March 2000

IMF Staff Country Report No. 00/30

People's Republic of China–Hong Kong SAR: Selected Issues and Statistical Appendix

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International Monetary Fund
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INTERNATIONAL MONETARY FUND

PEOPLE'S REPUBLIC OF CHINA—
HONG KONG SPECIAL ADMINISTRATIVE REGION[1]

Selected Issues and Statistical Appendix

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Approved by the Asia and Pacific Department

February 7, 2000

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[1]The term "country," as used in this paper, does not in all cases refer to a territorial entity that is a state as understood by international law and practice; the term also covers some territorial entities that are not states, but for which statistical data are maintained and provided internationally on a separate and independent basis.

I. Domestic Competition, Cyclical Fluctuations, and Long-Run Growth[1]

A. Introduction

1. Hong Kong SAR has traditionally been viewed as having highly competitive product and factor markets. Competition has been credited not only with contributing to high long-run output and productivity growth but also with providing a supporting framework for rapid price adjustment in response to economic shocks while maintaining a fixed exchange rate. Given the importance of competition, surprisingly little systematic empirical work has been done in evaluating the degree of competition in Hong Kong SAR's industries. While prices have historically adjusted much more rapidly in response to shocks in Hong Kong SAR than in OECD economies (Box I.1), many observers in recent years have raised questions about the degree of domestic competitiveness, particularly in light of the economy becoming increasingly dominated by service industries.[2]

2. This chapter estimates quantitative, industry-level measures of the intensity of competition and compares them both across industries and between Hong Kong SAR and OECD countries. These measures are also used to evaluate whether competition has changed in the last decade and how markup cyclicality affects the adjustment process. The chapter has four main findings:

- **Hong Kong SAR is neither significantly more nor significantly less competitive than the average OECD country**. Given its fixed exchange rate and exposure to external shocks, however, Hong Kong SAR may actually need more competition than other countries. Further investigation of competition in specific sectors may therefore be justified. Most of the measures in this paper suggest that food processing, nonmetallic minerals, real estate and transportation are less competitive than the average industry, while construction, restaurants and hotels, and textiles and apparel appear to be among the most competitive.

- **Competition in Hong Kong SAR has become slightly less intense over the last decade as the economy has rapidly shifted out of manufacturing.**

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[1]This paper was written by Eric Zitzewitz, during a summer internship at the Fund, and is expected to be issued in the Working Paper series. Jahangir Aziz (ext. 37693) is available to answer technical or factual questions on the paper.

[2]The Hong Kong SAR Consumer Council has issued reports, since 1992, questioning the competitiveness of several service industries, including broadcast television, supermarket retailing, heating fuel, lift maintenance, residential property development, and retail banking.

Box I.1. Price Adjustment in Hong Kong SAR and OECD Countries

The rapid adjustment of prices in Hong Kong SAR in the past is illustrated by the slope of the Phillips Curve, i.e., the effect of the level of the unemployment rate on the acceleration of the inflation rate. A single point increase in the unemployment rate has historically been associated with a deceleration of 0.41 points in inflation in Hong Kong SAR, compared with 0.05 points for the average country in our OECD sample. The conclusion that price adjustment has been extremely rapid in Hong Kong SAR is robust to controlling for external price shocks (represented by the acceleration of price inflation for imports, exports, or oil prices) and unemployment hysterisis effects (handled by including lagged unemployment in the regression equation).

Phillips Curve in Hong Kong SAR and OECD, 1973–98
Dependent Variable: Change in Year-on-Year Rate of CPI Inflation

Controls			
Oil, import, and export price inflation	...	X	X
Lagged unemployment	...	...	X
Hong Kong SAR	-0.41	-0.33	-0.42
	(0.10)	(0.09)	(0.12)
14 OECD Countries	-0.05	-0.04	-0.21
	(0.01)	(0.01)	(0.02)
Japan	-0.32	-0.15	-1.51
	(0.19)	(0.17)	(0.45)
United States	-0.19	-0.11	-0.21
	(0.03)	(0.03)	(0.05)
Canada	-0.08	-0.07	-0.20
	(0.02)	(0.02)	(0.05)
United Kingdom	-0.07	-0.06	-0.41
	(0.03)	(0.03)	(0.09)
Italy	-0.05	-0.04	-0.07
	(0.04)	(0.04)	(0.18)
France	-0.04	-0.04	-0.17
	(0.01)	(0.01)	(0.09)
Germany	-0.02	-0.02	-0.18
	(0.01)	(0.01)	(0.06)

Note: Regressions use quarterly data. Lagged unemployment is lagged by 4 quarters. Regressions are estimated using OLS and are not intended to be a prediction of the effect of unemployment on the acceleration of inflation, but rather a measure of their correlation and relative variance. Standard errors are in parentheses.

- **Markups are more pro-cyclical in Hong Kong SAR than in the average OECD country in the service sector, which now accounts for over 90 percent of GDP.** The shift to services has also made economy-average markups more pro-cyclical. This should be contributing to faster-than-average price adjustment in Hong Kong SAR.

- **Market imperfections in both Hong Kong SAR and the OECD cause labor shares from national accounts data to understate the contribution of labor in output growth.** Using an underestimated labor share downwardly biases measured total factor productivity (TFP) growth for countries with rising capital-labor ratios, for example, the Asian NIEs. Correcting this bias increases the contribution of TFP to growth in Hong Kong SAR. Moreover, such corrections to the growth accounting methodology could increase the productivity growth of all Asian Newly Industrialized Economies (NIEs) relative to OECD countries.

3. The remainder of the chapter is organized as follows. The next section discusses various methodologies and data used for measuring competition. The data in Hong Kong SAR is limited along two key dimensions, and thus several imperfect measures of competitiveness are experimented with. The third section compares the level of the intensity of competition in Hong Kong SAR with that of OECD, while the fourth section examines how the intensity of competition in Hong Kong SAR has changed over time. The fifth section compares the cyclicality of markups in Hong Kong SAR and the OECD and discusses the implications for the adjustment process. A final section examines the implications of these findings about markups for the measurement of total factor productivity and thus for long-run growth in Hong Kong SAR.

B. Methodology and Data

Some Basic Concepts

4. Under Cournot competition, a profit maximizing firm sets its quantity such that:

$$(P - MC)/P = (1/\varepsilon_d) / n_{eff} \qquad P = \varepsilon_d \cdot n_{eff} / (\varepsilon_d \cdot n_{eff} - 1) \cdot MC$$

where P is the price of the good, MC is its marginal cost, ε_d is the market elasticity of demand and n_{eff} is the effective number of firms in the market, which is equal to one if firms are perfectly colluding and the actual number of firms if they are behaving non-cooperatively. Note that higher markups do not necessarily imply less competition; they may also be due to lower demand elasticity. If it is assumed that the elasticity of demand for the output of a given sector is constant across countries, then a cross-country comparison of markups can reveal differences in competition. Comparisons of markups across sectors within a country can be more problematic, however, since demand elasticities can be quite different across sectors.

5. There are several theories that predict that markups will vary with the business cycle. In the two most popular—Rotemburg and Saloner (1986) and Green and Porter (1984)—markups vary because the ability of firms to collude, and thus n_{eff}, varies with the business cycle. In the Rotemburg and Saloner model, collusion is harder to sustain in booms because the benefits of cheating are proportional to current demand but the benefits of maintaining collusion are proportional to long-run demand. Sustainable markups are therefore counter-cyclical.[3] In Green and Porter, collusion is harder to sustain in recessions since firms misinterpret a fall in market demand as cheating and this leads to price wars and thus pro-cyclical markups, causing average markups to be pro-cyclical.[4] Counter-cyclical markups appear to be more common empirically, at least in the United States.[5]

6. In order to measure the cyclicality of markups, consider the following relationship between price-marginal cost (P-MC) and price-average cost (P-AC) markups(Morrison, 1990):

$$P/AC = (CU / RTS) \cdot (P/MC)$$

where *CU* is the capacity utilization of an industry (defined as the long-run minimum cost to produce the current quantity divided by the current total cost) and *RTS* is the long-run return to scale (defined as the ratio of marginal cost to minimum average cost). Since capacity utilization is usually strongly procyclical and returns to scale are roughly constant through the business cycle, P-AC markups can be pro-cyclical even when P-MC markups are counter-cyclical. This is in fact what the literature has found for the United States.[6] If the variation of capacity utilization and returns to scale with the business cycle is similar across countries within a given sector, then more procyclical P-AC markups are in country, then less

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[3]The "price wars during booms" referred to in the title of Rotemburg and Saloner is actually a misnomer in that price wars do not occur in equilibrium in their model. Rather, the price on which firms collude is lowered during booms to reduce the temptation for cheating.

[4]In Green and Porter firms observe only their own demand. Low demand for a given firm can result from either cheating by another firm or a negative demand shock. In equilibrium, no firms cheat, but in order to sustain this equilibrium firms respond to negative demand shocks with a price war.

[5]Rotemburg and Woodford (1999).

[6]DHP (1986) found pro-cyclical P-AC margins, while Domowitz, Hubbard, and Petersen (1987) and Rotemberg and Woodford (1991) found countercyclical P-MC margins in U.S. manufacturing. Bils (1987) and Morrison (1990) found that the MC/AC ratio is strongly pro-cyclical, which is consistent with these findings.

countercyclical are P-MC margins.[7] Likewise, if the average level of capacity utilization and returns to scale are similar across countries, comparisons of the level of P-AC markups can be revealing about P-MC markups.

Estimation Techniques

7. Three broad approaches have been taken to estimating P-AC and P-MC markups and margins:[8] direct measurement of P-AC margins, estimation of marginal cost by instrumenting for output, and estimating P/MC, CU, and RTS using a structural model (Morrison, 1990). In this paper, both of the first two methods will be used. The third method is more desirable, but is impossible for Hong Kong SAR given the data available.[9]

- **Direct measurement of P-AC**. Domowitz, Hubbard, and Petersen (DHP) (1986) directly measured price and average variable cost using census data. This approach is the most straightforward and allows one to calculate an independent measure of the P-AC margin in each year, allowing one to estimate margin cyclicality even with short time series. Drawbacks of this approach include the difficulty of measuring the economic cost of capital services and the fact that, as discussed above, P-AC margins are more difficult to interpret as measures of competitiveness than P-MC margins.

Since time series are too short in Hong Kong SAR to allow the construction of capital stocks, P-AC margins will be measured without any allowance for capital costs. DHP (1986) noted that under the assumptions that labor is completely variable, capital is completely fixed, and

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[7]The cyclical variation of capacity utilization depends importantly on adjustment costs. One might expect adjustment costs to be lower in Hong Kong SAR than in the OECD because of lower firing costs or the use of less capital-intensive technologies. Less cyclical capacity utilization would cause P-MC margin cyclicality to more closely approximate P-AC margin cyclicality in Hong Kong SAR than in the OECD.

[8]This paper discusses both markups (Price/Cost) and margins [(Price–Cost)/Price] depending on which is appropriate for the theory or estimation technique being discussed. The two concepts are obviously very closely related; higher markups always imply higher margins, and vice versa.

[9]Morrison (1990) estimates P-MC and P-AC markups while allowing for adjustment costs for capital and labor (which generate variance in capacity utilization), nonconstant returns, and time-varying markups. In estimating her structural model, Morrison makes use of both nominal and (separately deflated) real data on three purely marginal inputs: materials, energy, and purchased services, in addition to her data on the quasi-fixed labor and capital inputs. This data is essential to giving her estimation approach sufficient power, and given its absence in Hong Kong SAR, this methodology is not attempted.

short-run returns to scale are constant, a P-AC margin which excludes capital costs is equal to a P-MC margin. To the extent that these assumptions are violated, the P-AC margins measured in this paper will be imperfect measures of P-MC margins.

- **Econometric estimation of P-MC margins**. In this paper three methodologies for estimating P-MC margins were considered: Hall (1988), DHP (1988), and Roeger (1995). All of these methods assume a constant margin over time, constant returns and no fixed or adjustment costs. Only a modified version of the Roeger methodology is feasible for Hong Kong SAR, but this "modified Roeger" method yields results which are highly correlated with those from other methods.

8. The Hall and DHP methodologies both use instrumental variables to identify changes in an industry's output which are not related to changes in its productivity.[10] These exogenous changes in output are then used to infer marginal cost and P-MC margins. The respective Hall and DHP estimating equations are:

$$dq - dk = \mu \cdot a \cdot (dl - dk) + d(\ln A)$$

$$dTFP = \gamma \cdot (dq - dk) + (1 - \gamma) \cdot d(\ln A)$$

where dq, dk, dl, and dTFP are changes in the logs of output, capital, labor, and measured TFP, a is the observed labor share, μ is the P-MC markup, and γ is the P-MC margin.[11] The change in unobserved true productivity (dlnA) is treated as the error term in the estimation, and the identifying assumption is that the demand instrumental variables are uncorrelated with true productivity growth. Hall used defense spending, world oil prices, and the political party of the President as demand instruments for U.S. industries, but these instruments have been criticized as being only weakly correlated with output and inappropriate for other countries. Fortunately, DHP found that using aggregate GDP as a demand instrument yielded similar results, and this is the instrumenting approach followed in this study.[12]

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[10]The need for instrumental variables can be most intuitively seen from considering the analogous problem of estimating marginal cost from data on cost and output. Output is endogenous to cost, in that an increase in productivity will both reduce cost and increase output. One therefore needs to use demand-shifting instrumental variables to identify the effect on cost of a demand-related increase in output.

[11]This equations are derived and discussed in more detail in Appendix I. For reference, the Hall, DHP, and Roeger estimating equations are A2, A3, and A6, respectively.

[12]The fact that using aggregate GDP and using the Hall instruments yields similar results suggests that either aggregate GDP is uncorrelated with true industry productivity (i.e., there

(continued...)

9. The Roeger method, in contrast, eliminates the unobserved productivity term from the estimating equation, removing the need for instrumental variables.[13] Instead of using the primal (output-based) Solow residual, Roeger takes the difference between the primal and dual (price-based) residuals, eliminating the productivity term. His estimating equation is:

$$(dq + dp) - a\cdot(dl + dw) - (1 - a)\cdot(dk + dr) = \gamma \cdot [(dq + dp) - (dk + dr)]$$

10. Notice that the Roeger method requires only nominal data, which is very helpful given the lack of industry-level price deflators in Hong Kong SAR. It does require data on current price capital inputs, however. Since capital stocks are unavailable for Hong Kong SAR, a modified Roeger methodology using gross fixed capital formation as the capital input is estimated.[14]

Data Availability and Sources

11. Data is available for Hong Kong SAR for 85 industries (26 manufacturing and 59 service) that cover 5 out of 9 major sectors in the economy.[15] As mentioned above, the available data has several important limitations, however. First, only 8 years (1990–97) and 12 years (1986–97) of data are available for manufacturing and service industries,

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are no economy-wide productivity shocks) or that the Hall instruments were so weak that his estimates are biased towards OLS (see Bound, Jaeger, and Baker, 1995).

