

# Productivity Growth and Labor Reallocation: Latin America versus East Asia: Online Appendix

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This is the Online Appendix for the paper, “Productivity Growth and Labor Reallocation: Latin America versus East Asia.” It is posted at <http://www-scf.usc.edu/~ungor/Research.html>

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## 1 A Nine-Sector Model

### 1.1 The Household

The economy is populated by an infinitely-lived representative household of constant size over time. Without loss of generality I normalize the population size to one. I assume that the household is endowed with one unit of productive time that supplies inelastically to the market and consumption is the only determinant of the instantaneous utility function, which is given by:

$$U(\bar{A}, C) = \bar{A} + \log(C) \quad (1)$$

The instantaneous utility is defined over the agricultural good ( $\bar{A}$ ) and the composite consumption good ( $C$ ), which is given by

$$C = (\gamma_1^{1/\eta} C_1^{(\eta-1)/\eta} + \gamma_2^{1/\eta} C_2^{(\eta-1)/\eta} + \dots + \gamma_8^{1/\eta} C_8^{(\eta-1)/\eta})^{\eta/(\eta-1)}, \quad (2)$$

where  $C_1, \dots, C_8$  are the consumption of the non-agricultural goods. The weights  $\gamma_1, \dots, \gamma_8$  influence how non-agricultural consumption expenditure is allocated among eight sectors. The parameter  $\eta$  is the (constant) elasticity of substitution among the non-agricultural goods and it underlies the magnitudes of price responses to quantity adjustments: lower

substitution elasticity implies that sharper price changes are needed to accommodate a given change in quantities consumed.<sup>1</sup>

At each date, and given prices, the household chooses consumption of each good to maximize his lifetime utility subject to the budget constraint,

$$p_A \bar{A} + p_1 C_1 + p_2 C_2 + \dots + p_8 C_8 = \omega, \quad (3)$$

where  $p_j$  is the price of good- $j$  output and  $\omega$  is the wage-rate in the economy.

## 1.2 The Firms

At each date there are nine goods produced. The production function for sector  $j$  is given by

$$Y_j = \theta_j N_j, \quad (4)$$

where  $Y_j$  is output of sector  $j$ ,  $N_j$  is labor allocated to production, and  $\theta_j$  is sector  $j$ 's labor productivity. Since I abstract from capital and fixed factors in production, differences in labor productivity implicitly incorporates differences due to capital as well as due to technology adoption, regulation, etc. across sectors. Firm  $j$  problem is given by

$$\max p_j Y_j - \omega N_j \quad s.t. \quad Y_j = \theta_j N_j, \quad N_j > 0. \quad (5)$$

## 1.3 Competitive Equilibrium

Given a set of prices  $\{p_A, p_1, p_2, \dots, p_8, \omega\}$ , a competitive equilibrium consists of consumption decisions that are the household's allocations  $\{\bar{A}, C_1, C_2, \dots, C_8\}$ , and factor allocations for the firms,  $\{N_A, N_1, N_2, \dots, N_8\}$  such that given prices, the firm's allocations solve its profit maximization problem, the household's allocations solve the household's utility

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<sup>1</sup>The utility function belongs to the following general type of utility function:

$$U(A, C) = \begin{cases} \bar{A}, & \text{if } A < \bar{A}, \\ \log(C) + \bar{A}, & \text{if } A \geq \bar{A}. \end{cases}$$

This specification of preferences implies that the economy specializes in agriculture until the subsistence level  $\bar{A}$  is reached. Moreover, the economy will never produce more agricultural good than  $\bar{A}$ . Once  $\bar{A}$  is reached, the representative household will supply labor to the other five sectors. The idea is that consumers care mainly about food up to a satiation point; beyond that point their attention focuses exclusively on non-agricultural goods. As Laitner (2000) and Stokey (2001) note, technological progress and such a specification of preferences eventually would cause structural change, with the economy endogenously shifting from a preponderance of agricultural production to marginalization of the same sector (see, also, Gollin, Parente, and Rogerson 2002, 2004, 2007).

maximization problem, and all product and factor markets clear:

1. The demand of labor from firms must equal this exogenous supply at every date:

$$N_A + N_1 + N_2 + \dots + N_8 = 1. \quad (6)$$

2. Since there is no international trade or capital accumulation the following conditions hold at each date implying that the market must clear for each goods and services produced:

$$\bar{A} = Y_A, \quad C_1 = Y_1, \quad \dots, \quad C_8 = Y_8. \quad (7)$$

**Proposition 1.** *Employment share in agriculture is determined solely by the subsistence constraint and labor productivity in agriculture:*

$$N_A = \bar{A}/\theta_A. \quad (8)$$

Increases in the level of agricultural productivity push labor out of the agricultural sector. High agricultural productivity is a necessary condition for industrialization and economic development since poor countries have a much larger fraction of their employment in the agricultural sector than rich countries to be able to produce enough food to satisfy their subsistence requirements.

**Proposition 2.** *Employment share in non-agricultural sector  $j$  ( $j = 1, 2, \dots, 8$ ) is given by:*

$$N_j = \frac{\gamma_j \theta_j^{\eta-1} (1 - \bar{A}/\theta_A)}{\gamma_1 \theta_1^{\eta-1} + \gamma_2 \theta_2^{\eta-1} + \gamma_3 \theta_3^{\eta-1} + \gamma_4 \theta_4^{\eta-1} + \gamma_5 \theta_5^{\eta-1} + \gamma_6 \theta_6^{\eta-1} + \gamma_7 \theta_7^{\eta-1} + \gamma_8 \theta_8^{\eta-1}}. \quad (9)$$

Productivity increases in sector  $j$  lead to flows of labor out of sector  $j$ , i.e.,  $\partial N_j / \partial \theta_j < 0$  as long as  $\eta < 1$ .

## 1.4 Quantitative Analysis

The source for all the sectoral data I use in this paper is the Groningen Growth and Development Centre (GGDC) 10-sector database.<sup>2</sup> This database includes annual data on gross value added at both current and constant prices from 1950 to 2005 for selected Latin America, Asia, and OECD countries. It also includes data on persons employed, which

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<sup>2</sup>The sources and methods document available at <http://www.ggdc.net/dseries/10-sector.html> provides a detailed discussion of the construction of the employment and value added series on a country-by-country basis. See, also, Timmer and de Vries (2007).

allows the derivation of labor productivity (value added per worker) series (see Table 1 and Table 2 for sectoral classifications in the database and sample periods for each country). Employment in this data set is defined as “all persons employed”, thus including all paid employees, but also self-employed and family workers.

All time series are de-trended using the Hodrick-Prescott filter with a smoothing parameter of 6.25 before any ratios are computed.<sup>3</sup> I normalize productivity levels across sectors in each country to one for the initial year. I use data on sectoral labor productivity growth in each country to obtain the time paths of sectoral productivity for the sample period.

I calibrate subsistence in agriculture so that the equilibrium of the model matches the share of employment in agriculture for the initial year in each economy since Equation (8) implies that the model labor allocation in agriculture is determined independently of the state of the non-agricultural sectors. Specifically,

$$\bar{A} = N_{A,initial}. \quad (10)$$

Next, I calibrate  $\gamma_j$  to match the shares of employment in each sector in each of the economies for the initial year. Specifically, the weights  $\gamma_1, \dots, \gamma_8$  are calibrated as follows:

$$\gamma_j = \frac{N_{j,initial}}{1 - \bar{A}}, \quad j = 1, \dots, 8 \quad (11)$$

I consider  $\eta$  to be a free parameter in order to study the implication of this parameter value for the findings. Since  $\eta$  determines the amount of substitution between non-agricultural sectors this parameter determines how much labor will be reallocated among these sectors in response to uneven changes in productivity in each sector.

The recent literature provides a narrow range of estimates for  $\eta$ . Duarte and Restuccia (2010) calibrate a similar economy to U.S. data for the period from 1956 to 2004 and set  $\eta$  equal to 0.40. Bah (2008) reports an elasticity of 0.45 using the data for the U.S. for the period 1950-2000. Similarly, Rogerson (2008) uses the data for the U.S. economy in 1950 and 2003 and sets  $\eta$  equal to 0.44. Ngai and Pissarides (2008) cite the empirical literature and argue that the elasticity of substitution lies between 0.1 and 0.3. I report the results with two values of  $\eta$ , which are 0.1 and 0.45. Calibrated parameters for each country are reported in Table 3.

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<sup>3</sup>I am interested in long-term trends, not in yearly fluctuations. I follow Ravn and Uhlig (2002) for choosing 6.25 as a smoothing parameter. The features that I emphasize also hold for other smoothing parameter values for annual data such as 100 and 400. See, also, Jaimovich and Siu (2009) for a very similar discussion of the Hodrick-Prescott filter for annual data.

Figure 1 - 13 show the model predicted sectoral employment shares with  $\eta = 0.1$  and  $\eta = 0.45$  and compare with the actual data for each country. Notice that the model predicted agricultural employment share is independent of  $\eta$ . By construction, the model matches exactly the sectoral shares of employment for the initial year.

## 2 Shift-Share Analysis of Productivity Growth

At the aggregate level labor productivity is essentially driven by two sources. The first source of productivity growth concerns productivity growth within individual sectors. The second source involves shifts of resources from sectors with either low productivity levels and/or low productivity growth rates to sectors with high productivity levels and/or high productivity growth rates. This source is referred to as structural change.

