)	(0.2418)	(0.1231)	(0.1013)	(0.0802)
_Iyear_1995	0.4143	0.2282	0.4274*	-0.0719	0.1462
	(0.3051)	(0.2239)	(0.1348)	(0.1150)	(0.1016)
_Iyear_1996	0.1699	0.1044	0.3891**	-0.1551	0.0742
	(0.2591)	(0.1898)	(0.1706)	(0.1408)	(0.1321)
_Iyear_1997	0.1559	0.0911	0.3991**	-0.1894	-0.1176
	(0.2452)	(0.1791)	(0.1939)	(0.1630)	(0.1493)
_Iyear_1998	0.2240	0.1496	0.3855***	-0.1523	0.0634
	(0.2074)	(0.1509)	(0.2272)	(0.1927)	(0.1800)
_Iyear_1999	0.2568	0.2194***	0.4857***	-0.0189	0.1112

	(0.1715)	(0.1250)	(0.2653)	(0.2339)	(0.2151)
_Iyear_2000	0.3400**	0.2185***	0.1252	-0.2418	0.0673
	(0.1528)	(0.1123)	(0.2795)	(0.2584)	(0.2379)
_Iyear_2001	0.2743*	0.1991*	0.0420	-0.1278	-0.0440
	(0.1020)	(0.0764)	(0.3300)	(0.3047)	(0.2804)
Observations	290	290	290	290	290

Standard errors in parentheses. *** significant at 10%; ** significant at 5%; * significant at 1%

Note: Country-specific and time-specific fixed effects estimate.