[13]Roeger verified that exogeneity of his right-hand side variable held using U.S. data, and this result is confirmed in Hausman (1978) tests in Table I.5. For the OECD dataset, however, Roeger's exogeneity assumption is not supported by the data—OLS estimates of P-MC margins are upwardly biased by about 0.1. As a result, both OLS and IV estimates will be made in this paper.

[14]One might worry that a fast growing economy like Hong Kong SAR would be off its balanced growth path and have a more rapidly increasing capital-output ratio than an average OECD economy and, therefore, a higher GFCF-capital stock ratio. If this were true, the modified Roeger methodology would produce downwardly biased estimates of the P-MC margin. Young (1995) reports 1986–91 output and capital stock growth of 6.3 percent and 6.2 percent a year, respectively, suggesting that this is not a major issue in the period studied.

[15]A list of the 85 industries included in the study is provided in Annex Table I.1. The data cover manufacturing, construction, trade, transportation/storage/communication (TSC), and finance/insurance/real estate/business services (FIRE) and exclude agriculture, mining, utilities, and community, social, and personal services. Data is only available for only a portion of TSC (transportation) and FIRE (real estate). The portions of the five sectors covered accounted for 54.3 percent of GDP in 1997 (Table I.8).

respectively.[16] This makes it impossible to construct industry-level capital stocks and harder to identify marginal costs and the cyclicality of markups. The latter is complicated by the fact that the particular 12 years for which we have data was one of the most stable periods in Hong Kong SAR history, especially the 8 years (1990–97) for which we have manufacturing data. Second, industry-level output and input price deflators are not available for Hong Kong SAR. These deflators are especially important for Hong Kong SAR given the dramatic changes in relative prices in during the period studied,[17] and their absence restricts us to using the Roeger methodology for estimating P-MC margins.[18]

12. The Hong Kong SAR data is matched with data for 14 countries[19] from the OECD ISDB and STAN databases. The OECD data is available for 27 manufacturing industries and 11 nonmanufacturing industries; 26 and 7 of which match with the Hong Kong SAR data. Due to the shortness of the manufacturing time series, the 26 matching manufacturing industries are pooled into the 14 manufacturing categories in the ISDB, which helps increase the power of estimates for Hong Kong SAR. Value-added data, and thus margins, are unavailable for communication and finance/insurance for Hong Kong SAR, and thus the combined Hong Kong SAR-OECD sample includes 14 manufacturing and 5 nonmanufacturing industries.

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[16]Throughout the paper, services will be used to refer to all nonmanufacturing sectors in the sample, including construction. Although construction is usually considered part of industry, it fits more naturally with the service industries in Hong Kong SAR because it is a nontraded, growing sector.

[17]Dodsworth and Mihaljek (1997) estimated annual output price increases from 1983–94 of 2.1 percent for manufacturing, 5.2 percent for trade, 4.0 percent for transport, storage, and communication, 10.7 percent for FIRE, and 10.1 percent for community social and personal services.

[18]The Dodsworth-Mihaljek estimated output price deflators involve assumptions which are especially difficult for key industries such as real estate and wholesale-retail trade. In addition, there are no separate input price deflators. Assuming proportionate changes in input and output prices is problematic given the large changes in relative prices. As a result, their approach to estimating industry-level price deflators was not followed.

[19]Australia, Belgium, Canada, Denmark, Finland, France, (western) Germany, Italy, Japan, the Netherlands, Norway, Sweden, the United Kingdom, and the United States.

C. How Competitive is Hong Kong SAR?

13. The three measures of margins presented in this section yield slightly inconsistent conclusions about how the competitiveness of Hong Kong SAR's industries compares with the OECD or the United States (Figure I.1):

- Price-average cost margins defined on value added are generally higher in Hong Kong SAR, especially in manufacturing (Table I.1).
- P-AC margins defined on gross output are slightly higher on average in Hong Kong SAR in manufacturing, and slightly lower in services (Table I.1).[20]
- P-MC margins, as estimated by the modified Roeger methodology, are lower in Hong Kong SAR in both manufacturing and services (Table I.2).

14. Although comparing Hong Kong SAR with the OECD average yields different results depending on the measure, on almost all of measures, Hong Kong SAR is neither the most nor the least competitive of our 15 sample countries (Table I.3). This suggests that Hong Kong SAR is neither significantly more nor significantly less competitive than OECD countries.

15. Of course, it may be the case that given its fixed exchange rate and extreme openness and exposure to external shocks, Hong Kong SAR needs to be significantly more competitive than the average OECD economy. Figure I.2 compares the results in this section for Hong Kong SAR across industries to identify industries in which competition could potentially be stronger. These comparisons require stronger assumptions than comparisons across countries, as discussed in Section B, but may nonetheless be informative. The plurality of the measures in Figure I.2 suggest that food processing, nonmetallic minerals, real estate and transportation are less competitive than the average industry, while construction, restaurants and hotels, and textiles and apparel are among the most competitive. It should be noted, however, that the nonmetallic minerals industry comprises an extremely small portion of total manufacturing output.

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[20]Defining margins on gross output is more theoretically sound since firms mark up material costs as well as labor and capital costs, but since gross output of service industries is unavailable for the OECD countries, value-added P-AC margins are also calculated.

Figure I.1. Industry-by-Industry Comparison of Intensity of Competition in Hong Kong SAR Versus the OECD

Industry	P-AC Margin Levels: Value Added	P-AC Margin Levels: Gross Output	P-MC Margins: OLS Estimate	P-AC Margin: Cyclicality
Manufacturing				
Food, beverages, and tobacco				
Textiles, apparel and leather				
Wood and wood products				
Paper and paper products				
Chemicals; rubber and plastic products				
Nonmetallic minerals				
Basic metal industries				
Fabricated metal, machinery and equipment			N.A.	
Fabricated metal products			N.A.	
Agricultural and industrial machinery			N.A.	
Office equipment and instruments			N.A.	
Electrical goods			N.A.	
Transport equipment			N.A.	
Other manufacturing industries				
Services				
Construction				
Wholesale and retail trade		N.A.		
Restaurants and hotels		N.A.		
Transportation				
Real estate		N.A.		

Legend
- 10 percent least competitive/procyclical
- 30 percent least competitive/procyclical
- Moderately competitive/procyclical
- 30 percent most competitive/procyclical
- 10 percent most competitive/procyclical

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. Much more competitive is defined as a 12 percent lower value added P-AC margin, a 4 percent lower gross output P-AC margin, or a significantly lower OLS P-MC margin. More competitive is defined as a 3 percent lower value added P-AC margin, a 1 percent lower gross output P-AC margin, or an insignificant difference of -.03 in the OLS estimate of the P-MC margin.
2. Much more pro-cyclical is defined as a significantly higher cyclicality coefficient, more pro-cyclical is defined as an insignificant difference in cyclicality greater than 1.0.
3. Much less and less competitive/pro-cyclical are the reverse of these definitions. Significant means significant at the 5 percent level.

Table I.1. Hong Kong SAR: Price-Average Cost Margins, 1986–97 Average

(In percent)

ISIC	ISDB code	Industry name	Value-Added Margins			Gross Output Margins		
			Hong Kong SAR	OECD	United States	Hong Kong SAR	OECD	United States
3	MAN	Manufacturing	42.5	34.8	30.8	12.6	11.5	11.8
31	FOD	Food, beverages, and tobacco	56.4	48.1	47.8	20.6	11.7	13.4
32	TEX	Textiles, apparel and leather	35.1	27.3	21.1	9.5	9.7	8.8
33	WOD	Wood and wood products	35.7	32.1	30.9	10.4	11.9	13.6
34	PAP	Paper and paper products	42.0	32.7	30.9	15.6	12.3	13.9
35	CHE	Chemicals; rubber and plastic products	47.2	47.9	41.7	14.0	15.9	10.8
36	MNM	Nonmetallic minerals	57.1	20.0	26.5	13.6	8.4	9.5
37	BMI	Basic metal industries	50.0	32.5	26.6	6.8	8.8	6.7
38	MEQ	Fabricated metal, machinery and equipment	47.3	26.3	24.7	13.6	9.9	9.6
	BMA	Fabricated metal products	41.4	30.1	22.7	12.3	15.1	12.5
	MAI	Agricultural and industrial machinery	44.3	24.5	23.2	15.0	10.1	10.0
	MIO	Office equipment and instruments	52.3	28.9	20.4	10.3	14.5	6.3
	MEL	Electrical goods	55.4	24.1	26.6	19.3	11.0	17.4
	MTR	Transport equipment	26.5	20.1	23.7	16.3	6.4	5.1
39	MOT	Other manufacturing industries	36.4	20.2	32.7	9.1	10.0	21.6
5-8		Services	55.1	46.4	44.5	8.3	...	14.6
5	CST	Construction	45.6	33.0	30.6	6.1	...	16.3
61-63	RWH	Wholesale and retail trade	56.9	45.0	41.7	5.2	...	...
64-65	HOT	Restaurants and hotels	30.7	42.9	40.6	12.9	...	...
71	TAS	Transportation	51.5	37.0	33.3	14.1	...	14.0
83	RES	Real estate	53.1	77.2	78.8	14.3	...	...

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Table I.2. Hong Kong SAR: OLS and IV Estimates of P-MC Markups Using the Modified Roeger Methodology

	Hong Kong SAR		OECD		United States		OLS Coeff. Diff.	
	OLS	IV	OLS	IV	OLS	IV	HK-OECD	HK U.S.
Manufacturing	0.303	-0.067	0.388	-0.020	0.349	1.183	-0.085	-0.046
	(0.012)	(2.231)	(0.005)	(0.057)	(0.026)	(2.589)		
Food, beverages, and tobacco	0.392	0.438	0.492	0.637	0.433	1.206	-0.101***	-0.042
	(0.022)	(0.188)	(0.014)	(0.141)	(0.046)	(2.543)		
Textiles, apparel and leather	0.216	0.223	0.245	0.192	0.269	0.292	-0.029**	-0.053**
	(0.010)	(0.161)	(0.009)	(0.032)	(0.021)	(0.050)		
Wood and wood products	0.325	0.273	0.291	-0.020	0.302	-0.254	0.034	0.023
	(0.022)	(0.100)	(0.016)	(0.101)	(0.036)	(0.669)		
Paper and paper products	0.277	-0.759	0.315	0.060	0.275	-0.260	-0.038	0.002
	(0.055)	(9.951)	(0.012)	(0.090)	(0.025)	(0.889)		
Chemicals; rubber and plastic products	0.334	0.349	0.483	-1.411	0.465	0.617	-0.149***	-0.130***
	(0.024)	(0.403)	(0.012)	(7.150)	(0.031)	(0.142)		
Nonmetallic minerals	0.276	1.326	0.316	0.094	0.368	-0.236	-0.040	-0.092***
	(0.113)	(3.137)	(0.012)	(0.057)	(0.029)	(0.874)		
Basic metal industries	0.460	0.484	0.556	3.178	0.503	0.726	-0.095	-0.043
	(0.071)	(0.553)	(0.013)	(6.658)	(0.033)	(0.193)		
Other manufacturing industries	0.346	0.063	0.366	-0.003	0.362	-0.004	-0.020	-0.017
	(0.031)	(0.658)	(0.019)	(0.208)	(0.036)	(0.948)		
Services	0.397	0.295	0.404	0.220			-0.007	
	(0.007)	(0.088)	(0.006)	(0.042)				
Construction	0.296	0.241	0.310	0.195	0.307	0.137	-0.014	-0.012
	(0.009)	(0.055)	(0.010)	(0.048)	(0.023)	(0.124)		
Wholesale and retail trade	0.357	-0.370	0.363	0.162	0.315	0.284	-0.006	0.042*
	(0.010)	(2.664)	(0.017)	(0.060)	(0.017)	(0.039)		
Restaurants and hotels	0.374	0.303	0.409	0.223	0.446	-0.274	-0.035***	-0.073***
	(0.008)	(0.095)	(0.010)	(0.179)	(0.022)	(2.076)		
Transportation	0.404	0.334	0.435	0.033	0.393	0.308	-0.031**	0.011
	(0.007)	(0.061)	(0.011)	(0.329)	(0.017)	(0.054)		
Real estate	0.751	0.770	0.773	0.777	0.755	0.782	-0.023**	-0.005
	(0.006)	(0.035)	(0.007)	(0.022)	(0.007)	(0.019)		

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. Regressions are pooled for industries containing more than one component industry.
2. Significance at the 10, 5, and 1 percent level is indicated by one, two, and three asterisks, respectively.