To measure the effect of the contribution of employment shifts on the overall productivity growth, one may express the productivity for the economy as a whole as the productivity level by sector weighted by the sectoral employment shares:

$$\frac{Y_T}{L_T} - \frac{Y_0}{L_0} = \underbrace{\sum_{j=1}^J \theta_{j0} \left( \frac{Y_{jT}}{L_{jT}} - \frac{Y_{j0}}{L_{j0}} \right)}_{\text{Intra-Sectoral Effect}} + \underbrace{\sum_{j=1}^J (\theta_{jT} - \theta_{j0}) \frac{Y_{j0}}{L_{j0}}}_{\text{Static Sectoral Effect}} + \underbrace{\sum_{j=1}^J (\theta_{jT} - \theta_{j0}) \left( \frac{Y_{jT}}{L_{jT}} - \frac{Y_{j0}}{L_{j0}} \right)}_{\text{Dynamic Sectoral Effect}} \quad (12)$$

Structural Change Effect

Here  $\frac{Y_T}{L_T} - \frac{Y_0}{L_0}$  is the labor productivity growth between years 0 and  $T$ ,  $j$  is the sector, and  $\theta_{jT}$  is the share of employment in sector  $j$  in year  $T$  (see, i.e., Ark 1996, and Maudos, Pastor, and Serrano 2008 for the details of the shift-share analysis of productivity growth).

The intra-sectoral effect shows the part of the overall productivity change which is caused by productivity growth within the sectors. The structural change effect captures the effect of the re-allocation of factors between sectors. The static sectoral effect (or the net shift effect) is the part of the overall productivity change which is caused by the changes in sectoral employment shares. It is the growth that would have occurred if there had been no change in the productivity of any sector during the period analyzed. The dynamic sectoral effect (or the interaction effect) represents the joint effect of changes in employment shares and sectoral productivity.

Table 4 shows the quantitative magnitudes of the three sources of the aggregate productivity for different countries. The intra-sectoral effect dominates the outcome in all the countries except in Hong Kong and Mexico. For example, during the period 1970-2005, productivity growth within the 9 sectors explains 86.1 percent of the aggregate growth in

Singapore. Structural change explains the remaining 13.9 percent: 19.2 percent is due to the static sectoral effect, and minus 5.3 percent is due to the dynamic sectoral effect.

Next, I take a more detailed look at the contribution of the various sectors using the decomposition formula above.<sup>4</sup> Table 5 shows the individual effects of the separate branches on aggregate labour productivity growth for each country. For example, aggregate labour productivity grew at 4.2 percent annually during the period 1963-2005 in South Korea. Of this, 77.4 percent is explained by intra-sectoral productivity growth, 23.2 percent by static shift effects and minus 0.6 percent by dynamic shift effects (see Table 4). The latter figures appear again in the last row for the Korea-panel in Table 5. In the rows the percentage contribution of each sector to aggregate labour productivity growth is given.

The columns report the separate effects: intra, static- and dynamic-shift effects and the total effect. For example, the agricultural sector (ISIC 01-05) contributed in total minus 0.3 percent to aggregate labour productivity growth. In fact, it contributed positively (40.2 percent) through productivity growth in the agricultural sector itself. However, the shift effect was strongly negative over the whole period, because the labour share of agriculture declined sharply over this period. On the other hand, the manufacturing sector (ISIC 15-37) contributed positively to labour productivity growth (48.2 percent in total) in Korea.

When looking at the total contribution of the nine sectors in each country, it is clear that the manufacturing sector has contributed most to aggregate productivity growth in most of the cases (except Argentina, Bolivia, Brazil, Colombia, and Hong-Kong).

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<sup>4</sup>See Ark and Timmer (2003) for a similar approach for some Asian countries.

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Table 1: Sectoral Definitions, ISIC Revision 2

ISIC	Sectors	ISIC	Sectors
01-05	Agriculture, Forestry, and Fishing	50-55	Wholesale and Retail Trade, Hotels, Restaurants
10-14	Mining and Quarrying	60-64	Transport, Storage, and Communication
15-37	Manufacturing	65-74	Finance, Insurance, and Real Estate
40-41	Public Utilities	90-99	Community, Social and Personal Services
45	Construction	75-85	Government Services

Source: The Groningen Growth and Development Centre (GGDC) 10-sector database.

Table 2: Variables and Sample Periods

Country	VA-K	VA	EMP
Hong Kong	1974 - 2005	1970 - 2004	1974 - 2005
Korea	1953 - 2005	1953 - 2005	1963 - 2005
Singapore	1960 - 2005	1970 - 2005	1970 - 2005
Taiwan	1961 - 2005	1951 - 2005	1963 - 2005
Argentina	1950 - 2005	1950 - 2005	1950 - 2005
Bolivia	1950 - 2005	1958 - 2005	1950 - 2003
Brazil	1950 - 2005	1990 - 2005	1950 - 2005
Chile	1950 - 2005	1950 - 2005	1950 - 2005
Colombia	1950 - 2005	1950 - 2005	1950 - 2005
Costa Rica	1950 - 2005	1950 - 2005	1950 - 2005
Mexico	1950 - 2005	1950 - 2005	1950 - 2005
Peru	1950 - 2005	1991 - 2005	1960 - 2005
Venezuela	1950 - 2005	1960 - 2003	1950 - 2005

Source: The Groningen Growth and Development Centre (GGDC) 10-sector database.  
 Note: VA-K stands for value added in constant prices; VA stands for value added in current prices; and EMP stands for number of persons employed.

Table 3: Country-Specific Calibration

Country	$\bar{A}$	$\gamma_1$	$\gamma_2$	$\gamma_3$	$\gamma_4$	$\gamma_5$	$\gamma_6$	$\gamma_7$	$\gamma_8$
Hong Kong	0.0317	0.0010	0.4557	0.0060	0.0524	0.2303	0.0770	0.0249	0.1527
Korea	0.6363	0.0193	0.2096	0.0052	0.0661	0.3274	0.0767	0.0230	0.2727
Singapore	0.0347	0.0034	0.2322	0.0113	0.0735	0.2474	0.1266	0.0296	0.2758
Taiwan	0.5092	0.0442	0.2828	0.0104	0.0546	0.1933	0.0911	0.0205	0.3032
Argentina	0.2673	0.0068	0.3203	0.0078	0.0640	0.1783	0.0851	0.0479	0.2899
Bolivia	0.7184	0.1192	0.2853	0.0035	0.0798	0.1589	0.0558	0.0113	0.2863
Brazil	0.6311	0.0165	0.3342	0.0209	0.0948	0.1857	0.0844	0.0482	0.2154
Chile	0.3229	0.0794	0.2555	0.0155	0.0686	0.1540	0.0652	0.0352	0.3265
Colombia	0.5658	0.0362	0.2577	0.0065	0.0679	0.1109	0.0765	0.1039	0.3403
Costa Rica	0.5832	0.0071	0.2604	0.0133	0.0927	0.1843	0.0782	0.0358	0.3283
Mexico	0.5831	0.0280	0.2850	0.0072	0.0658	0.2015	0.0604	0.0253	0.3268
Peru	0.5423	0.0441	0.2648	0.0065	0.0700	0.1821	0.0589	0.0708	0.3027
Venezuela	0.4595	0.0562	0.1832	0.0069	0.1186	0.1691	0.0606	0.0604	0.3450

Table 4: Relative Contribution of Different Sources (%)

Country	Period	Intra-Sectoral	Static Sectoral	Dynamic Sectoral	Total
Hong Kong	1974 - 2005	59.5	90.3	-49.8	100.0
Korea	1963 - 2005	77.4	23.2	-0.6	100.0
Singapore	1970 - 2005	86.1	19.2	-5.3	100.0
Taiwan	1963 - 2005	70.9	8.0	21.1	100.0
Argentina	1950 - 2005	144.2	46.7	-90.9	100.0
Bolivia	1950 - 2003	178.8	148.7	-227.4	100.0
Brazil	1950 - 2005	75.5	43.7	-19.1	100.0
Chile	1950 - 2005	136.5	26.9	-63.4	100.0
Colombia	1950 - 2005	98.1	54.5	-52.6	100.0
Costa Rica	1950 - 2005	75.8	43.5	-19.3	100.0
Mexico	1950 - 2005	53.7	54.9	-8.5	100.0
Peru	1960 - 2005	73.7	64.1	-37.7	100.0
Venezuela	1950 - 2005	2342.8	-19.1	-2223.6	100.0

Table 5: Sectoral Contribution (%)

ISIC Codes	Hong Kong (1974 - 2005)				Korea (1963 - 2005)			
	Intra	Static	Dynamic	Total	Intra	Static	Dynamic	Total
	Sectoral	Sectoral	Sectoral		Sectoral	Sectoral	Sectoral	
	Effect	Effect	Effect	Effect	Effect	Effect	Effect	
01-05	0.1	-0.9	-0.1	-0.9	40.2	-5.5	-35.0	-0.3
10-14	0.1	0.0	-0.1	0.0	2.7	-0.4	-2.5	-0.1
15-37	28.9	-3.4	-24.4	1.1	19.6	1.7	27.0	48.2
40-41	5.1	-0.2	-1.4	3.6	2.3	0.0	1.6	3.9
45	0.5	1.4	0.3	2.2	2.6	1.6	5.9	10.1
50-55	22.1	4.2	8.8	35.1	4.9	2.3	5.8	13.1
60-64	5.9	2.4	2.2	10.5	5.8	0.6	7.6	14.0
65-74	-6.0	77.1	-37.1	34.1	-1.0	14.2	-11.1	2.1
75-99	2.6	9.8	2.0	14.3	0.2	8.6	0.2	8.9
TOTAL	59.5	90.3	-49.8	100.0	77.4	23.2	-0.6	100.0