Table I.3. Hong Kong SAR's Relative Rank on Different Measures of Competitiveness

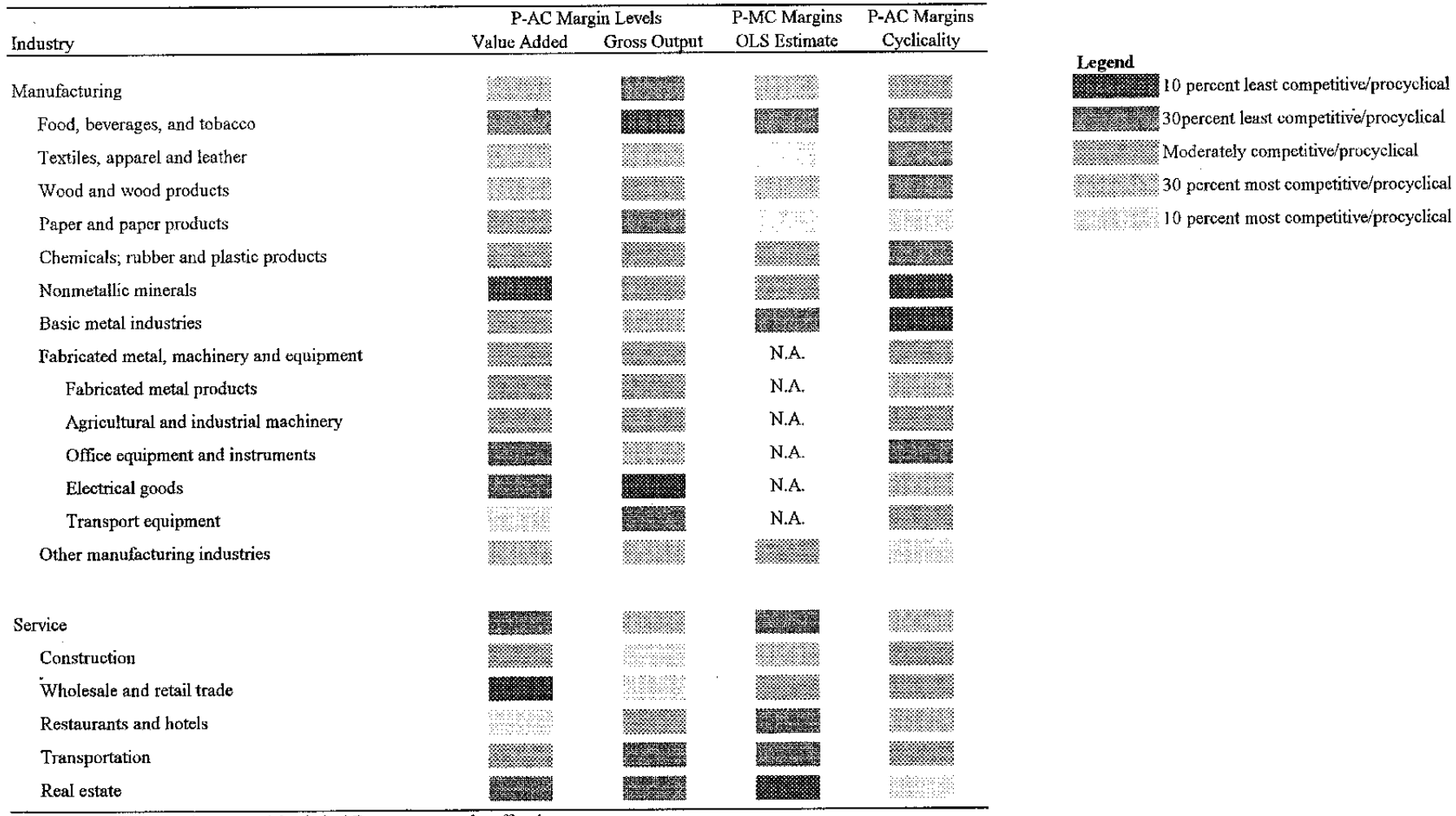
Measure	Margin	Definition	Manufacturing	Services
Level	P-AC	Value added	14	13
Level	P-AC	Gross output	10	N.A.
Level	P-MC	Value added	1	9
Cyclicality	P-AC	Value added	13	3
Cyclicality	P-AC	Gross output	9	2

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. A lower rank number implies more competition or more pro-cyclical margins.
2. Rankings are out of the 15 sample countries, except for P-MC margins, where they are out of 13.

Figure I.2. Comparison of Intensity of Competition Across Industries in Hong Kong SAR



Sources: Hong Kong Census and Statistical Department; and staff estimates.

Potential Biases in the Competitiveness Measures

16. Both the P-AC and the estimated P-MC margins are imperfect estimates of true P-MC margins, as discussed in Section B. Recall that for P-AC margins that exclude capital costs to equal P-MC margins, capital would have to be completely fixed, labor completely variable, and returns to scale would have to be constant. Obviously these assumptions do not hold in reality, but the primary concern in this paper is whether making them distorts the comparison between Hong Kong SAR and the OECD. For example, even if capital and labor were both only partly fixed, if they were fixed to the same degree and if factor shares were similar in Hong Kong SAR and the OECD, the Hong Kong SAR-OECD difference in P-AC margins should still be an unbiased indicator of differences in P-MC margins.

17. On the other hand, if Hong Kong SAR uses technologies or has a product mix that involved less fixed costs across all factors (and thus higher MC/AC ratios), it could have simultaneously higher P-AC margins and lower P-MC margins. Furthermore, if Hong Kong SAR has a higher capital share in value-added or output, this could upwardly bias its measured P-AC margin differentially.[21] Given the limited data available for Hong Kong SAR, there is little one can do but accept that the P-AC margins may be slightly biased; this is part of why this paper contains multiple measures.

18. The P-MC margins estimated by the "modified Roeger" methodology are likewise imperfect measures. The IV results for Hong Kong SAR are fairly erratic with high standard errors, thus we rely mainly on the OLS results (Table I.2). Comparing the modified Roeger method with the DHP and unmodified Roeger methods for U.S. and OECD data suggest that the OLS modified Roeger estimates may be downwardly biased (Table I.4). This would be the case if growth in gross fixed capital formation was either an especially noisy proxy for growth in current price capital input.[22] As with P-AC margins, we are especially concerned with sources of differential bias. The period studied was actually a fairly stable one for Hong Kong SAR; from 1986–97 the standard deviation of the growth rate in aggregate GFCF was 4.3 percent in both Hong Kong SAR and the United States, suggesting that any bias due to measurement error should be comparable across at least these two countries. For OECD countries, the OLS version of the modified Roeger method yields results that are highly

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[21]Developing countries often have higher capital shares (which the value-added P-AC margin as defined in this paper is equivalent to) than developed countries. Two possible explanations of this phenomenon are higher markups or less than unit elasticities of capital-labor substitution.

[22]The bias from GFCF growth being systematically larger or smaller than capital input growth than capital input growth is coincidentally actually quite small, since capital input growth is weighted by the capital share in the numerator and the mean capital share (40 percent) is actually very close to the mean estimator of the P-MC.

Table I.4. Hong Kong SAR: Four Methodologies for Measuring P-MC Margins

				Hall			DHP			Roeger			Modified Roeger		
Sector	Dataset	Output measure	Labor measure	OLS	IV	Diff	OLS	IV	Diff	OLS	IV	Diff	OLS	IV	Diff
Manufacturing	United States	Gross output	Hours	0.264	0.341	0.077	0.387	0.346	-0.041	0.324	0.321	-0.003	0.285	0.270	-0.015
				(0.013)	(0.019)	*0.000*	(0.011)	(0.019)	*0.008*	(0.008)	(0.014)	*0.777*	(0.006)	(0.020)	*0.441*
Manufacturing	United States	Value added	Hours	0.608	0.649	0.041	0.879	0.706	-0.173	0.729	0.757	0.028	0.662	0.520	-0.141
				(0.023)	(0.034)	*0.187*	(0.007)	(0.026)	*0.000*	(0.017)	(0.039)	*0.425*	(0.012)	(0.042)	*0.000*
Manufacturing	United States	Value added	Employment	0.652	0.708	0.056	0.900	0.770	-0.130	0.729	0.757	0.028	0.662	0.520	-0.141
				(0.022)	(0.029)	*0.060*	(0.006)	(0.021)	*0.000*	(0.017)	(0.039)	*0.425*	(0.012)	(0.042)	*0.000*
Manufacturing	OECD	Value added	Employment	-0.082	0.721	0.803	0.827	0.721	-0.106	0.728	0.628	-0.100	0.388	-0.020	-0.409
				(0.049)	(0.016)	*0.000*	(0.008)	(0.016)	*0.000*	(0.011)	(0.024)	*0.000*	(0.005)	(0.057)	*0.000*
Manufacturing	Hong Kong SAR	Value added	Employment										0.303	-0.067	-0.370
													(0.012)	(2.231)	*0.868*
Services	OECD	Value added	Employment	0.108	0.717	0.608	0.713	0.717	0.003	0.632	0.546	-0.086	0.404	0.220	-0.184
				(0.040)	(0.028)	*0.000*	(0.013)	(0.028)	*0.897*	(0.017)	(0.052)	*0.078*	(0.006)	(0.042)	*0.000*
Services	Hong Kong SAR	Value added	Employment										0.397	0.295	-0.102
													(0.007)	(0.088)	*0.243*
Total economy	OECD	Value added	Employment	-0.039	0.721	0.759	0.810	0.721	-0.089	0.713	0.617	-0.095	0.391	0.033	-0.358
				(0.036)	(0.014)	*0.000*	(0.007)	(0.014)	*0.000*	(0.005)	(0.021)	*0.000*	(0.004)	(0.042)	*0.000*
Total economy	Hong Kong SAR	Value added	Employment										0.376	0.304	-0.071
													(0.006)	(0.087)	*0.409*

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. The number below the OLS-IV difference in italics is the p-value of a Hausman (1978) test.
2. The U.S. dataset used in these tests is the Bartlesman-Becker-Gray (1996) dataset collapsed down to the 2-digit SIC level, which should be very similar to the data used by Hall (1988) and Roeger (1995).

correlated with other methods across both countries and industries, so the slightly lower P-MC margins estimated for Hong Kong SAR by the modified Roeger methodology suggest that other methodologies would also have produced slightly lower estimates (Table I.5).

D. Evolution of Competition in the Hong Kong SAR Economy

19. This section examines both whether margins have increased or decreased within industries and whether the rapid sectoral shift which has occurred in Hong Kong SAR has shifted the economy into less competitive industries. As with margin levels, the different measures are inconsistent. The balance of evidence, however, suggests that Hong Kong SAR has become slightly less competitive in the last 10 years:

- Value-added P-AC margins have declined in services, but they have risen in manufacturing and gross output P-AC margins have risen in both sectors (Table I.6).[23]

- P-MC margins, as estimated by the modified Roeger methodology, have been stable in services and declining slightly in manufacturing, although this decline is not statistically significant.[24]

- The shift in the economy towards services has raised average P-MC margins while having a minimal effect on average P-AC margins (Table I.7).[25]

20. The magnitudes of some of the changes in margins are quite large relative to the Hong Kong SAR-OECD level differences discussed in the previous section. Table I.6 suggests that value-added margins have increased by 7.1 percentage points over 10 years in manufacturing and decreased by 6.0 percentage points in services, while gross output margins have increased by 1.9 and 1.4 percentage points, respectively. Table I.7 shows that the shift in industry mix toward services should have increased the economy-average P-MC

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[23]Figure I.3 shows the evolution of these margins over time. The downward trend in service-sector value added margins and upward trend in the other margins can be observed, along with the pro-cyclicality of service sector value-added margins and counter-cyclicality of manufacturing sector margins.

[24]The trend in P-MC margins is estimated by including an interaction term in the modified Roeger regression. The estimated coefficient implies an annual decline of 0.6 and 0.04 percentage points in the P-MC margin for manufacturing and nonmanufacturing, respectively. Neither estimate is significant, however.

[25]See Annex Table I.2 for the evolution of the industrial structure of the economy.

Table I.5. Hong Kong SAR: Correlation of P-MC Margin Estimates Using Different Methodologies

Industry Results		OLS Hall	OLS DHP	OLS Roeger	OLS Mod. Roeg.	IV Hall	IV DHP	IV Roeger	IV Mod. Roeg.
OLS	Hall	1							
OLS	DHP	0.02	1						
OLS	Roeger	0.08	***0.88***	1					
OLS	Mod. Roeger	0.10	***0.68***	***0.84***	1				
IV	Hall	0.48	-0.06	-0.07	-0.19	1			
IV	DHP	0.20	0.92	0.87	***0.69***	-0.01	1		
IV	Roeger	0.02	0.53	0.50	***0.56***	-0.17	0.41	1	
IV	Mod. Roeger	0.31	-0.03	0.04	0.03	0.48	-0.07	0.17	1

Country Results		OLS Hall	OLS DHP	OLS Roeger	OLS Mod. Roeg.	IV Hall	IV DHP	IV Roeger	IV Mod. Roeg.
OLS	Hall	1							
OLS	DHP	-0.18	1						
OLS	Roeger	-0.55	***0.34***	1					
OLS	Mod. Roeger	-0.12	***0.38***	***0.67***	1				
IV	Hall	0.31	0.56	-0.10	0.04	1			
IV	DHP	0.13	0.60	-0.24	***0.45***	0.51	1		
IV	Roeger	-0.63	-0.09	0.66	***0.68***	-0.40	-0.76	1	
IV	Mod. Roeger	0.20	0.51	0.56	0.41	0.15	0.31	-0.14	1

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. Bold italics indicate correlation coefficients highlighted in the text.
2. Although the Hall methodology estimates P/MC and the others estimate (P - MC)/P, the correlation should still be high for the relevant range of values.

Table I.6. Hong Kong SAR: Trend in Price-Average Cost Margins

(Percentage change per year)

Industry	Cyclically Adjusted		Unadjusted	
	Value added	Gross output	Value added	Gross output
Manufacturing	0.7**	0.2	0.4**	0.2**
Food, beverages, and tobacco	0.3	0.5***	-1.2***	-0.3*
Textiles, apparel and leather	1.9**	0.3	0.9**	0.1
Wood and wood products	1.6***	0.5***	0.6**	0.1
Paper and paper products	-4.1***	-1.8**	-2.4***	-0.9***
Chemicals; rubber and plastic products	1.0	0.2	0.1	-0.1
Nonmetallic minerals	5.3**	2.5***	2.7***	1.5***
Basic metal industries	1.7	0.4	-0.5	-0.2
Fabricated metal, machinery and equipment	0.6	0.3	0.4**	0.4***
Fabricated metal products	-2.5***	-1.2***	-1.2***	-0.5**
Agricultural and industrial machinery	-0.9	-0.6*	-0.6*	-0.1
Office equipment and instruments	1.6**	0.7**	0.1	0.2
Electrical goods	2.4	0.8	3.1***	1.6***
Transport equipment	-1.0	-0.5	-0.5*	-0.3
Other manufacturing industries	-1.2	-0.6	0.5	0.0
Services	-0.6***	0.1***	-0.6***	0.1***
Construction	0.1	0.1	0.4	0.0
Wholesale and retail trade	-0.6***	0.0	-0.6***	0.0
Restaurants and hotels	-0.8***	-0.3***	-0.8***	-0.3**
Transportation	-0.9***	-0.1	-0.9***	-0.1
Real estate	-3.5***	-2.9***	-1.1	-0.6

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. One, two, and three asterisks represent significance at the 10 percent, 5 percent, and 1 percent level, respectively.
2. Numbers reported are coefficients on the time trend in a regression of the P-AC margin on a time trend and the GDP gap (for the cyclically adjusted measure).
3. The GDP gap is constructed by applying a Hodrik-Prescott filter (lamba = 1600) to quarterly data and then aggregating the quarterly gap into annual data.