ISIC Codes	Singapore (1970 - 2005)				Taiwan (1963 - 2005)			
	Intra	Static	Dynamic	Total	Intra	Static	Dynamic	Total
	Sectoral	Sectoral	Sectoral		Sectoral	Sectoral	Sectoral	
	Effect	Effect	Effect	Effect	Effect	Effect	Effect	
01-05	0.7	-0.6	-0.6	-0.6	12.7	-2.4	-11.2	-0.9
10-14	0.1	-0.1	-0.1	-0.1	7.9	-0.9	-7.6	-0.7
15-37	29.8	-0.3	-0.8	28.7	14.3	1.8	13.8	29.9
40-41	4.3	-0.4	-2.3	1.6	3.7	-0.1	-1.4	2.2
45	0.6	0.8	0.1	1.6	0.5	0.8	0.9	2.2
50-55	21.1	-0.9	-2.3	17.9	8.9	1.2	12.6	22.7
60-64	15.9	-0.1	-0.9	14.9	7.2	0.0	0.4	7.6
65-74	1.2	22.3	4.2	27.7	1.0	5.4	6.9	13.3
75-99	12.5	-1.5	-2.7	8.3	14.7	2.1	6.8	23.6
TOTAL	86.1	19.2	-5.3	100.0	70.8	8.0	21.1	100.0

Table 5 – continued from previous page

ISIC Codes	Argentina (1950 - 2005)				Bolivia (1950 - 2003)			
	Intra	Static	Dynamic	Total	Intra	Static	Dynamic	Total
	Sectoral	Sectoral	Sectoral		Sectoral	Sectoral	Sectoral	
Effect	Effect	Effect		Effect	Effect	Effect		
01-05	54.2	-9.9	-38.5	5.9	83.1	-23.6	-52.5	7.1
10-14	9.8	-0.4	-4.4	5.0	113.0	-34.0	-92.5	-13.5
15-37	77.1	-21.1	-39.5	16.5	2.1	18.1	1.4	21.5
40-41	6.5	0.3	1.7	8.5	0.4	3.4	1.3	5.1
45	-2.3	8.2	-1.2	4.7	-1.4	12.4	-5.8	5.1
50-55	-4.7	23.7	-3.1	15.9	-11.7	83.5	-55.5	16.3
60-64	15.8	2.6	3.6	21.9	4.4	12.5	11.2	28.1
65-74	-2.3	10.8	-3.0	5.5	-3.7	46.5	-26.8	16.1
75-99	-9.8	32.5	-6.5	16.2	-7.4	29.9	-8.3	14.2
TOTAL	144.2	46.7	-90.9	100.0	178.8	148.7	-227.4	100.0
ISIC Codes	Brazil (1950 - 2005)				Chile (1950 - 2005)			
	Intra	Static	Dynamic	Total	Intra	Static	Dynamic	Total
	Sectoral	Sectoral	Sectoral		Sectoral	Sectoral	Sectoral	
Effect	Effect	Effect		Effect	Effect	Effect		
01-05	32.8	-5.1	-23.1	4.6	27.2	-3.6	-17.9	5.7
10-14	5.0	-0.1	-1.4	3.6	47.7	-4.1	-35.1	8.5
15-37	20.1	0.6	1.4	22.1	40.8	-3.7	-16.4	20.6
40-41	8.6	-0.6	-4.6	3.4	7.9	-0.3	-2.9	4.6
45	3.3	2.0	2.0	7.3	1.0	6.5	0.9	8.4
50-55	-1.0	8.7	-2.1	5.5	3.7	6.8	4.1	14.7
60-64	4.0	0.5	1.8	6.3	6.7	1.6	4.5	12.9
65-74	0.9	15.3	2.6	18.8	-0.2	20.2	-0.9	19.2
75-99	1.6	22.5	4.3	28.4	1.8	3.5	0.3	5.5
TOTAL	75.5	43.7	-19.1	100.0	136.5	26.9	-63.4	100.0

Table 5 – continued from previous page

ISIC Codes	Colombia (1950 - 2005)				Costa Rica (1950 - 2005)			
	Intra	Static	Dynamic	Total	Intra	Static	Dynamic	Total
	Sectoral	Sectoral	Sectoral		Sectoral	Sectoral	Sectoral	
	Effect	Effect	Effect	Effect	Effect	Effect	Effect	
01-05	39.0	-14.3	-22.5	2.2	40.7	-9.8	-28.6	2.3
10-14	7.8	-0.5	-1.1	6.3	0.2	0.0	-0.1	0.1
15-37	19.5	-0.6	-1.0	17.9	19.6	3.6	8.1	31.2
40-41	8.8	-0.3	-3.3	5.2	0.7	1.8	1.7	4.2
45	1.8	3.6	1.4	6.8	1.5	1.2	0.6	3.3
50-55	-8.3	58.1	-38.4	11.4	-2.3	24.3	-4.8	17.2
60-64	4.6	3.8	3.9	12.3	12.3	1.2	7.9	21.4
65-74	7.3	2.1	5.4	14.8	-1.0	17.4	-5.6	10.7
75-99	17.5	2.6	3.0	23.1	4.1	3.9	1.5	9.5
TOTAL	98.1	54.5	-52.6	100.0	75.8	43.5	-19.3	100.0
ISIC Codes	Mexico (1950 - 2005)				Peru (1960 - 2005)			
	Intra	Static	Dynamic	Total	Intra	Static	Dynamic	Total
	Sectoral	Sectoral	Sectoral		Sectoral	Sectoral	Sectoral	
	Effect	Effect	Effect	Effect	Effect	Effect	Effect	
01-05	25.5	-8.4	-18.6	-1.5	19.4	-8.5	-7.3	3.7
10-14	5.0	-0.8	-3.1	1.1	18.3	-6.0	-7.5	4.8
15-37	14.2	4.8	6.7	25.7	29.8	-5.2	-5.9	18.8
40-41	1.6	0.2	1.1	3.0	5.3	-0.1	-0.3	5.0
45	-0.5	6.4	-1.1	4.8	9.2	-0.2	-0.3	8.7
50-55	-2.0	29.3	-3.7	23.6	-13.9	51.3	-20.2	17.1
60-64	6.6	5.6	7.1	19.2	1.6	10.5	1.6	13.6
65-74	0.2	5.7	0.7	6.6	6.9	5.7	3.6	16.2
75-99	3.2	12.1	2.3	17.6	-3.0	16.5	-1.5	12.0
TOTAL	53.7	54.9	-8.5	100.0	73.7	64.1	-37.7	100.0

Table 5 – continued from previous page

Venezuela (1950 - 2005)				
	Intra	Static	Dynamic	
	Sectoral	Sectoral	Sectoral	
ISIC Codes	Effect	Effect	Effect	Total
01-05	671.2	-136.6	-496.2	38.3
10-14	-207.6	-974.2	105.8	-1076.0
15-37	560.3	-19.0	-33.6	507.7
40-41	1.6	62.9	25.5	90.0
45	1485.1	-306.5	-1334.4	-155.8
50-55	-282.5	897.0	-551.0	63.4
60-64	-17.2	201.1	-18.9	165.0
65-74	36.1	70.3	33.5	139.9
75-99	95.7	186.0	45.8	327.5
TOTAL	2342.8	-19.1	-2223.6	100.0