Table I.7. Hong Kong SAR: Effect of Industry Mix Shift on Margin Levels and Cyclicality

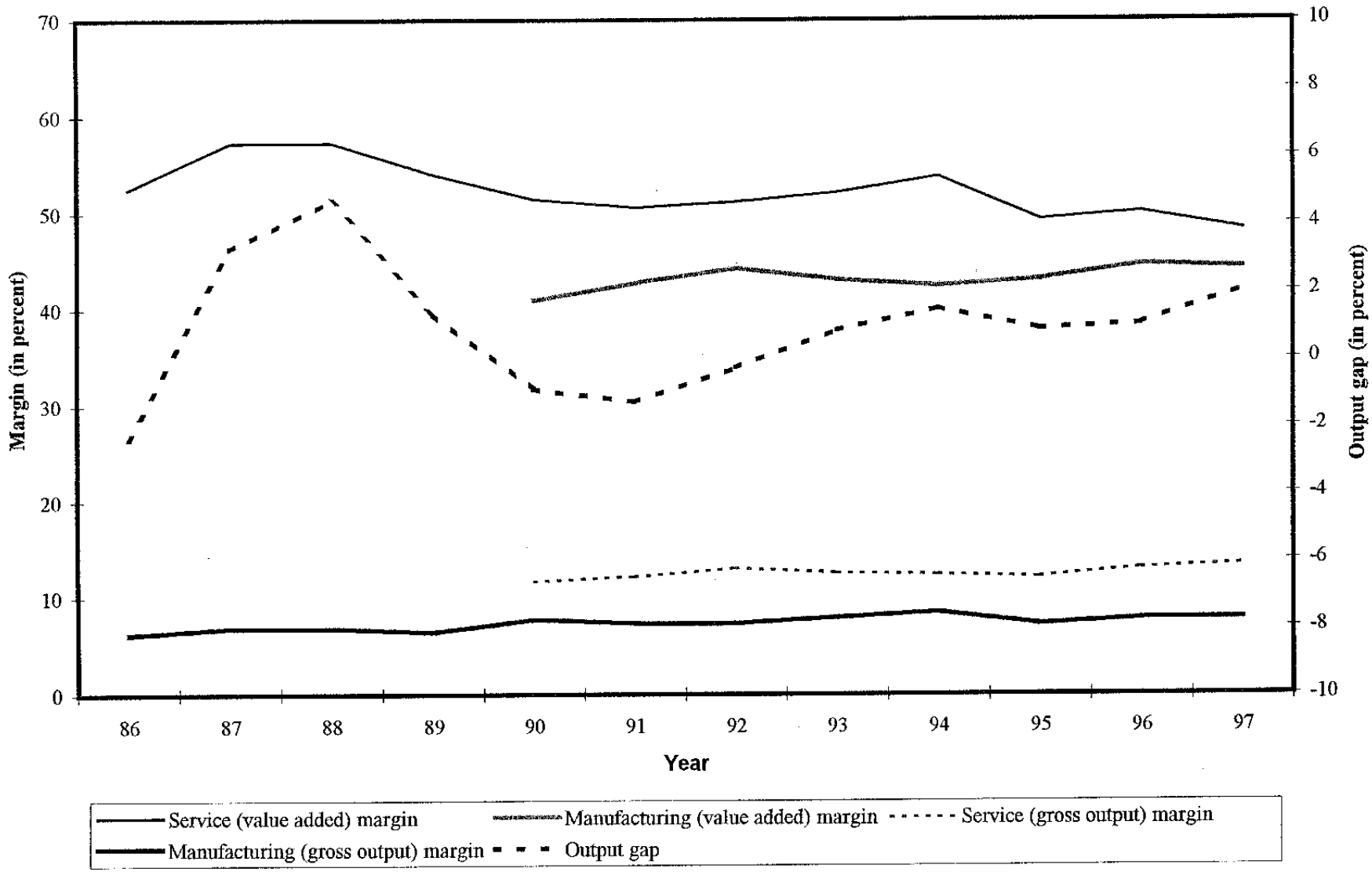
(In percent)

	P-AC margins		P-MC margin	P-AC Cyclicality
	Value Added	Gross Output		
At 1986 industry mix	48.1	10.2	33.3	0.63
At 1997 industry but 1986 real estate share	50.7	9.2	38.3	1.19
At 1997 industry mix	50.8	9.6	41.0	1.51
Total industry mix shift effect	+2.8	-0.6	+7.7	+0.87
Effect of increase in real estate share	*+0.2*	*+0.4*	*+2.7*	*+0.32*

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Note: Higher numbers imply less competition, except for P-AC margin cyclicality.

Figure I.3. Hong Kong SAR: P-AC Margins in Manufacturing and Service Sectors,1986-97



margin by 7.7 percentage points.[26] In contrast, the Hong Kong SAR-OECD level differences in value-added P-AC, gross output P-AC, and P-MC margins were approximately 10, 1, and 2 percentage points, respectively. Given the inconsistency of the measures and their potential biases (discussed in Section C), one should be cautious in drawing firm conclusions above the change in the level of competition in Hong Kong SAR.

E. Cyclicality of Markups and Adjustment in Hong Kong SAR

21. One of the objectives of this chapter was to understand whether imperfect competition has adversely affected cyclical adjustment in Hong Kong SAR. If imperfect competition generates countercyclical markups, as predicted by the Rotemburg-Saloner (1986) model, a worsening of competition could slow down price adjustment, creating problems for an open economy with a fixed exchange rate.

An Illustration of How Cyclicality in Markups Affects Adjustment

22. To see how imperfect competition can affect the adjustment process, consider a simple model of aggregate supply and demand. Expenditure, and thus aggregate demand, is determined by a simple quantity theory of money:

$$PY = VM$$

Where Y refers to aggregate output, V is the velocity of money, and M is the stock of money supply. Prices are set by firms which mark up their marginal wage (W) and material costs (MAT) depending on the degree of competition in their markets:

$$P = c(MAT, W) \cdot MU$$

The aggregate supply relationship governs how sticky price adjustment in response to deviations of aggregate output from its long-run trend is:

$$dp(y) = s_W \cdot dw(y) + s_m \cdot dmat(y) + dmu(y)$$

where lower case letters indicate logarithms, y is the deviation of output from its long-run level and s_w and s_m are the share of wages and materials in cost. Ceteris paribus, if markups

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[26]Estimating the effect of the shift in industry mix involves treating P-MC margins as comparable across industries. As noted in Section B, inferring differences in competitiveness or collusiveness from differences in P-MC margins involves assuming that demand elasticities are the same, which is arguably less likely to be true across industries than within an industry across countries.

are more countercyclical, prices will fall less rapidly during recessions and rise less rapidly during booms.

23. Consider the effects of an adverse monetary shock to aggregate demand. Prices are initially sticky, so the immediate effect of the monetary shock is an equally sized decline in both nominal and real output. A below trend real output level, however, leads to a decline in prices and thus a recovery of real output which continues until output reaches its long-run level and the effect of the monetary shock is fully reflected in prices. If markups are countercyclical, price adjustment is slower and the recession lasts longer.

24. Recessions resulting from a supply shock are also more severe when markups are countercyclical. Consider the effects of a permanent increase in oil price inflation. If monetary policy is unchanged, the increased oil price inflation will lead over time to a higher price level and lower real output level. This process continues until real output has fallen enough so that changes in wages and markups are reduced enough to restore price stability (or, alternatively, until inflation returns to equal the rate of money creation). Absent a change in monetary policy or a reduction in oil price inflation, real output is permanently lower. The size of the decline in real output is greater when markups are counter-cyclical, since more real output decline is required to offset the higher oil price inflation.

How Cyclical Are Markups in Hong Kong SAR?

25. This section measures the cyclicality of P-AC margins in Hong Kong SAR compared with OECD countries and tests whether the structural shift towards services has made P-AC markups more counter-cyclical. As discussed in Section B, the relative cyclicality of P-MC margins can be inferred from the cyclicality of P-AC margins if we assume that capacity utilization responds identically to industry output in all countries.[27] Contrary to expectations, it was found that:

- P-AC margins are significantly more pro-cyclical in Hong Kong SAR than in the OECD in services, while they are slightly more counter-cyclical in manufacturing (Table I.8).

[27]If Hong Kong SAR uses lower fixed cost production techniques, then capacity utilization (as defined in Section B as the ratio of long-run minimum cost to produce the current quantity and current total cost) should be less pro-cyclical in Hong Kong SAR. Thus comparable cyclicality of P-MC margins would imply less pro-cyclical P-AC margins in Hong Kong SAR. Thus a technology-related bias should not explain the pro-cyclical P-AC margins in services in Hong Kong SAR.

Table I.8. Hong Kong SAR: Cyclicality of Price-Average Cost Margins

(Percentage point effect on the margin of a one percentage point change in the output gap)

Industry	Value-Added Margins			Gross Output Margins		
	Hong Kong SAR	OECD	Diff	Hong Kong SAR	OECD	Diff
Manufacturing	-0.43	0.32	-0.75	0.16	0.03	0.12
Food, beverages, and tobacco	-3.45	-0.78	-2.67**	-1.91	-0.12	-1.78***
Textiles, apparel and leather	-2.21	-0.24	-1.97	-0.55	-0.05	-0.50
Wood and wood products	-2.47	0.03	-2.50***	-0.97	0.03	-1.00***
Paper and paper products	3.92	0.30	3.63	2.05	0.20	1.85
Chemicals; rubber and plastic products	-2.14	0.15	-2.294**	-0.76	0.02	-0.78
Nonmetallic minerals	-6.03	-4.71	-1.32	-2.37	-0.82	-1.55
Basic metal industries	-5.00	0.72	-5.72	-1.40	0.23	-1.63
Fabricated metal, machinery and equipment	-0.48	-0.04	-0.43	0.35	0.01	0.34
Fabricated metal products	3.00	0.15	2.85**	1.65	0.13	1.52*
Agricultural and industrial machinery	0.82	0.28	0.54	1.22	0.12	1.10
Office equipment and instruments	-3.48	0.90	-4.38***	-1.09	0.25	-1.34**
Electrical goods	1.55	0.61	0.94	1.80	0.24	1.56
Transport equipment	1.08	-0.09	1.17	0.57	-0.08	0.65
Other manufacturing industries	3.85	0.56	3.29**	1.51	0.02	1.49
Services	0.78	0.09	0.68***			
Construction	0.60	-0.08	0.68			
Wholesale and retail trade	0.58	-0.39	0.98***			
Restaurants and hotels	1.34	-0.10	1.45***			
Transportation	1.01	0.06	0.95***			
Real estate	5.52	-0.30	5.82***			

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. One, two, and three asterisks represent significance at the 10%, 5%, and 1% level, respectively.
2. Numbers reported are coefficients on the GDP gap in a regression of the P-AC margin on the GDP gap and a time trend. Regressions are for the OECD countries and for Hong Kong SAR industries containing more than one component industry.
3. The GDP gap is constructed by applying a Hodrik-Prescott filter (lamba = 1600) to quarterly data and then aggregating the quarterly gap into annual data.

- P-AC margins are more pro-cyclical in services. The shift in the economy to service therefore should have made aggregate P-AC margins more pro-cyclical (Table I.7).

Therefore there is little evidence that increased counter-cyclicality of margins is slowing price adjustment in Hong Kong SAR. If one concludes that price adjustment has slowed, one may have to look elsewhere (e.g., factor markets) for the explanation.

26. Can we infer anything about competition from the cyclicality of margins? A majority of studies (at least as summarized in Rotemburg and Woodford, 1999) suggest that imperfect competition has created counter-cyclical P-MC margins, at least in the United States. If it is also true that more collusion means more counter-cyclical markups, which is what the Rotemburg-Saloner (1986) model predicts at all but very high levels of collusion, then the cyclicality of P-AC margins in Hong Kong SAR imply that services are more competitive and manufacturing is less competitive. To feel comfortable with this conclusion, however, one would have to eliminate all other sources of differences in cyclicality, such as differences in technology or the cyclical behavior of demand elasticity, which is difficult to do given the data available.

F. Implications for the Measurement of TFP Growth

27. As Hall (1990) and Solow (1957) have observed, the traditional Solow-residual measure of TFP using observed factor shares is valid only under perfect competition. Under imperfect competition, the observed labor share will be below the coefficient in the Cobb-Douglas production function. If labor is 100 percent variable, the observed labor share will be:

$$a = WL/PQ = \alpha / MU$$

where a is the observed labor share, α is the production function coefficient, and MU = P/MC. Assuming constant returns to scale, measured two-factor TFP is equal to:

$$ln\ TFP = a \cdot (MU - 1) \cdot (ln\ l - ln\ k) + ln\ A$$

where TFP is the Solow residual and A is true productivity.[28] The source of the difference between measured and true productivity is the difference between the observed and true labor share when there is market power. Underestimating the labor share creates a downward bias in measured TFP growth in economies with rising capital-labor ratios, such as the Asian

[28]The equation is the levels version of equation A1 in Appendix I. This is derived by substituting the observed labor share into the expression for the Solow residual. See Appendix I for details.

NIEs.[29] Table I.9 shows the magnitude of this bias for both OECD countries and the Asian NIEs assuming a average markup in every country of 1.5, one of the lower estimates from this paper.[30] Estimates are shown for both the case where labor is 100 percent variable and where it is 80 percent variable.[31]

28. Assuming labor is 100 percent variable, correcting for the imperfect competition bias raises measured TFP growth by about 0.3 percent a year for the United States, Germany, and France and 1.5 percent to 2.5 percent a year for the Asian NIEs. The adjusted labor shares are clearly too high to be realistic, however. Assuming that labor is 80 percent variable lowers the TFP adjustment to 0.5 percent to 1.0 percent for the NIEs and 0.1 percent to 0.2 percent for the advanced economies and produces at least plausible labor shares. The main conclusion to be drawn from this analysis is that comparisons of TFP growth between rapidly industrializing and advanced economies are sensitive to the factor shares used, the correct measurement of which is in turn sensitive to assumptions about imperfect competition and factor fixity.[32] These issues are not as likely to affect comparisons between rapidly industrializing countries whose capital-labor ratios are changing at roughly the same rate. From 1966–90, Hong Kong SAR achieved growth which was 1.2 percent p.a. slower than in

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[29]There is a rapidly growing literature on biases to TFP measurement, most of which involve factor share mismeasurement. Nelson and Pack (1995), Rodrik (1997), Hsieh (1997), and Young (1998) have discussed the implications of low elasticities of factor substitution for measured factor shares and TFP growth. Barro (1998) points out that if social returns to capital exceed private returns, then observed capital shares could be underestimates of capital's contribution to growth. Sarel (1997) has reestimated TFP growth for Southeast Asian countries assuming the same sectoral factor shares prevail in all countries.