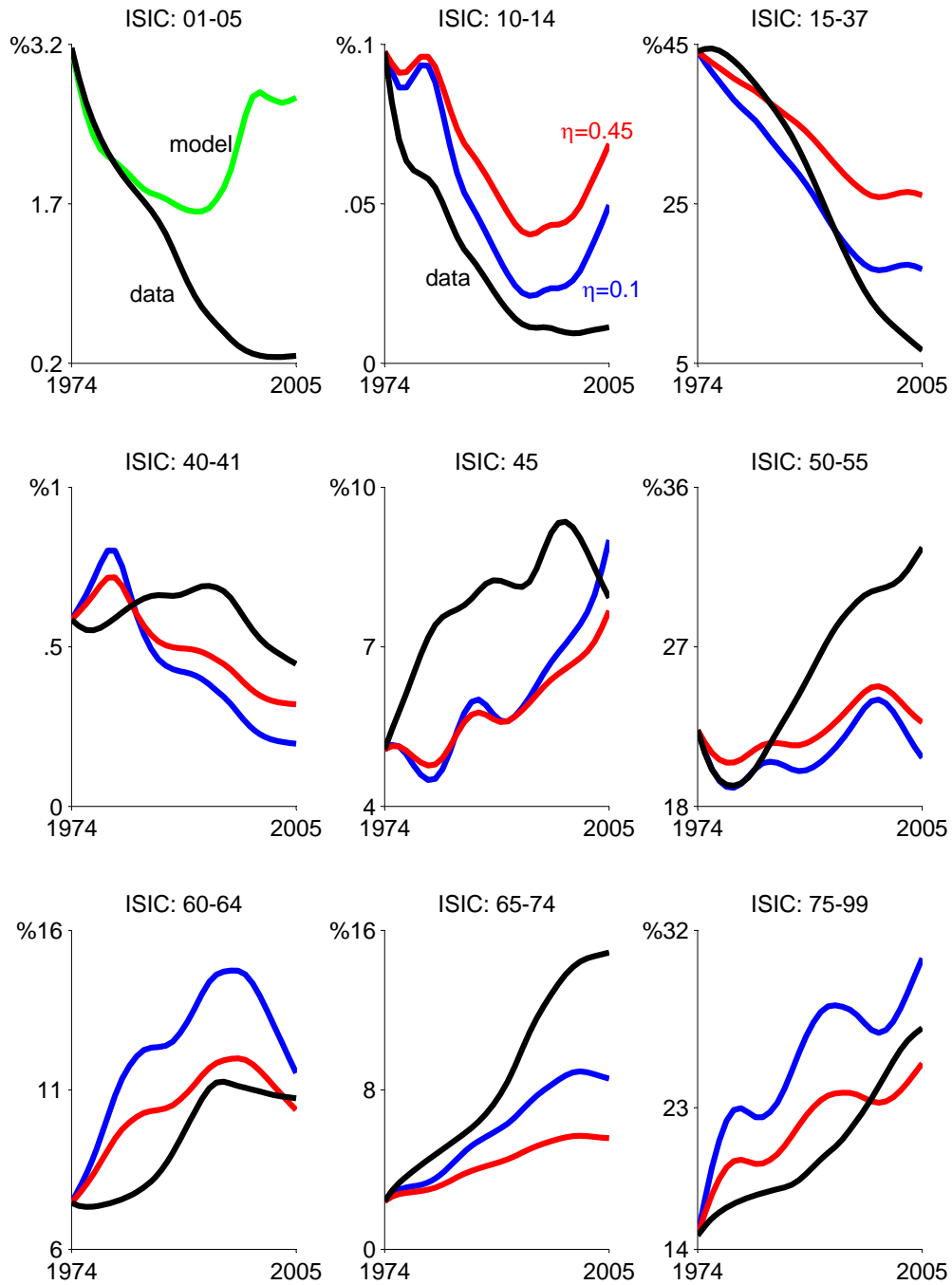


Figure 1: Sectoral Employment Shares, Data versus Model, Hong Kong: 1974-2005

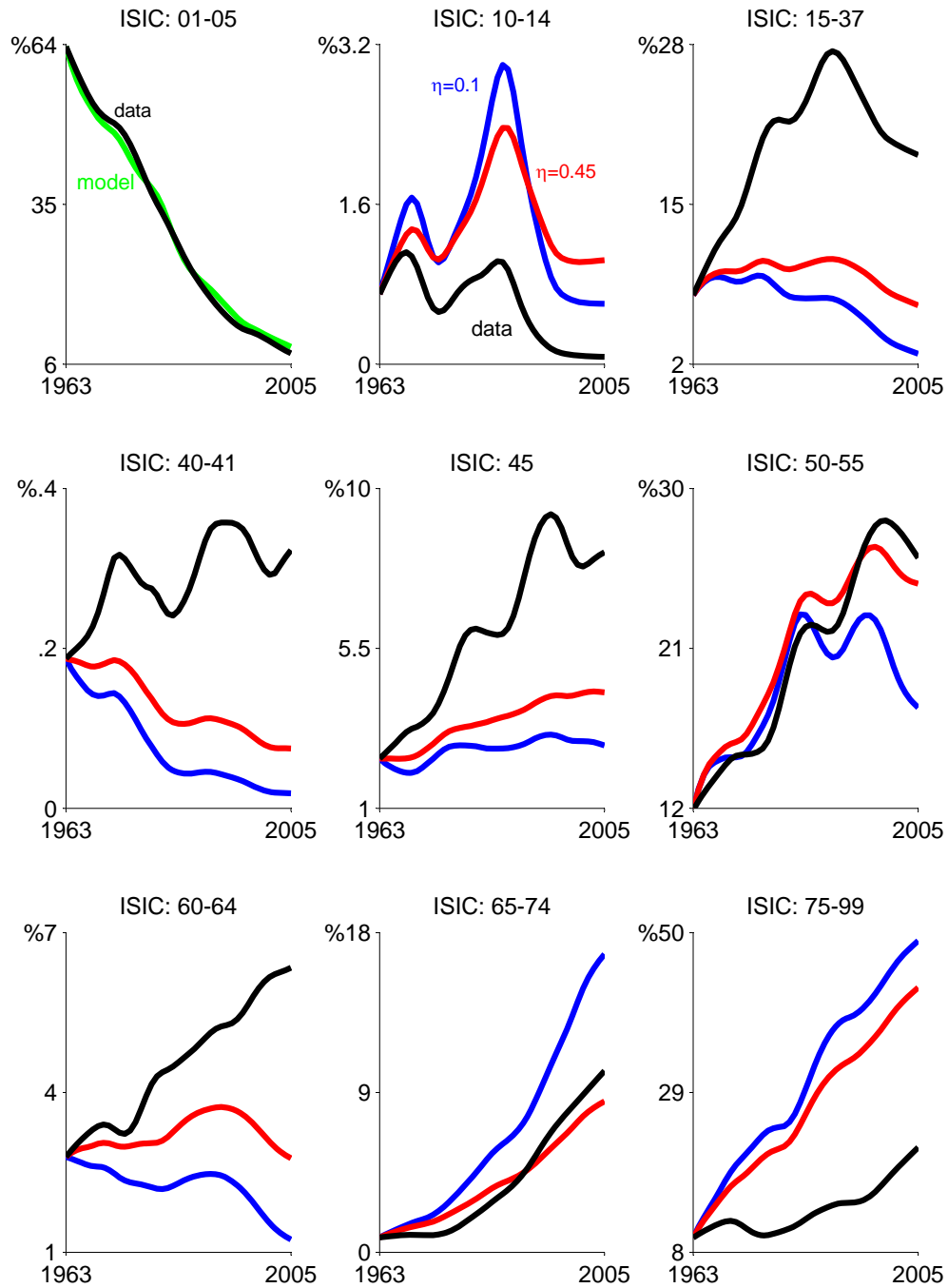


Figure 2: Sectoral Employment Shares, Data versus Model, Korea: 1963-2005

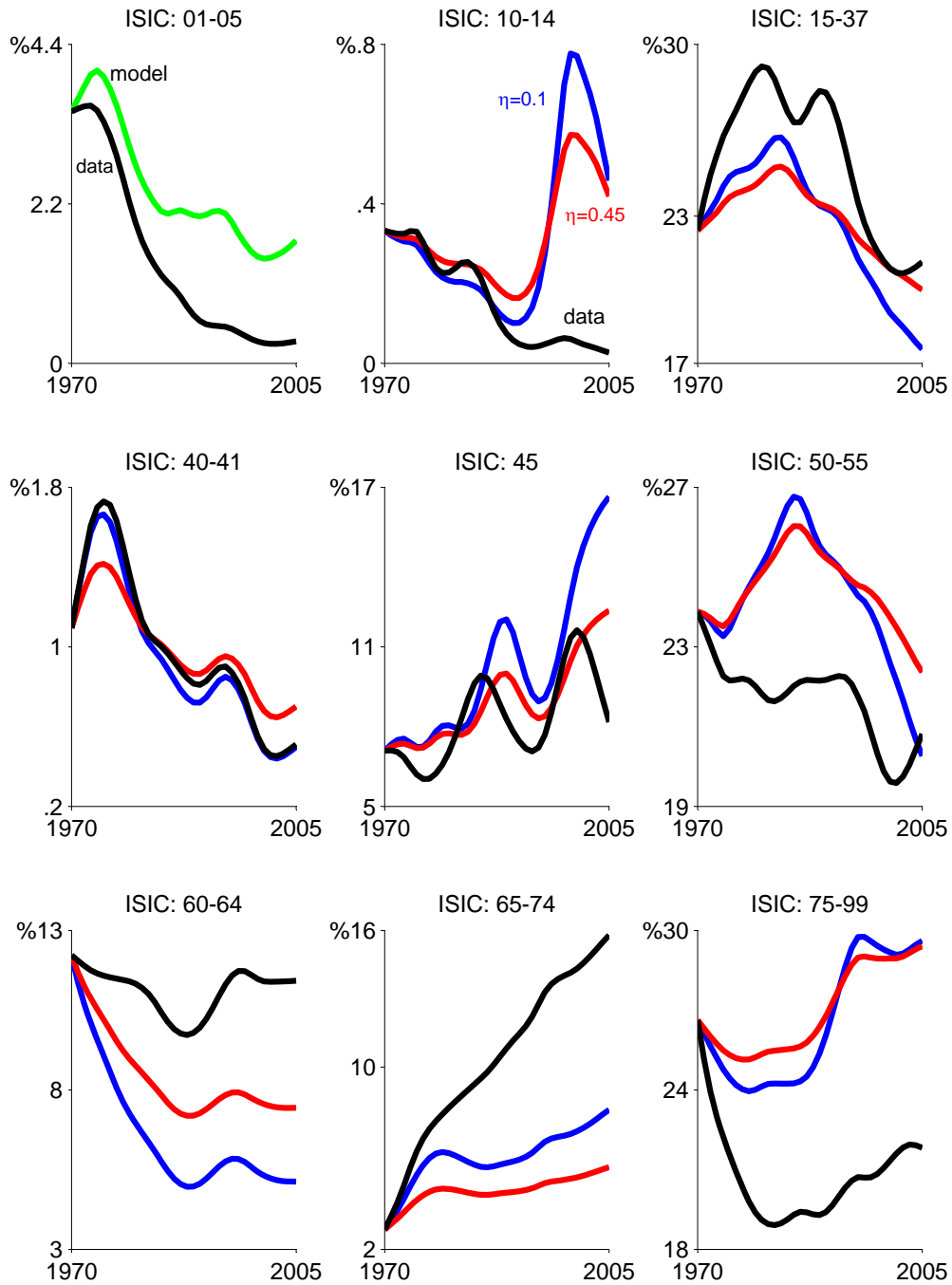


Figure 3: Sectoral Employment Shares, Data versus Model, Singapore: 1970-2005

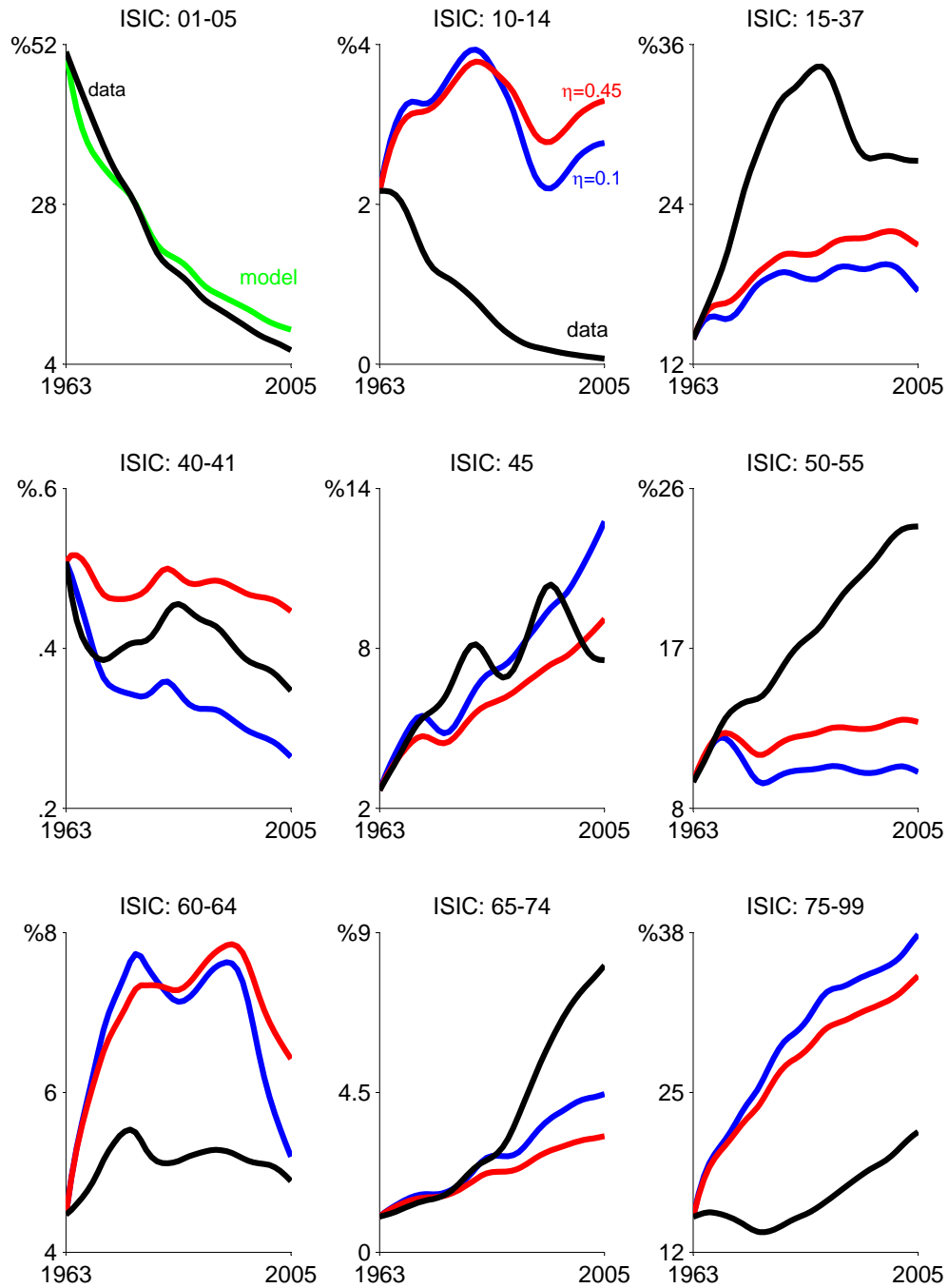


Figure 4: Sectoral Employment Shares, Data versus Model, Taiwan: 1963-2005

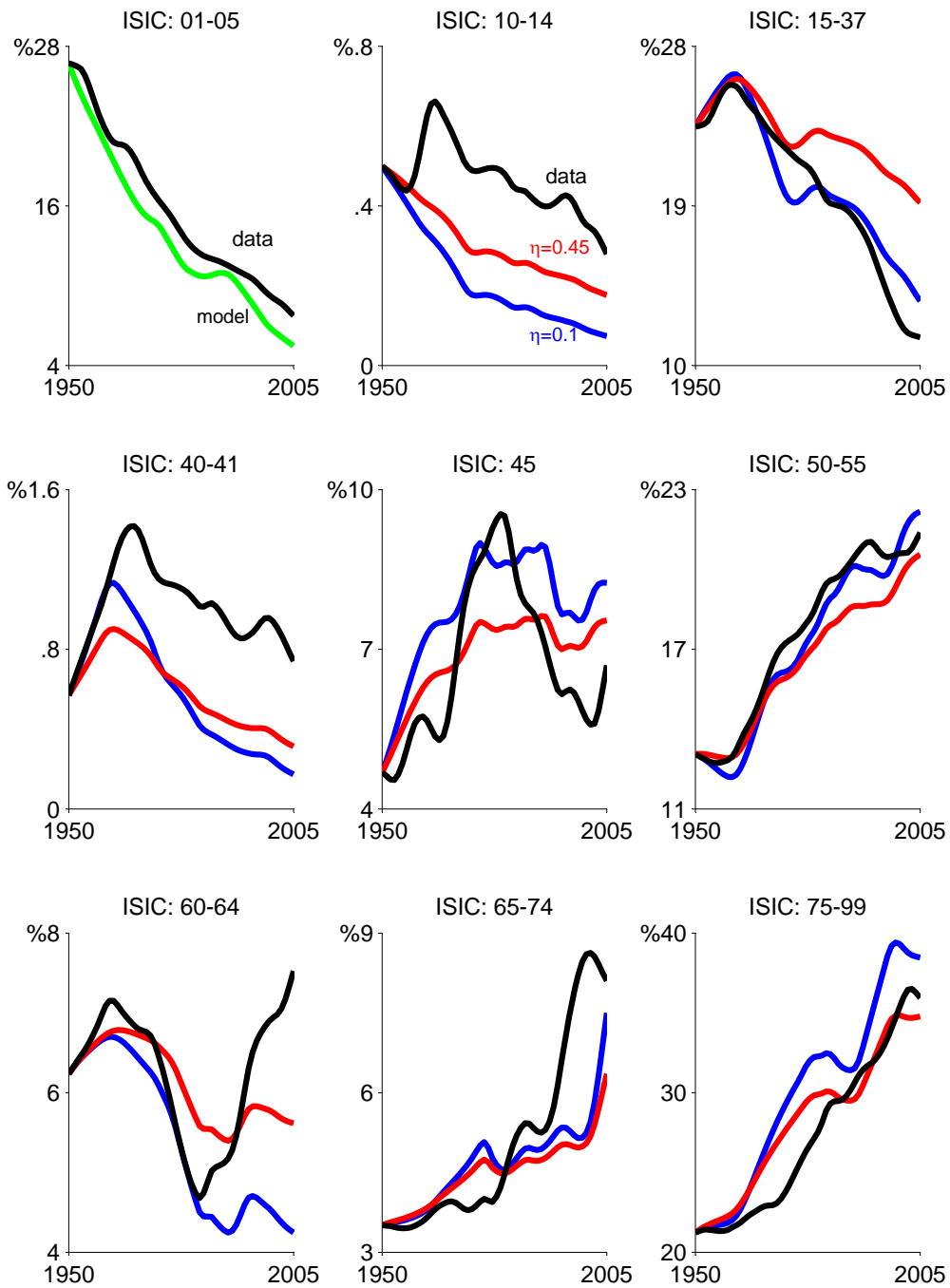


Figure 5: Sectoral Employment Shares, Data versus Model, Argentina: 1950-2005

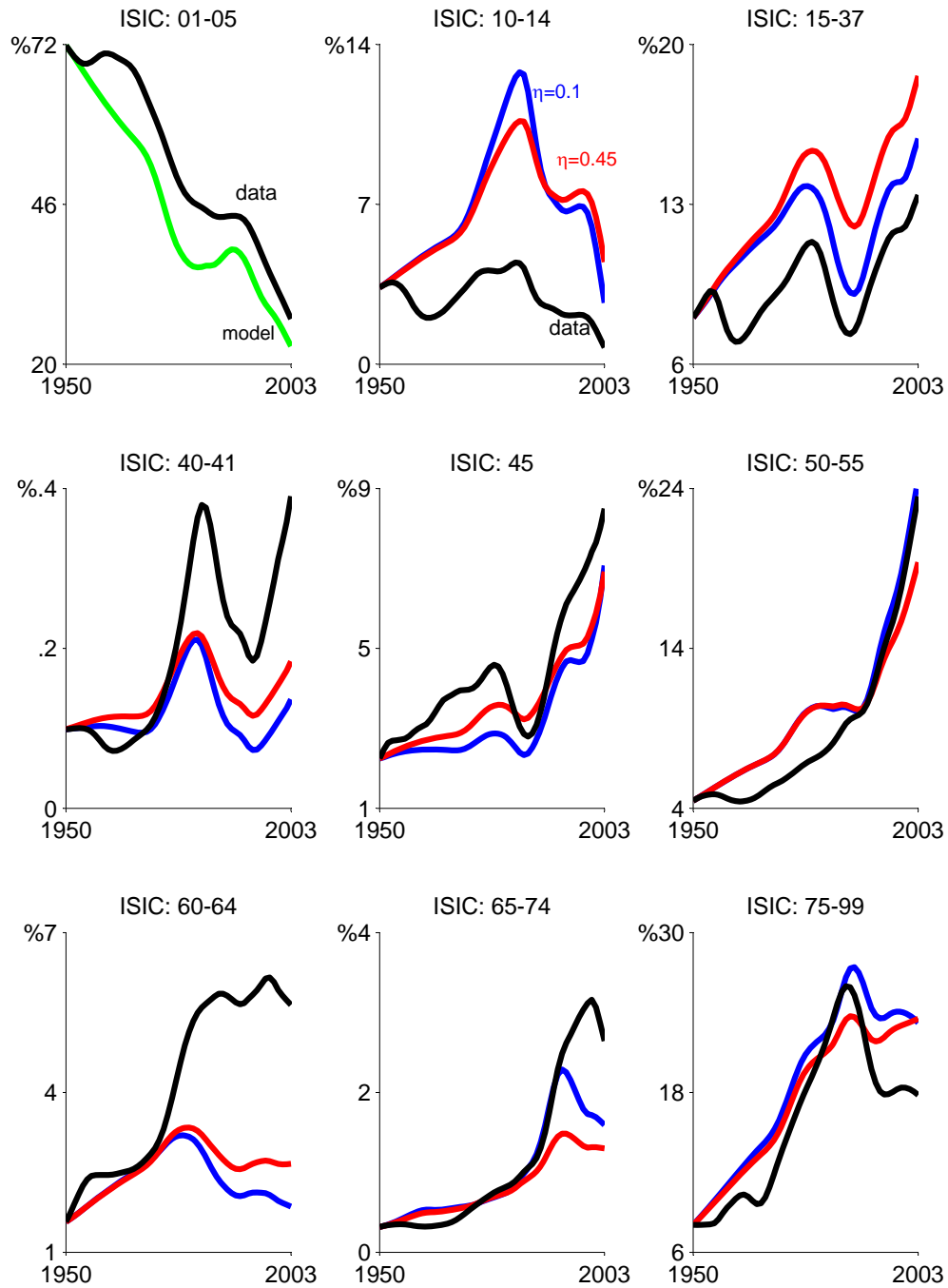