[30]This estimate is based on the average P-MC margin of 0.33 for Hong Kong SAR at its 1986 industry mix from Table I.7. The estimate for the OECD using the OLS version of the modified Roeger methodology was 0.36. Estimates using other methodologies produced much higher P-MC margins; for the DHP and Roeger methodologies, the OLS estimates were 0.855 and 0.817 and the IV estimates were 0.540 and 0.653, respectively.

[31]The estimate of labor as 80 percent variable is drawn fairly arbitrarily from Zitzewitz (1999), in which labor input in U.S. manufacturing industries is found to increase 0.8 percent in response to a 1 percent output increase in the short run.

[32]The importance of factor fixity underscores the need to analyze these issues using a structural model (Morrison, 1990), which would require much more data than was available for this project.

Table I.9. Hong Kong SAR: Bias to Measured TFP Implied by the Estimated Markups

(Average annual growth rates)

	Hong Kong SAR 1966-91	Singapore 1966-90	Korea 1966-90	Taiwan Province of China 1966-90	United States 1965-98	Japan 1965-98	Germany 1965-98	France 1965-98
Output growth	7.3	8.5	10.4	9.6	1.3	2.0	1.3	1.3
Capital input growth	8.0	11.5	13.7	12.3	1.4	3.1	1.6	1.5
Labor input growth	3.2	5.7	6.4	5.1	0.8	0.4	0.3	0.2
Labor share	63%	47%	68%	71%	67%	66%	65%	63%
Adjusted labor share (labor 100% variable)	94%	71%	102%	107%	100%	99%	97%	94%
Adjusted labor share (labor 80% variable)	75%	56%	82%	85%	80%	79%	78%	75%
Bias to TFP growth (labor 100% variable)	-1.5	-1.4	-2.5	-2.6	-0.2	-0.9	-0.4	-0.4
Bias to TFP growth (labor 80% variable)	-0.6	-0.5	-1.0	-1.0	-0.1	-0.3	-0.2	-0.2
Measured TFP	2.3	-0.3	1.6	1.9	0.3	1.7	0.3	0.4
Actual productivity growth (labor 100% variable)	3.8	1.1	4.1	4.5	0.5	2.6	0.7	0.8
Actual productivity growth (labor 80% variable)	2.9	0.2	2.6	2.9	0.3	2.0	0.4	0.5

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. Data for the Asian NICs are from Young (1995), data for the G4 are from the OECD Economic Outlook. Labor and capital inputs are Young's adjusted inputs for the NICs and total employment and business-sector capital stock for the G4.
2. Bias is calculated assuming an economy-wide markup of 1.5 in every country.

Singapore despite capital and labor input growth that were 3.5 percent and 2.5 percent slower, respectively.[33] No matter how you calculate it, Hong Kong SAR had about 2 percent higher TFP growth.

G. Conclusion

29. To summarize, this chapter has four main findings:

- Hong Kong SAR is roughly as competitive as the average OECD economy. Different measures tell slightly different stories. P-AC margins are generally higher in Hong Kong SAR, but P-MC margins are slightly lower. On almost all measures, Hong Kong SAR is neither the most nor the least competitive country in the 15-country sample.

- Hong Kong SAR has become slightly less competitive in the last decade. The shift in industry mix to services has increased economy-wide average P-MC margins and value-added P-AC margins. Within industries, gross output P-AC margins have increased slightly in the last 10 years, as have value added P-AC margins in manufacturing (Figure I.3), while value-added P-AC margins have fallen in service industries.

- Margins are significantly more pro-cyclical in service industries compared to manufacturing. Since services are both the largest sector and have been rapidly increasing in importance in the last decade, overall margins should have also been becoming more pro-cyclical in Hong Kong SAR. Changes in margin cyclicality therefore would not be helpful in explaining any recent slowing of price adjustment.

- Imperfect competition can seriously distort traditional growth accounting exercises, biasing TFP growth measures downward, especially in rapidly growing economies. Correcting the labor shares requires not just estimating market power, but also understanding factor fixity. An alternative approach would be to estimate the production function directly using micro data. Neither of these was feasible given the data available for this project, but with more data, this could be a fruitful area for further study.

[33]These figures are from Young (1995).

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Derivation of P-MC Measurement Methodologies

All three methodologies (DHP 1988, Hall 1988, and Roeger 1995) start with a profit maximizing firm with a constant returns Cobb-Douglas production function facing a constant elasticity demand curve:

$$Q = A \cdot L^{\alpha} \cdot K^{\beta}; \quad \alpha + \beta = 1$$

$$Q = BP^{-\sigma}; \quad PQ = B^{-1/\sigma} \cdot Q^{1-1/\sigma}; \quad 1 < \sigma < \infty$$

where P, Q, L, K and price, quantity, and labor and capital inputs, respectively. There are no fixed or adjustment costs. Firms maximize profits given factor costs W and R.

$$\pi = PQ - WL - RK$$

The first order conditions yield the following relationships:

$$P/MC = P/MR = (1 - 1/\sigma)^{-1} = \mu$$

$$WL/PQ = a = \alpha \cdot (1 - 1/\sigma) = \alpha / \mu$$

where a is the observed labor share. The expression for the change in the Solow residual (dTFP) is:

$$dTFP = dq - a \cdot dl - (1 - a) \cdot dk = (\mu - 1) \cdot a \cdot (dl - dk) + d(\ln A) \qquad (A1)$$

where lower case letters indicate logarithms. This equation comes from using the production function to substitute for dq and then using $\alpha = a \cdot \mu$ to remove α. Adding $a \cdot (dl - dk)$ to both sides yields:

$$dq - dk = \mu \cdot a \cdot (dl - dk) + d(\ln A) \qquad (A2)$$

which can be estimated to yield an estimate of μ, treating the change in productivity (ln A) as an error term. Since the change in the output-capital ratio is likely to be correlated with the change in productivity, the factors that affect industry demand (B) are used as instrumental variables since they should be correlated with $d(l - k)$ but not with productivity. This is the Hall (1988) methodology. It relies on the assumptions of constant returns to scale, the absence of labor fixity or adjustment costs, and the orthogonality of the demand instruments to productivity but not to the labor-capital ratio.[1]

[1]Hall (1988) points out that even when labor is partly fixed or hoarded or when returns to scale are nonconstant, the estimate for μ should still be unbiased under perfect competition. Under imperfect competition, however, μ would be a biased estimator of the markup if these assumptions were violated.

The DHP (1988) method is closely related. The estimating equation is obtained by substituting the expression for a·(dl – dk) implied by (A2) into (A1). This yields:

$$dTFP = (\mu\text{-}1)/\mu \cdot (dq - dk) + (1/\mu) \cdot d(\ln A) = \gamma \cdot (dq - dk) + (1 - \gamma) \cdot d(\ln A) \qquad (A3)$$

where $\gamma = (P - MC)/P = (\mu\text{-}1)/\mu$, i.e. the P-MC margin. Like the Hall specification, this equation can be estimated using an demand instrument which affects the output-capital ratio but not productivity. An advantage of the DHP specification over the Hall specification is that demand instruments are likely to be more strongly correlated with changes in the output-capital ratio than with changes in the labor-capital ratio, giving an IV estimation using the DHP methodology more power.

Roeger (1995) takes a different approach, eliminating the productivity term by taking the difference of the primal (quantity-based) and dual (price-based) Solow residuals:

$$dTFP - dTFP\text{-}D = (dq + dp) - a \cdot (dl + dw) - (1 - a) \cdot (dk + dr) \qquad (A4)$$

$$dTFP\text{-}D = -dp - a \cdot dw - (1 - a) \cdot dr$$

With a constant markup, the change in price will reflect the change in factor prices and the growth in productivity.

$$dp = \alpha \cdot dw + (1 - \alpha) \cdot dr - d(\ln A)$$

Substituting for α yields

$$dTFP\text{-}D = (\mu - 1) \cdot a \cdot (dr - dw) + d(\ln A)$$

which implies that

$$dTFP - dTFP\text{-}D = (\mu - 1) \cdot a \cdot [(dl + dw) - (dk + dr)] \qquad (A5)$$

Equations (A4) and (A5) can be manipulated in the spirit of the DHP methodology to yield

$$(dq + dp) - a \cdot (dl + dw) - (1 - a) \cdot (dk + dr) = (\mu - 1)/\mu \cdot [(dq + dp) - (dk + dr)] \qquad (A6)$$

This yields a direct estimate for the P-MC margin $\gamma = (P - MC)/P = (\mu - 1)/\mu$. Roeger argues that since this equation omits the productivity term, it can be estimated via OLS without using demand instruments. Hausman (1978) tests in Table 4 support this assertion for U.S. data, but not for OECD data, suggesting that at least in the OECD data, one of the assumptions made by Roeger (e.g., no adjustment costs, constant returns to scale) is violated.

Annex Table I.1. Results for Detailed Hong Kong SAR Industries

HKSIC	OECD ISDB Code	Industry name	P-AC margins		Cyclicality			
					Value added		Gross output	
			Value added	Gross output	coeff	s.e.	coeff	s.e.
311	FOD	Food	0.5	0.2	-2.5	2.3	-1.3	1.1
313	FOD	Beverage industries	0.5	0.2	3.5	1.4	2.6	1.0
314	FOD	Tobacco manufactures	0.8	0.3	-0.7	0.9	-2.7	1.4
320	TEX	Wearing apparel except footwear	0.3	0.1	-1.0	1.5	-0.1	0.4
323	TEX	Leather and leather products, except footwear and wearing apparel	0.4	0.1	0.7	1.4	-0.1	0.4
324	TEX	Footwear, except rubber, plastic and wooden footwear	0.2	0.1	-6.9	2.4	-2.0	0.5
325	TEX	Textiles	0.4	0.1	-2.7	1.3	-0.6	0.5
331	WOD	Wood and cork products except furniture	0.4	0.1	1.4	2.2	0.3	0.6
332	WOD	Furniture and fixtures, except primarily of metal	0.3	0.1	-5.0	2.3	-2.2	1.0
341	PAP	Paper and paper products	0.4	0.1	-0.1	1.7	0.2	0.8
342	PAP	Printing, publishing and allied industries	0.4	0.2	2.6	2.9	1.6	1.5
351	CHE	Chemicals and chemical products	0.5	0.1	-1.3	2.9	-0.7	1.7
353	CHE	Products of petroleum and coal	0.7	0.3	2.2	4.2	-1.0	2.7
355	CHE	Rubber products	0.4	0.2	-3.5	2.0	-1.9	0.7
356	CHE	Plastic products	0.4	0.1	-2.4	1.3	-1.1	0.9
36	MNM	Nonmetallic mineral products, except products of petroleum and coal	0.6	0.1	-6.4	2.6	-2.4	0.9
37	BMI	Basic metal industries	0.5	0.1	-2.5	3.4	-0.8	0.8
380	BMA	Fabricated metal products, except machinery and equipment	0.4	0.1	2.7	0.7	1.0	0.7
382	MIO	Office, accounting and computing machinery	0.6	0.1	-3.2	1.6	-1.1	0.6
383	MIO	Radio, television & communication equipment and apparatus	0.5	0.1	-4.7	2.2	-4.3	1.8
384	MEL	Electronic parts and components	0.5	0.2	4.1	2.2	2.9	1.3
385	MEL	Electrical appliances & houseware and electronic toys	0.6	0.2	3.3	3.0	2.3	1.5
386	MAI	Machinery, equipment, apparatus, parts and components, n.e.c.	0.4	0.2	0.5	1.1	0.4	0.6
388	MTR	Transport equipment	0.3	0.2	0.8	1.2	0.4	0.8
389	MIO	Professional & scientific, measuring & controlling equipment, n.e.c., and photogr	0.5	0.1	2.5	1.0	-0.2	0.3
39	MOT	Manufacturing industries, n.e.c.	0.4	0.1	3.9	1.3	1.4	0.4
511	CST	New construction works - Pre-erection works at construction sites	0.2	0.1	5.3	3.1	-1.2	0.8
521	CST	New construction works - Architectural and civil engineering work at construction	0.2	0.1	1.5	1.6	0.2	0.5
529	CST	New construction works - Miscellaneous new construction works	0.2	0.1	1.0	1.2	0.8	0.5
531	CST	Decoration, repair and maintenance	0.2	0.1	1.2	1.3	-0.1	0.3
541	CST	Special trades - Erection and general finishing	0.2	0.1	0.3	1.1	-0.1	0.5
551	CST	Special trades - Electrical and mechanical fitting	0.2	0.1	1.0	1.6	0.8	0.5
561	CST	Special trades - Gas and water fitting	0.2	0.1	1.9	1.4	0.8	0.7
591	CST	Special trades - Miscellaneous	0.2	0.1	1.8	2.4	1.0	1.3
61	RWH	Total Wholesale	0.5	0.0	0.1	0.3	0.0	0.0
6111	RWH	Food, alcoholic drinks and tobacco	0.4	0.0	0.0	0.6	0.0	0.0
6113	RWH	Fuel	0.5	0.0	0.4	0.4	0.1	0.1
6114	RWH	Clothing, footwear and allied products	0.6	0.1	-0.1	0.9	0.0	0.2
6115	RWH	Other durable goods and consumer goods, n.e.c.	0.5	0.0	-0.1	0.7	0.0	0.1
6116	RWH	Machinery, equipment and parts	0.4	0.0	-0.6	2.8	0.1	0.3
6117	RWH	Transport equipment	0.5	0.0	0.9	1.7	-0.2	0.2
6121	RWH	Raw materials and semi-manufactures	0.6	0.0	0.2	0.7	0.2	0.1
6122	RWH	General commodities	0.4	0.1	0.5	1.6	-0.1	0.2
62	RWH	Total retail	0.5	0.1	0.8	0.2	0.2	0.0
6211	RWH	Food, alcoholic drinks and tobacco	0.5	0.1	0.2	0.4	0.0	0.1
6213	RWH	Fuel	0.3	0.0	0.1	0.6	0.0	0.0
6214	RWH	Clothing, footwear and allied products	0.4	0.1	1.4	0.4	0.4	0.1
6215	RWH	Other durable goods and consumer goods, n.e.c.	0.5	0.1	0.7	0.3	0.1	0.1
6216	RWH	Transport equipment	0.6	0.1	0.4	1.9	0.3	0.3
63	RWH	Total Import/Export	0.6	0.1	0.5	0.1	0.0	0.0
6311	RWH	Food, alcoholic drinks and tobacco	0.6	0.0	0.7	0.5	0.0	0.1
6313	RWH	Fuel	0.8	0.1	1.7	0.6	0.9	0.2
6314	RWH	Clothing, footwear and allied products	0.6	0.1	0.0	0.5	0.0	0.1
6315	RWH	Other durable goods and consumer goods, n.e.c.	0.6	0.1	0.6	0.3	0.1	0.1
6316	RWH	Machinery, equipment and parts	0.5	0.1	0.2	0.7	-0.1	0.1
6317	RWH	Transport equipment	0.6	0.0	-2.0	2.0	-0.1	0.3
6321	RWH	Raw materials and semi-manufactures	0.6	0.0	0.5	0.3	0.1	0.1
6322	RWH	General commodities	0.5	0.0	0.2	0.9	-0.1	0.1
6411	HOT	Chinese restaurants	0.2	0.1	1.2	0.5	0.4	0.2
6412	HOT	Restaurants, other than Chinese restaurants	0.2	0.1	1.1	0.3	0.5	0.1
6413	HOT	Fast food shops	0.3	0.1	-0.5	0.5	-0.2	0.2
6414	HOT	Bars	0.2	0.1	1.7	0.7	0.8	0.3
6415	HOT	Eating and drinking places, n.e.c.	0.4	0.1	0.9	0.9	0.4	0.4
65	HOT	Total Hotels/boarding houses	0.5	0.3	0.9	0.8	0.8	0.6
6511	HOT	Hotels	0.5	0.3	0.9	0.8	0.8	0.7
6512	HOT	Boarding houses	0.5	0.3	0.3	0.4	0.2	0.5
711	TAS	Land passenger transport	0.6	0.4	0.6	0.2	-0.2	0.5
712	TAS	Land freight transport	0.5	0.3	0.5	0.3	0.3	0.3
713	TAS	Supporting services to land transport	0.7	0.3	0.0	0.2	-1.1	0.5
714	TAS	Ocean and coastal water transport	0.6	0.2	1.3	0.5	0.6	0.6
715	TAS	Inland water transport	0.5	0.2	-0.1	0.4	0.1	0.4
716	TAS	Supporting services to water transport	0.5	0.2	0.5	0.2	-0.1	0.1
717	TAS	Air transport	0.5	0.2	3.3	0.5	2.5	0.3
718	TAS	Services incidental to transport	0.3	0.0	-0.2	0.5	0.0	0.1
831	RES	Real estate development, leasing, brokerage & maintenance management	0.9	0.8	0.6	0.3	1.4	0.4
8311	RES	Real estate development and /or leasing	1.0	0.9	0.1	0.1	0.7	0.2
8314	RES	Real estate maintenance management	0.2	0.1	1.4	1.7	0.9	0.8
8315	RES	Real estate brokerage and agency	0.3	0.2	-2.2	2.0	-1.7	1.9
832	RES	Business services	...	...	...	...	...	...
8334	RES	Architectural, surveying & project engineering	0.2	0.1	-0.6	0.6	-0.6	0.4
833401	RES	Architectural design	0.2	0.1	1.5	1.6	0.4	1.0
833402	RES	Real estate surveying, valuation and consultancy	0.2	0.2	0.6	1.7	0.7	1.2
833403	RES	Structural engineering	0.3	0.2	3.2	5.7	1.0	3.6
833404	RES	Building services engineering	0.2	0.1	0.2	1.3	-0.3	1.1
833405	RES	Civil and geotechnical engineering	0.2	0.1	-5.4	1.7	-3.3	1.0
833406	RES	Architectural design and structural engineering	0.2	0.1	-2.2	3.7	-1.0	2.4
833407	RES	Combination of preceding services	0.2	0.1	-1.2	0.9	-1.2	0.5