Figure 6: Sectoral Employment Shares, Data versus Model, Bolivia: 1950-2003

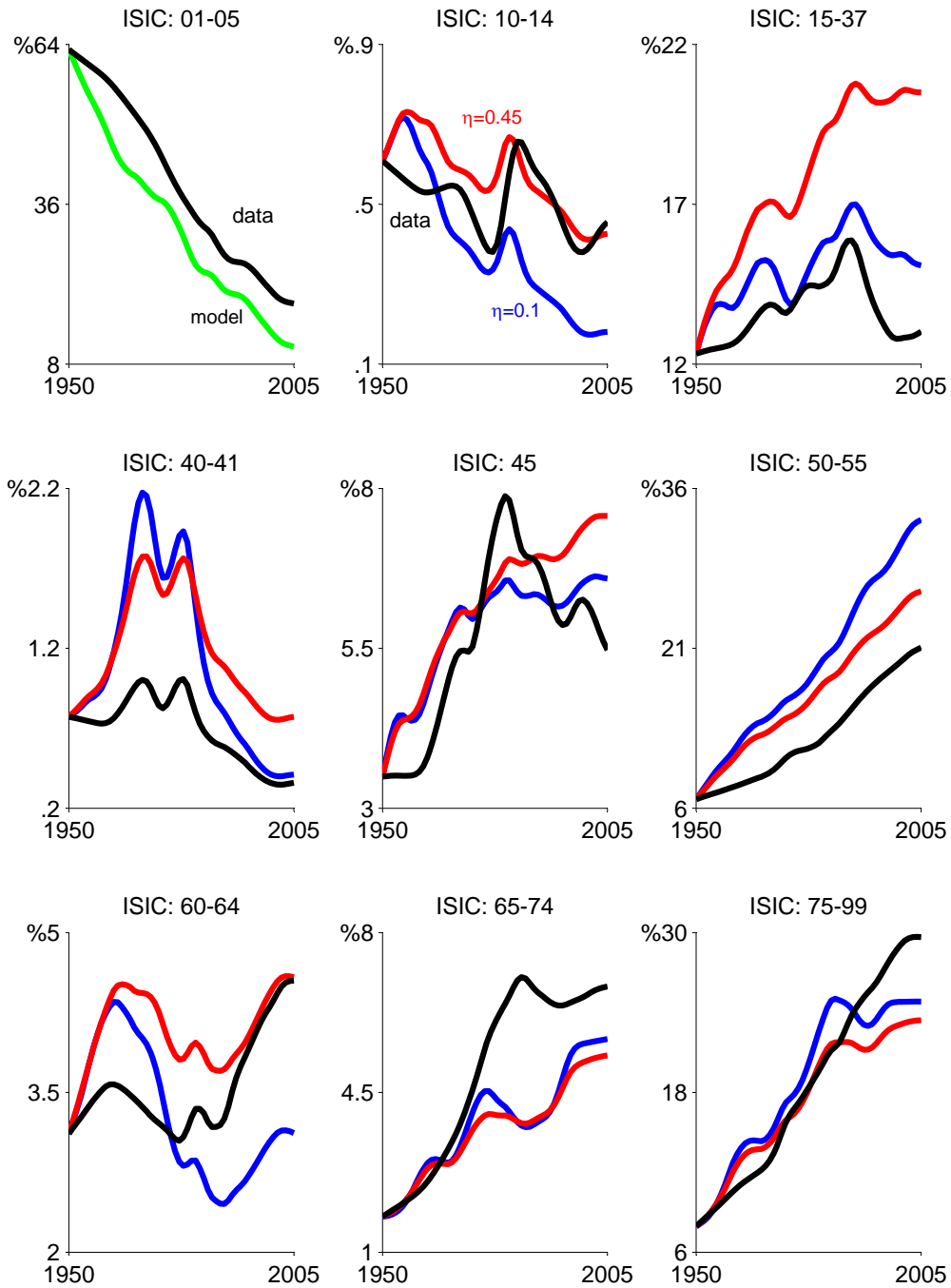


Figure 7: Sectoral Employment Shares, Data versus Model, Brazil: 1950-2005

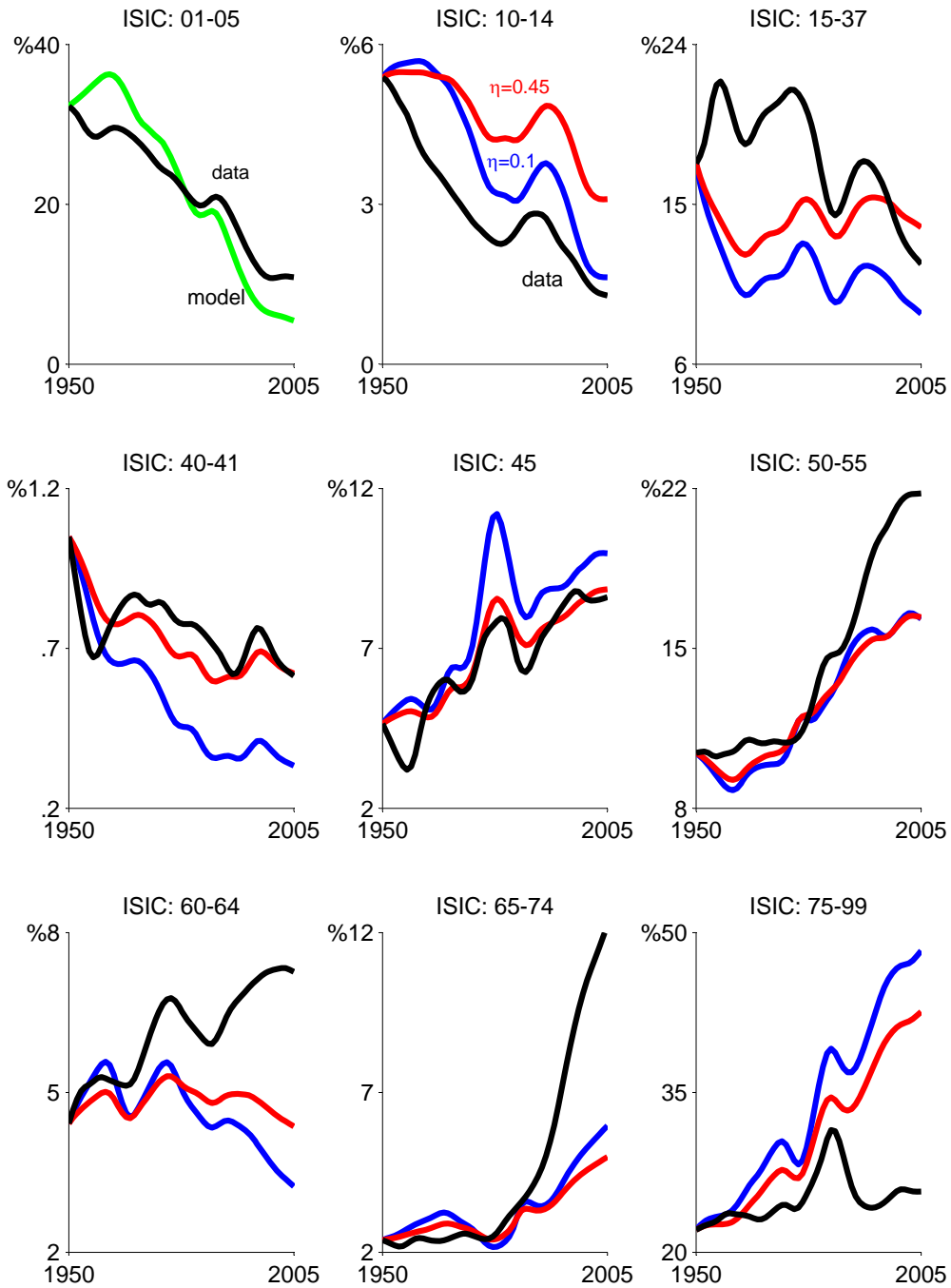


Figure 8: Sectoral Employment Shares, Data versus Model, Chile: 1950-2005

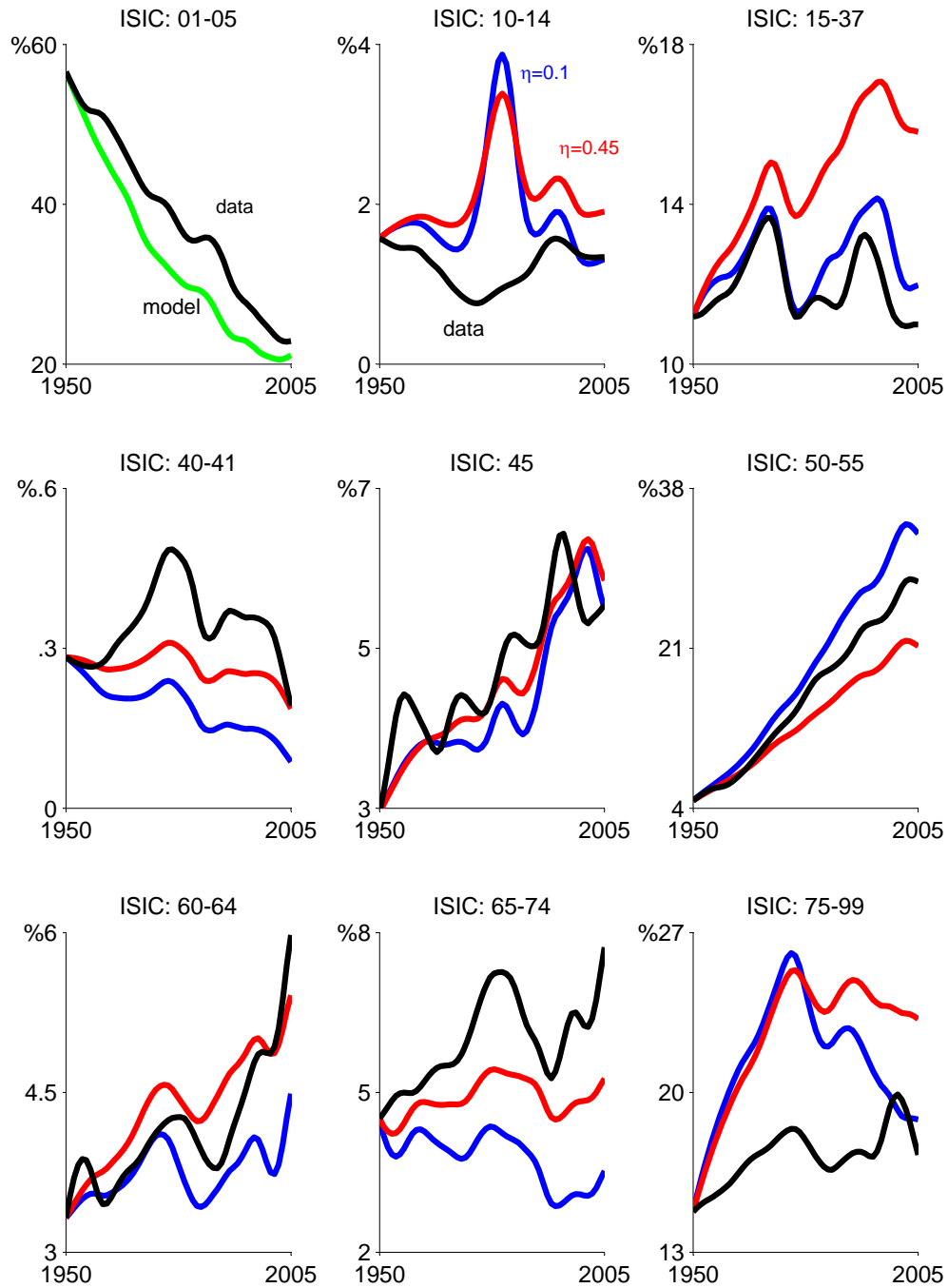


Figure 9: Sectoral Employment Shares, Data versus Model, Colombia: 1950-2005

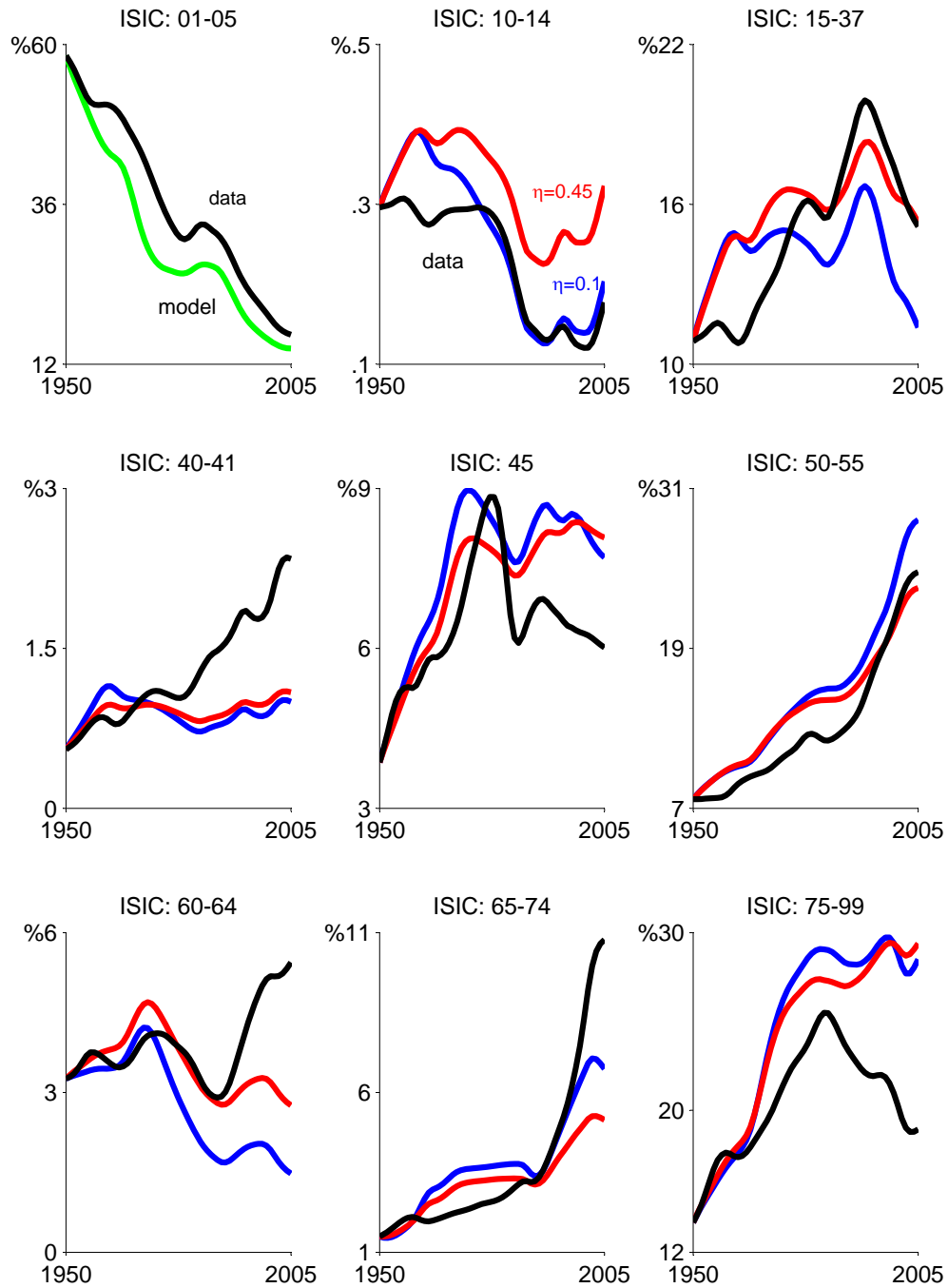


Figure 10: Sectoral Employment Shares, Data versus Model, Costa Rica: 1950-2005

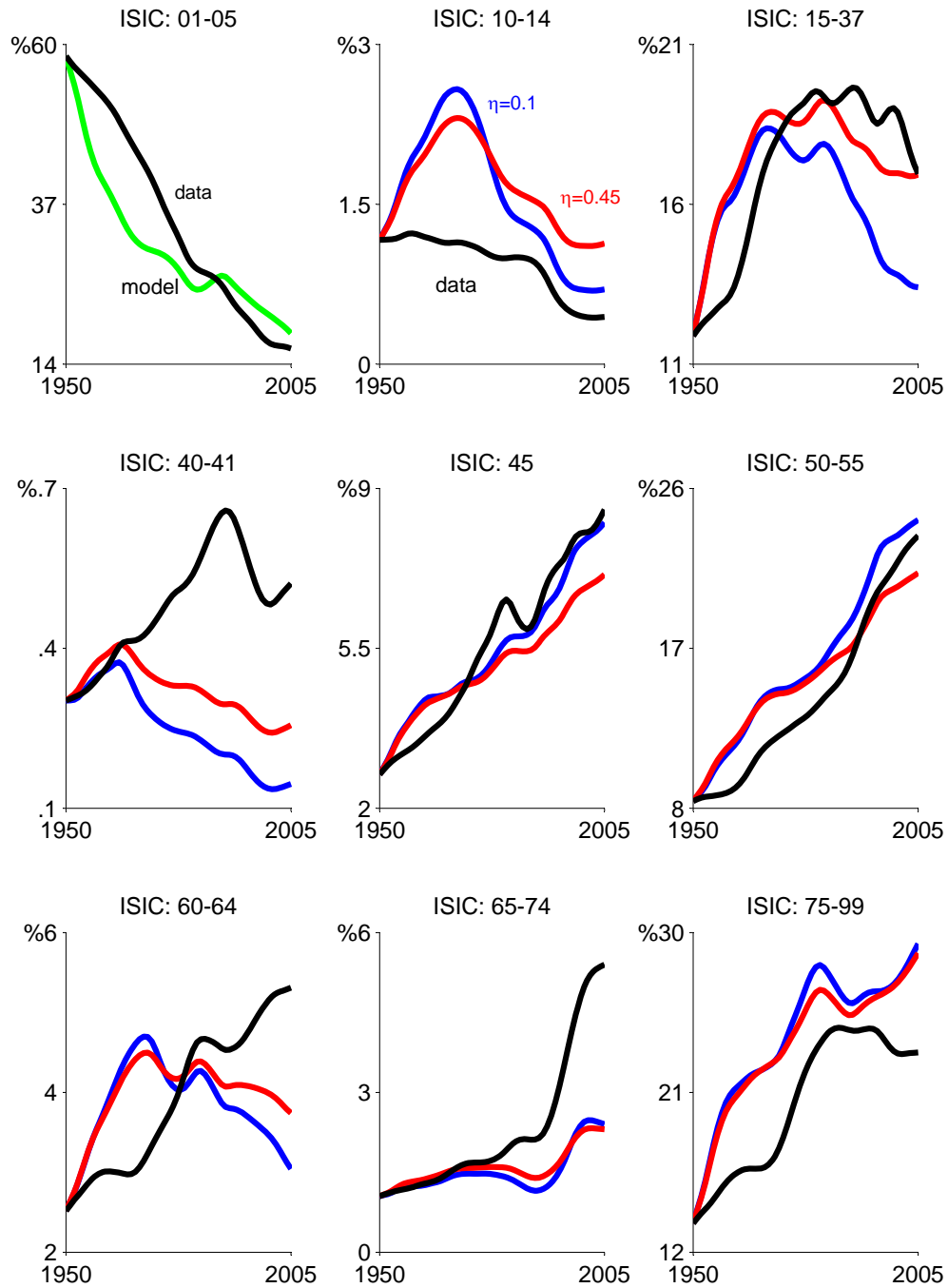