Annex Table I.2. Shift in Industry mix in Hong Kong SAR, 1986-97

(Percent of GDP, current prices)

Industry	1986	1997	Change
Manufacturing	22.6	6.5	-16.1
Food, beverages, and tobacco	1.5	0.6	-0.9
Textiles, apparel and leather	8.3	1.5	-6.8
Wood and wood products	0.2	0.0	-0.2
Paper and paper products	2.2	1.2	-1.0
Chemicals; rubber and plastic products	1.9	0.4	-1.6
Nonmetallic minerals	0.2	0.2	0.0
Basic metal industries	0.2	0.1	-0.1
Fabricated metal, machinery and equipment	7.3	2.2	-5.1
Fabricated metal products	1.4	0.3	-1.1
Agricultural and industrial machinery	1.5	0.5	-1.0
Office equipment and instruments	2.7	0.6	-2.1
Electrical goods	1.1	0.6	-0.5
Transport equipment	0.6	0.3	-0.4
Other manufacturing industries	0.8	0.2	-0.6
Service industries studied	38.8	47.8	+9.0
Construction	4.8	5.8	+1.0
Wholesale and retail trade	18.2	21.9	+3.7
Restaurants and hotels	4.1	4.2	+0.1
Transportation	5.5	5.7	+0.2
Real estate	6.2	10.2	+4.0
Total for all industries studied	61.4	54.3	-7.1

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Note: GDP shares for individual manufacturing industries in 1986 are estimated using 1990 data. The 1986 figure for total manufacturing not estimated.

Annex Table I.3. Hong Kong SAR: Average P-AC Margins by Country

(Percent)

	Value Added		Gross Output	
	Manufacturing	Services	Manufacturing	Services
Hong Kong SAR	43.2	55.1	12.6	8.3
Australia	40.3	58.5	14.0	N.A.
Belgium	30.0	49.0	9.5	N.A.
Canada	32.9	44.0	11.1	N.A.
Denmark	29.0	53.1	10.5	N.A.
Finland	38.9	45.6	13.5	N.A.
France	35.0	42.9	13.3	N.A.
Germany	32.4	36.9	11.6	N.A.
Italy	43.1	64.7	15.3	N.A.
Japan	48.7	41.5	16.1	N.A.
Netherlands	34.7	48.7	11.0	N.A.
Norway	27.5	53.9	7.9	N.A.
Sweden	29.3	41.5	9.1	N.A.
United Kingdom	24.0	46.8	7.7	N.A.
United States	29.8	53.0	10.6	N.A.
Hong Kong SAR's rank	14	13	10	N.A.

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. Services includes construction, wholesale-retail trade, hotels-restaurants, transport, and real estate.
2. Averages shown are weighted by the denominator (value added or output, respectively).
3. A low rank number implies more competition.

Annex Table I.4. Hong Kong SAR: Cyclicality and Trend of P-AC Margins, 1986-97

	Cyclicality		Trend	
	Manufacturing	Services	Manufacturing	Services
Hong Kong SAR	-0.429	0.777	0.225	-0.721
	(0.730)	(0.110)	(0.355)	(0.051)
Australia	0.260	0.053	0.413	-0.268
	(0.173)	(0.117)	(0.116)	(0.080)
Belgium	0.392	0.221	-0.127	0.188
	(0.223)	(0.168)	(0.167)	(0.127)
Canada	0.822	-0.142	-0.379	-0.944
	(0.194)	(0.108)	(0.256)	(0.146)
Denmark	0.498	-0.137	1.402	0.004
	(0.116)	(0.159)	(0.097)	(0.129)
Finland	0.242	0.206	1.049	0.331
	(0.104)	(0.143)	(0.216)	(0.303)
France	1.126	0.250	0.014	0.000
	(0.146)	(0.112)	(0.106)	(0.078)
Germany	0.555	0.726	-0.821	-0.419
	(0.103)	(0.178)	(0.082)	(0.132)
Italy	-0.117	0.039	-0.180	0.225
	(0.171)	(0.259)	(0.102)	(0.155)
Japan	0.869	0.927	-0.998	-0.477
	(0.087)	(0.152)	(0.060)	(0.104)
Netherlands	1.174	0.180	1.046	-0.042
	(0.326)	(0.290)	(0.114)	(0.100)
Norway	-1.171	0.168	0.242	-0.517
	(1.188)	(0.542)	(0.816)	(0.370)
Sweden	-0.644	-0.522	-0.789	-0.472
	(0.234)	(0.215)	(0.283)	(0.267)
United Kingdom	0.708	1.018	0.766	0.489
	(0.121)	(0.171)	(0.152)	(0.222)
United States	0.768	-0.127	0.432	-0.204
	(0.164)	(0.135)	(0.084)	(0.070)
Hong Kong SAR's rank	13	3	9	2

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. A low rank number implies more pro-cyclicality or increasing competition.

Annex Table I.5. Hong Kong SAR: Average P-MC Margins for Manufacturing and Services

(Estimated using the OLS version of the feasible Roeger method)

	Manufacturing	Services
Hong Kong SAR	0.303	0.397
	(0.012)	(0.007)
Australia	0.341	0.352
	(0.069)	(0.024)
Belgium	0.402	0.389
	(0.017)	(0.026)
Canada	0.368	0.430
	(0.021)	(0.021)
Denmark	0.346	0.448
	(0.009)	(0.020)
France	0.396	0.384
	(0.022)	(0.023)
Germany	0.387	0.324
	(0.012)	(0.023)
Italy	0.425	0.392
	(0.020)	(0.027)
Netherlands	0.400	0.377
	(0.015)	(0.017)
Norway	0.407	0.391
	(0.014)	(0.019)
Sweden	0.405	0.426
	(0.022)	(0.019)
United Kingdom	0.366	0.276
	(0.018)	(0.040)
United States	0.378	0.456
	(0.011)	(0.014)
Hong Kong SAR' rank (out of 13)	1	9

Sources: Hong Kong Census and Statistical Department; and staff estimates.

Notes:

1. A low rank number implies more competition.

II. A Note on the Impact of China's Accession to the WTO on Hong Kong SAR[1]

A. The Agreement

1. On November 15, 1999, the United States and China reached a bilateral agreement on the terms of China's entry into the World Trade Organization (WTO). Provided bilateral agreements with remaining WTO members, including the European Union, can be reached quickly, China could become a member of the WTO in the second half of 2000. So far, only limited details of the agreement have been published, including in respect of the tariff reductions proposed; and the final terms of accession will also depend on the outcome of the remaining bilateral negotiations. However, the staff understands the key elements to be the following (Box II.1):

- China will **reduce tariffs** on nonagricultural products (which account for 95 percent of total imports) to 9.4 percent by 2005, and lower tariffs on agricultural products to 17 percent by January 2004;[2] eliminate quotas and nontariff restrictions on industrial products (by 2005); introduce a tariff rate quota system in agriculture; and provide full trading and distribution rights to foreign firms.

- China will significantly **expand market access** in the services sector, including through eliminating geographic and other restrictions in most key sectors (by 2005); through increasing foreign ownership limits in telecommunications (50 percent by 2002), life insurance (50 percent on accession), and securities (49 percent by 2002); and through giving full national treatment to foreign banks (by 2005).[3]

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[1]Peter Breuer (ext. 36364) is available to answer technical or factual questions on this paper.

[2]There is some uncertainty with regard to the tariff reductions implied by WTO accession, since the base rate of applied tariffs is not known with certainty and it is unclear whether the agreed tariff reductions refer to simple or weighted averages. For the purposes of this note, the following World Bank estimates of weighted average tariffs in 1998 are used: 20 percent for agricultural products and 18½ percent for manufactures (corresponding simple averages are estimated to be 18 percent and 17½ percent).

[3]See Box II.2 for the financial sector components of the agreement.

Box II.1. The Main Elements of the China-U.S. Agreement

CHINA WILL:

1. Agriculture

- **Reduce average tariffs for agricultural products from 20 percent to 17 percent** by January 2004.
- **Establish a tariff rate quota system for bulk commodities, with** quota quantities increasing over time, and subject to tariffs between 1-3 percent. Eliminate export subsidies on cotton and rice.
- **Give U.S. exporters the right to sell and distribute imported goods directly** to Mainland consumers, without going through state trading enterprises or other specified middlemen.

2. Industrial goods

- **Reduce average tariffs from 18½ percent in 1998 to 9.4 percent by 2005, phased in on a straight line basis,** with particularly large cuts for automobiles, high tech products, wood, and paper.
- **Eliminate quotas and nontariff restrictions within 5 years** (and most in 2002–03). In the interim, base-level quotas will grow at 15 percent annually.
- **Give full trading and distribution rights for imported goods to foreign companies.**

3. Services

- **Telecommunications:** Join the Basic Telecommunications Agreement, and phase out all geographic restrictions on services in 2–6 years. Permit 49 percent foreign ownership in all telecommunications services on accession, rising to 50 percent in some sectors in 2 years.
- **Insurance:** Phase out geographic and service restrictions over 3-5 years. Permit 50 percent foreign ownership in life insurance and 51 percent ownership in nonlife insurance on accession (the latter rising to 100 percent in 2 years). Reinsurance is completely open on accession.
- **Banking:** Allow foreign banks to conduct local currency business with Chinese enterprises after two years, and retail business after 5 years. Nonbank companies can offer auto financing on accession.
- **Securities Business**: Allow foreign firms to hold minority stakes in securities funds, with shares rising from 33 percent initially to 49 percent after three years.
- **Distribution:** Foreign companies with existing domestic investments will be able to undertake wholesale business with a Chinese partner on accession. Foreign invested retail business will be permitted in a limited set of major cities on accession; all quantitative and geographic restrictions will be removed by January 2003.
- **Other services:** Allow foreign firms with foreign majority control to provide a broad range of professional services, including accountancy, taxation, and management consultancy. Foreign movie companies will be allowed to form joint ventures for distribution of video and sound recordings. China will allow 100 percent foreign-owned hotels in three years.

THE UNITED STATES WILL:

- **Eliminate import quotas on China's textile and clothing exports by end–2005,** subject to anti-surge provisions through 2008.
- **Maintain its current anti-dumping methodology (treating China as a nonmarket economy) for 15 years after accession.**
- **Seek permanent Normal Trading Relations (NTR) status for China from Congress.**

Box II.2. Financial Sector Components of China-U.S. Bilateral WTO Agreement

Banking Sector

Currently foreign banks are not permitted to do local-currency business with Chinese clients (a few can engage in local currency business with their foreign clients), and China imposes severe geographic restrictions on the establishment of foreign banks. China has committed to full market access in five years for foreign banks:

- Foreign banks will be able to conduct local-currency business with Chinese enterprises starting 2 years after accession;
- Foreign banks will be able to conduct local-currency business with Chinese individuals from 5 years after accession;
- Foreign banks will have the same rights (national treatment) as Chinese banks within designated geographic areas; and
- Both geographic and customer restrictions will be removed in five years.

Nonbank Financial Institutions

China has made commitments for nonbank foreign financial institutions to be able to provide auto financing upon China's accession. This in combination with commitments regarding importation, distribution, sale, financing, and maintenance and repair of automobiles will help open up this key sector for U.S. industry.

Securities Business

China will permit minority foreign-owned joint ventures to engage in fund management on the same terms as Chinese firms. As the scope of business expands for Chinese firms, foreign joint venture securities companies will enjoy the same expansion in scope of business. Minority joint ventures will be allowed to underwrite domestic securities issues and underwrite and trade in foreign-currency-denominated securities (debt and equity).

Insurance Business

Currently, China restricts foreign companies to operate in Shanghai and Guangzhou. Under the agreement:

- *Geographic Limitations*. China will permit foreign property and casualty firms to insure large-scale risks nationwide immediately upon accession, and will eliminate all geographic limitations in 3 years;
- *Scope*. China will expand the scope of activities for foreign insurers to include group, health and pension lines of insurance, which represent about 85 percent of total premiums, phased in over 5 years;
- *Prudential Criteria*. China agrees to award licenses solely on the basis of prudential criteria, with no economic needs test or quantitative limits on the number of licenses issued; and
- *Investment*. China agrees to allow 50 percent ownership for life insurance. Life insurers may now choose their own joint venture partners. For nonlife, China will allow branching or 51 percent ownership on accession and form wholly owned subsidiaries in 2 years. Reinsurance is completely open upon accession (100 percent, no restrictions).

- The United States will **eliminate import quotas** under the Multi-Fiber Agreement (MFA) on China's textile imports by 2005, subject to anti-surge provisions through 2008, and give China permanent Normal Trade Relations (NTR) status. It will continue to apply nonmarket economy methodology for anti-dumping cases for 15 years.

2. **In assessing the impact of the agreement on China,** two particular characteristics of its trade and investment regime are of importance:

- First, the trade regime for processing goods—which covers goods produced entirely for export, and accounts for about 60 percent of total trade flows—is very liberal: imports of inputs and intermediate goods for this sector are duty free, and most enterprises can engage directly in foreign trade. The remaining 40 percent of trade (so-called "ordinary" trade) is subject to a much more restrictive regime, including tariff and nontariff barriers, including restrictions on trading and distribution rights.

- Second, foreign direct investment in the export-oriented manufacturing sector has been substantially liberalized (reflected in the rapid growth of processing trade), but significant constraints remain on investment in the services sector (foreign direct investment in services was less than one-third of the total in 1998). In particular, foreign investment in telecommunications is essentially forbidden; activities of foreign insurance companies and banks are severely restricted; and distribution and trading rights are very limited.

3. **From a sectoral perspective, the staff expects the WTO to have the following main effects**:

- **Accession will primarily affect "ordinary" imports coming in under the regular trade regime**, especially of agricultural goods, automobiles, and certain capital-intensive industries (including telecommunications and petrochemicals). There will be a modest boost to ordinary exports (depending on the extent that they use ordinary imports as inputs).

- **There will be little impact on processing trade in the short run**. However, processing exports (and therefore imports) are likely to increase sharply from 2005 and beyond, following the elimination of the MFA.

- **The liberalization in the services sector is likely to lead to a substantial increase in inward foreign direct investment**, particularly in telecommunications, insurance securities, banking and the retail and distribution sectors.

- **There will be a further acceleration of structural reform in the bank and enterprise sectors** in response to greater foreign competition. This would result in

higher imports of services to support restructuring (especially financial, accounting and legal).

4. **From an overall macroeconomic perspective, China is likely to experience an initial deterioration in its external current account position, with an improvement thereafter as the effects of MFA elimination are felt.** This would be offset by higher foreign direct investment in the services sector; overall, the balance of payments position would be expected to remain in surplus. While there might be a modest negative impact on GDP growth in the short run, GDP growth would be expected to be higher over the medium term as restructuring led to higher productivity growth (and latterly an increasing boost from the textile sector as the MFA is abolished).

5. **The remainder of this note** discusses the potential impact of China's accession to WTO on Hong Kong SAR, on the assumption that the present agreement approximates the final terms of accession. Section B sets out background information on the structure of Hong Kong SAR's production, and balance of payments, including the linkages with respect to the Mainland; and Section C considers the impact on Hong Kong SAR.

B. Background

6. **The Hong Kong SAR economy is dominated by the services sector**, which accounts for 85 percent of GDP (Table II.1). Of this, about one quarter of GDP is due to the financial sector; another quarter comes from trade and tourism (most of which is with the Mainland); 20 percent from community and personal services; and 9 percent from transport, storage and communication. Industry accounts for 15 percent of GDP, of which 6 percent of GDP comes from manufacturing; within this about 1½ percent is due to apparel and textiles, and 1 percent comes from printing and publishing. The agricultural sector is very small.

7. **Hong Kong SAR is a highly open economy**, with exports and imports of goods and nonfactor services totaling over 250 percent of GDP (Table II.2), and very large inward and outward capital flows. For our purposes, the following points are worth noting:

- **Entrepôt trade accounts for about two-thirds of total trade flows and almost all of it either comes from, or goes to, the Mainland** (Table II.3). Nearly 90 percent of the reexports *from* the Mainland, and a little over 40 percent of the reexports *to* the Mainland, are directly related to the Mainland's processing trade. Hong Kong SAR's value-added on reexports *to* the Mainland—around 6 percent—is much smaller than on reexports *from* the Mainland—around 27 percent.[4]

[4]Based on staff estimates for U.S.-Mainland trade through Hong Kong SAR, using data from K.C. Fung and Lawrence J. Lau "New Estimates of the United States-China Bilateral Trade Balance," Institute for International Studies, Stanford University, April 1999.

Table II.1. Hong Kong SAR: GDP and Employment by Economic Activity, 1998

Economic Activity	HK$ 1/ (In billions)	Percent of GDP	Employment (in '000)	Employment (in percent)
Agriculture and fishing	1.2	0.1	[a]	[a]
Industry	179.7	15.2	...	...
Mining and quarrying	*0.0*	*0.0*	*[a]*	*[a]*
Manufacturing	*73.3*	*6.2*	*391.9*	*12.2*
Electricity, gas and water	*33.1*	*2.8*	*[a]*	*[a]*
Construction	*72.1*	*6.1*	*319.5*	*10.0*
Services	1001.5	84.7	2461.5	75.5
Restaurants and hotels, trades 2/	*283.8*	*24.0*	*973.9*	*30.4*
Transport, storage and communications	*110.0*	*9.3*	*363.3*	*10.0*
Financing, insurance, real estate 3/	*302.7*	*25.6*	*419.0*	*13.1*
Community, social and personal services	*235.3*	*19.9*	*[b]*	*[b]*
Ownership of premises	*171.4*	*14.5*	*[b]*	*[b]*
Other services			*705.3*	*22.0*
Adjustment 4/	*-100.5*	*-8.5*		
Other employment 5/			28.2	1.0
Total production-based GDP (at current factor cost)	1,182.4	100.0	3201.0	100.0

Sources: Census and Statistics Department, *web site;* and Leung Chuen Chau, "*Labour and Labour Market*" (1961-81).

[a] Included in "other employment."

[b] Included in "other services."

1/ GDP based on production method (at current factor cost).

2/ Includes wholesale, retail and import/export trades.

3/ Includes other business services.

4/ Adjustment for financial intermediation services indirectly measured.

5/ Not elsewhere specified.

Table II.2. Hong Kong SAR: External Balances, 1998

	US$ (bn.)	Share of GDP
Net domestic exports 1/	-37.2	-22.7
Domestic exports	24.3	14.8
Retained imports	61.5	37.6
Net reexports 2/	26.9	16.4
Reexports	149.7	91.4
Nonretained imports	122.8	75.0
Balance of nonfactor services	11.7	7.1
Export of services	34.5	21.1
Import of Services	22.8	13.9
Balance of goods and nonfactor services	1.4	0.9
GDP	163.7	100

Source: Census and Statistics Department, Hong Kong SAR.
1/ Domestic exports less retained imports.
2/ Reexports less nonretained imports.

Table II.3. Hong Kong SAR: Trade Account, 1998

	US$ (bn.)	Percent of Total	Share of GDP
Merchandise Exports	174.0	100.0	106.3
Domestic Exports	24.3	14.0	14.8
To the Mainland	*7.2*	*4.2*	*4.4*
Processing related	*5.6*	*3.2*	*3.4*
Other	*1.7*	*1.0*	*1.0*
To other destinations	*17.1*	*9.8*	*10.4*
Reexports	149.7	86.0	91.4
To the Mainland 1/	*52.6*	*30.2*	*32.1*
Processing related	*23.1*	*13.3*	*14.1*
From the Mainland 1/	*89.2*	*51.3*	*54.5*
Processing related	*78.1*	*44.9*	*47.7*
Other	7.9	4.5	4.8
Merchandise Imports	184.3	100.0	112.6
Retained imports	61.5	33.4	37.6
From the Mainland 2/	*5.4*	*2.9*	*3.3*
Processing related	*1.2*	*0.7*	*0.7*
Other 2/	*4.2*	*2.3*	*2.6*
From other destinations	*56.1*	*30.4*	*34.3*
Nonretained imports	122.8	66.6	75.0
From the Mainland 2/	*70.2*	*38.1*	*42.9*
Processing related	*61.5*	*33.4*	*37.6*
Other 2/	*8.6*	*4.7*	*5.3*
From other destinations	*52.7*	*28.6*	*32.2*
GDP	163.7		100

Source: Census and Statistics Department, Hong Kong SAR.

1/ Includes reexports from the Mainland to the Mainland routed through Hong Kong SAR ($6.5 billion).

2/ Staff estimate.

- **Domestic exports** account for only about 15 percent of GDP, half of which comes from the textile sector (Figure II.1). About one-third of domestic exports go to the Mainland, of which three quarters are related to the processing trade. Retained imports account for nearly 40 percent of GDP, of which less than 10 percent comes from the Mainland, mostly products of ordinary trade.[5]

- **Exports of services, at over 20 percent of GDP, are significantly larger than domestic exports**. While not much detailed information is available about the nature of trade in invisibles, service exports are concentrated in tourism and trade-related services, such as financial services and transportation, and to some extent in professional services. Service imports mostly relate to travel by Hong Kong SAR residents abroad. As in most economies, no data on the direction of services trade is available.

- **There are substantial financial flows between Hong Kong SAR and the Mainland**. Hong Kong SAR is the largest source of foreign direct investment in the Mainland, accounting for 40 percent of the total.[6] Hong Kong SAR banks' gross exposure to the Mainland has been growing steadily, peaking at 30 percent of GDP prior to the Asian crisis. The Mainland has also been a major investor in Hong Kong SAR, with cumulative flows accounting for 19 percent of the total stock of inward direct investments by 1997.

- **The linkages between Hong Kong SAR and the Mainland have increased significantly in recent years**. The growing integration of the two economies has been reflected in a generally high correlation between their economic cycles, as well as equity and exchange markets, all of which typically range above 0.6.[7]

8. **Hong Kong SAR's trade regime is extremely liberal**. There are no tariffs and no trade restrictions, except those under the WTO, related to specific bilateral trade agreements, and related to health and security concerns (alcoholic beverages, tobacco, and hydrocarbon

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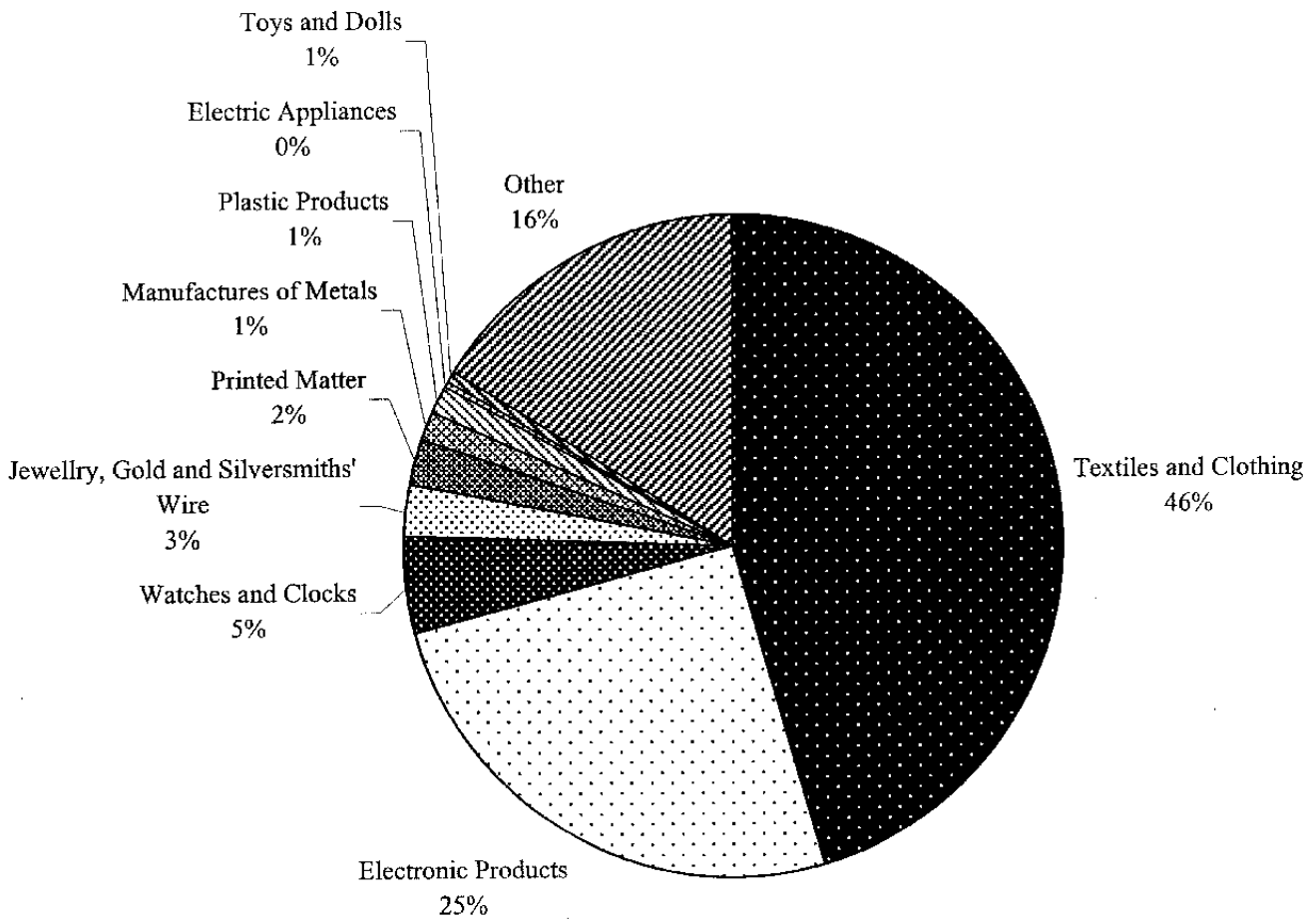
[5]Based on staff estimates deriving retained Mainland imports from the value of reexports originating in the Mainland, assuming a margin of 27 percent on those reexports.