Figure 11: Sectoral Employment Shares, Data versus Model, Mexico: 1950-2005

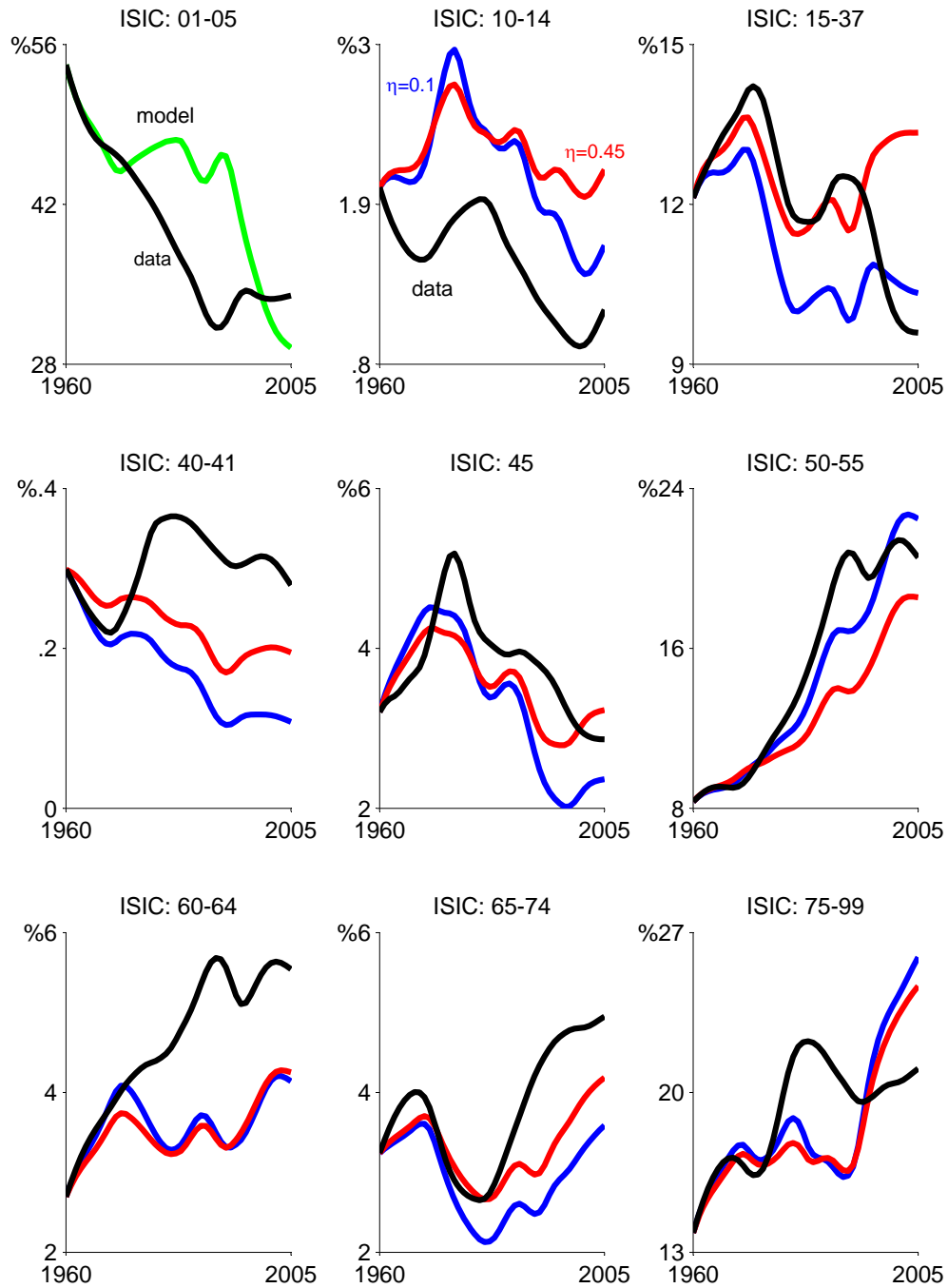


Figure 12: Sectoral Employment Shares, Data versus Model, Peru: 1960-2005

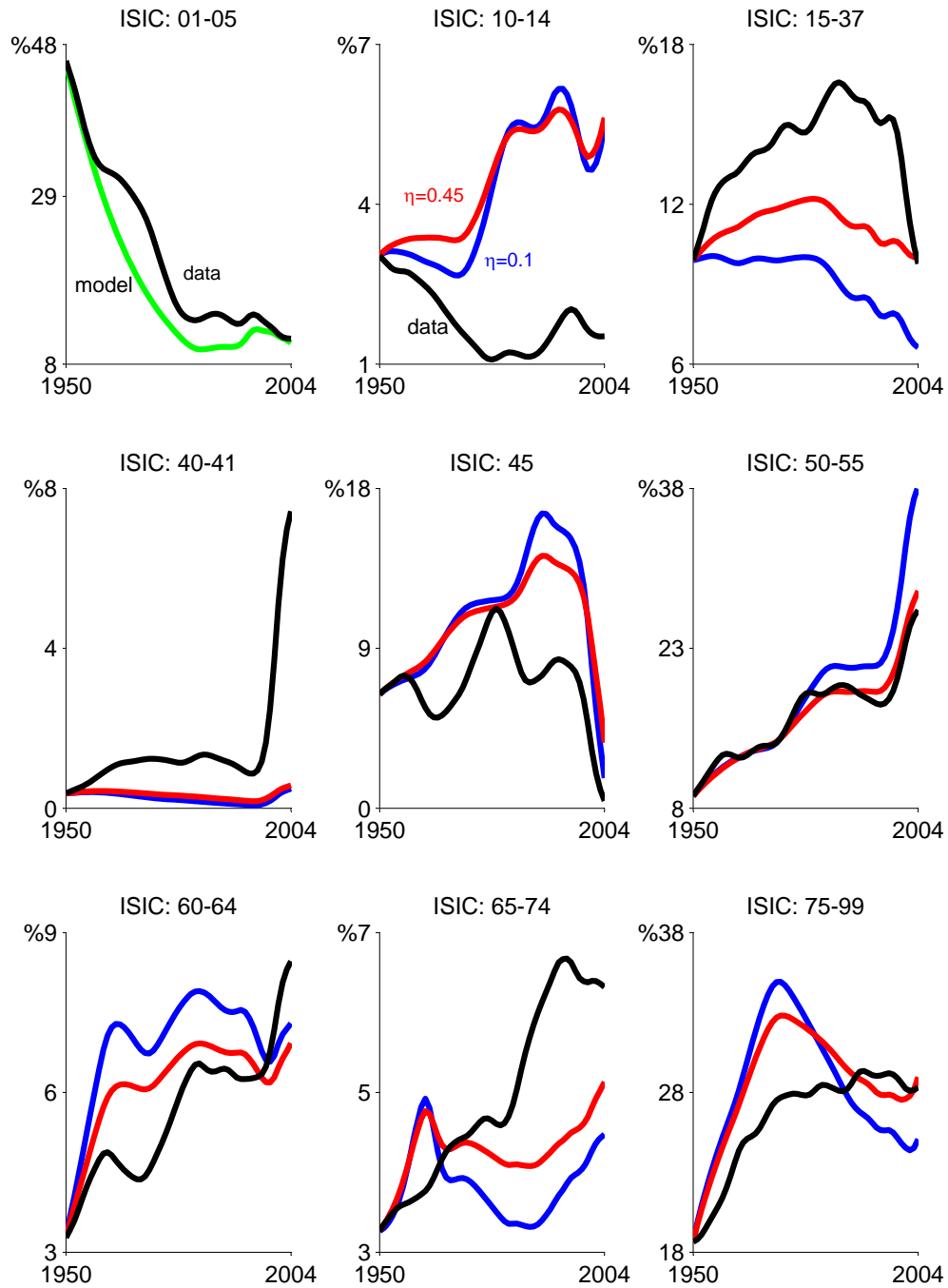


Figure 13: Sectoral Employment Shares, Data versus Model, Venezuela: 1950-2004