[6]This may, however, overstate the true position since (a) Hong Kong SAR is a conduit for foreign direct investment from other countries, and (b) a portion of the flows may be due to "round-tripping" (foreign direct investment inflows financed by illegal outflows from the Mainland, done to take advantage of tax incentives).

[7]However, the correlation of economic growth has decreased since 1995, possibly in part reflecting the omission of Hong Kong SAR factor income from investments in the Mainland.

Figure II.1. Hong Kong SAR: Domestic Exports by Commodity, 1998



Source: HKMA.

oils). The territory became a separate contracting party to the General Agreement on Tariffs and Trade (GATT) in 1986, and is a founding member of the WTO established in 1995. Since the transfer of sovereignty in 1997, Hong Kong SAR continues to participate in WTO as a separate customs territory with autonomy in the conduct of its external commercial relations.

C. The Impact on Hong Kong SAR

9. **Since China is unlikely to join the WTO until the second half of 2000, there will be little direct impact on Hong Kong SAR until 2001**. Thereafter, the effects can be considered under four broad headings: (i) the direct impact of trade and services liberalization on Hong Kong SAR (ii) the second round impact of changes in the Mainland (iii) the impact of the elimination of the MFA from 2005, and (iv) the long run implications for Hong Kong SAR's relationship with the Mainland. The following sections focus on each of these in turn.

10. **While direct quantitative estimates are very difficult to make, some purely illustrative scenarios showing the impact of tariff reductions and the elimination of the MFA are set out in Tables II.4 and II.5, to illustrate the potential orders of magnitude and the channels through which Hong Kong SAR could be affected.** It should be stressed that the calculations are partial equilibrium in nature, and illustrate the long run impact of the changes (in the short term of course, the impact would be considerably smaller).

Trade and Services Liberalization

11. **The reduction in Mainland tariffs will benefit Hong Kong SAR's domestic exports through 2005. However, the impact will be modest** since domestic exports to the Mainland are mostly related to the processing industry which will not be affected by accession in the short run (Table II.4); in addition, Hong Kong SAR does not produce the products which have been most liberalized. **There will also be a small increase in retained imports** due to the lower costs of the Mainland's nonprocessing exports,[8] and the import content of the increase in Hong Kong SAR's domestic exports.

12. **The liberalization of the services sector in the Mainland is likely to lead to a significant rise in Hong Kong SAR's outward foreign direct investment**. This would likely be concentrated in the financial, telecommunications, distribution and freight forwarding sectors, where Hong Kong SAR firms would be particularly well placed to compete. This may be partly offset initially by a reduction in foreign direct investment in the

[8]The cost of the Mainland's nonprocessing exports will be reduced to the extent that they use imported inputs whose prices have been reduced as a result of the tariff reductions.

Table II.4. Hong Kong SAR: Impact of WTO Tariff Reductions—An Illustrative Example Using 1998 Data 1/

	US$ (bn.)	Impact		
		US$ (bn.)	Percent	Percent of GDP
Domestic exports	24.3	0.2	0.7	0.1
To the Mainland	7.2	0.2	2.4	0.1
Processing related	5.6	0.0	0.0	0.0
Other	1.7	0.2	10.0	0.1
To other destinations	17.1	0.0	0.0	0.0
Reexports	149.7	3.2	2.1	1.9
To the Mainland	52.6	2.9	5.6	1.8
Processing related	23.1	0.0	0.0	0.0
Other	29.5	2.9	10.0	1.8
From the Mainland	89.2	0.2	0.2	0.1
Processing related	78.1	0.0	0.0	0.0
Other	11.1	0.2	2.0	0.1
Other	7.9	0.0	0.0	0.0
Retained imports	61.5	0.2	0.3	0.1
From the Mainland 1/	5.4	0.1	1.6	0.1
Processing related	1.2	0.0	0.0	0.0
Other	4.2	0.1	2.0	0.1
Other	56.1	0.1	0.2	0.1
Nonretained imports	122.8	3.0	2.4	1.8
To the Mainland	49.4	2.8	5.6	1.7
Processing related	21.7	0.0	0.0	0.0
Other	27.7	2.8	10.0	1.7
From the Mainland	70.2	0.2	0.3	0.1
Processing related	61.6	0.0	0.0	0.0
Other	8.7	0.2	2.0	0.1
Other	3.2	0.0	0.0	0.0
Trade balance	-10.3	0.2	...	0.1
Domestic	-37.2	0.0	...	0.0
Entrepot	26.9	0.2	...	0.1

Sources: Census and Statistics Department; and staff estimates.

1/ This calculation assumes that Mainland nonprocessing imports increase by 9.7 percent (based on a 7.7 percent cost reduction of imports due to a 9 percent reduction in tariffs, and a price elasticity of demand of -1.3 percent); Mainland nonprocessing exports increase by 2.3 percent (based on the same tariff and elasticity assumptions and assuming a nonprocessing import content of exports of 20 percent); that Hong Kong SAR domestic exports have an import content of 50 percent; and that Hong Kong SAR's value addes is 6 percent on reexports to the Mainland and 27 percent on reexports from the Mainland.

Table II.5. Hong Kong SAR: The Impact of an Increase in Mainland Apparel and Textile

	US$ (bn.)	Impact		
		US$ (bn.)	Percent	Percent of GDP
Domestic Exports	24.3	0.9	3.7	0.5
To the Mainland	7.2	0.9	12.4	0.5
Processing related	5.6	0.9	16.0	0.5
Other	1.7	0.0	0.0	0.0
Other	17.1	0.0	0.0	0.0
Reexports	149.7	16.2	10.8	9.9
To the Mainland 1/	52.6	3.7	7.0	2.3
Processing related	23.1	3.7	16.0	2.3
Other	29.5	0.0	0.0	0.0
From the Mainland 1/	89.2	12.5	14.0	7.6
Processing related	78.1	12.5	16.0	7.6
Other	11.1	0.0	0.0	0.0
Other	7.9	0.0	0.0	0.0
Retained imports	61.5	0.4	0.7	0.3
Nonretained imports	122.8	13.3	10.9	8.1
To the Mainland 1/	49.4	3.5	7.1	2.1
Processing related	21.7	3.5	16.1	2.1
Other	27.7	0.0	0.0	0.0
From the Mainland 1/	70.2	9.8	14.0	6.0
Processing related	61.6	9.8	16.0	6.0
Other	8.6	0.0	0.0	0.0
Other	3.2	0.0	0.0	0.0
Trade balance	-10.3	3.3	2.9	2.0
Domestic	-37.2	0.4	3.0	0.3
Entrepot	26.9	2.9	0.0	1.8

Sources: Census and Statistics Department; and staff estimates.

1/ This calculation assumes that the elimination of the MFA results in a 20 percent increase in the Mainland's processed textile and a 100 percent increase in the Mainland's processed apparel exports, implying a 16 percent increase in Mainland processing exports. For simplicity, we assume that the Mainland's ordinary exports of textile and apparel products do not change.

manufacturing sector (to the extent that this has been prompted by high Mainland tariffs in the past).

The Second Round Impact of the Effects of the Mainland

13. **The impact of WTO entry on the Mainland's imports and exports will have a direct effect on the volume of entrepôt trade through Hong Kong SAR.** Reexports *to* the Mainland will grow as foreign exporters of nonprocessing goods benefit from lower tariffs (Table II.4). This could lead to a significant increase in reexport value; however, because Hong Kong SAR's margins on reexports *to* the Mainland are modest, the net impact on the trade account would be much smaller. Reexports *from* the Mainland will also increase—again because Mainland nonprocessing exports are cheaper—but the impact is again likely to be small, especially given the small share of nonprocessing reexports coming from the Mainland.

14. **As noted in paragraph 3, China's accession to the WTO is likely to be accompanied by an acceleration of the pace of bank and enterprise restructuring,** resulting in increased demand for financial, accounting, and legal services. Hong Kong SAR and Hong Kong SAR-based corporations would appear to be in a strong position to supply such services, which will directly boost services output and exports in Hong Kong SAR. It may also lead to addition inward foreign direct investment by foreign firms using Hong Kong SAR as a base to expand their Mainland operations, indirectly boosting the domestic financial and property sectors. While the size of such effects is obviously very difficult to judge, it could potentially be substantial.

The Impact of the Elimination of the MFA

15. **The elimination of the MFA will have important effects on Hong Kong SAR,** from at least two perspectives. On the one hand, Hong Kong SAR's textile and apparel sector—which accounts for 1½ percent of GDP, employs 78,000 people and generates nearly one-half of domestic exports—will face greater competitive pressures. On the other, since the Mainland's textile and apparel exports will increase substantially, Hong Kong SAR will benefit in its role as an entrepôt center (and, less importantly, as a supplier of inputs for the processing sector itself).[9]

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[9]It should be noted, however, that Hong Kong SAR's entrepôt sector is shrinking in relative terms, due to increasing competition from Mainland ports. Thus, the benefits of MFA elimination are likely to decline over time.

16. **Against this background, the staff would see the following broad effects**:

- **First, there are likely to be substantial incentives for Hong Kong SAR's textile industry to move to the Mainland in the run up to MFA elimination**. This could result in a substantial drop in domestic exports and employment, offset by higher investment income from the Mainland.

- **Second, the jump in the Mainland's exports of textiles and apparel will provide a substantial boost to the entrepôt trade sector**. Reexports *from* the Mainland—on which Hong Kong SAR's margins are relatively high—would increase substantially (Table II.5). There would also be increases, of smaller size, in Hong Kong SAR domestic exports and reexports to the Mainland which are used in the processing industry.

Longer-Run Implications for Hong Kong SAR's Relationships with the Mainland

17. **Over the longer term, the WTO agreement will lead to greater integration between Hong Kong SAR and the Mainland**. There will be a further shift of lower value added services and manufacturing production from Hong Kong SAR to the Mainland; while this will increase efficiency, it will also require a corresponding redeployment of labor. More generally, accession will gradually reduce Hong Kong SAR's role as the main window to the Mainland, both for trade and finance. This will increase competition between Hong Kong SAR and other trade and financial centers, both within and outside the Mainland. However, given Hong Kong SAR's special advantages—including its location and its knowledge of the Mainland market—it should be in a strong position to compete.

The Macroeconomic Impact

18. **At the present stage, it is very difficult to make quantitative predictions of the impact of WTO accession, either for the Mainland or Hong Kong SAR, and any assessment is subject to wide margins of error**. However, based on the above, and in light of the illustrative calculations set out in Tables II.4 and II.5, the staff draws the following tentative conclusions:

- **Between 2000 and 2004, Hong Kong SAR's external current account would improve**, due to a modest improvement in the trade account, and—more importantly—increased services exports. This would be offset by higher outflows of foreign direct investment, in services and latterly manufacturing. Unless the WTO accession led to a marked slowdown in the Mainland economy—which appears unlikely—the effect on GDP growth should be positive.

- **China's accession to WTO will accelerate the ongoing restructuring of the Hong Kong SAR economy, in both the services and textiles sectors, which may require substantial redeployment of labor in coming years**. While Hong Kong SAR has

traditionally adjusted to such changes very rapidly, developments will need to be closely monitored, and retraining provided as necessary.

- **From 2005 onward, Hong Kong SAR will benefit from higher Mainland growth, a sharp pickup in entrepôt trade, and rising investment income receipts on WTO-related investments in the Mainland.** Against this, there will be—as noted above—downward pressure on domestic exports of goods and services and output as lower value added production moves to the Mainland. Provided that this adjustment is completed as rapidly as in the past, however, the overall effect on growth and the balance of payments would be significantly positive

- **Integration of the Hong Kong SAR and Mainland economies will be accelerated.** While this brings obvious efficiency benefits, it could also increase Hong Kong SAR's vulnerability to economic shocks on the Mainland.

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III. The Hong Kong SAR Labor Market: Key Characteristics, Recent Developments and Prospects[1]

A. Overall Labor-Market Performance

Some Stylized Facts

1. Hong Kong SAR's labor-market performance over the last two decades has been characterized by rapid growth of both employment and labor productivity, a low unemployment rate, and a substantial shift in the sectoral composition of employment due to the extensive structural transformation of the economy:

- employment grew by over 30 percent since 1980, while unemployment averaged around 2½ percent;
- labor productivity doubled (between 1980 and 1997); and
- employment in the services sector rose from 47 percent to 79 percent of total employment since 1980, while manufacturing employment fell from over 41 percent to under 12 percent (Figure III.1 and Table III.1).[2]

This combination of persistent low unemployment rates (till 1998) in the face of a rapidly growing labor force and large shifts in the sectoral composition of employment suggests great flexibility in Hong Kong SAR's labor market and its ability to facilitate efficient resource allocation. And the combination of rapid growth in both employment and real wages implies a rapid growth in total factor productivity, without which such a combination would not be sustainable. In international comparison, Hong Kong SAR dominated the OECD countries with respect to employment and productivity growth, but fell somewhat short of the performance of other Newly Industrialized Economies (NIEs) in Asia (Figure III.2).[3]

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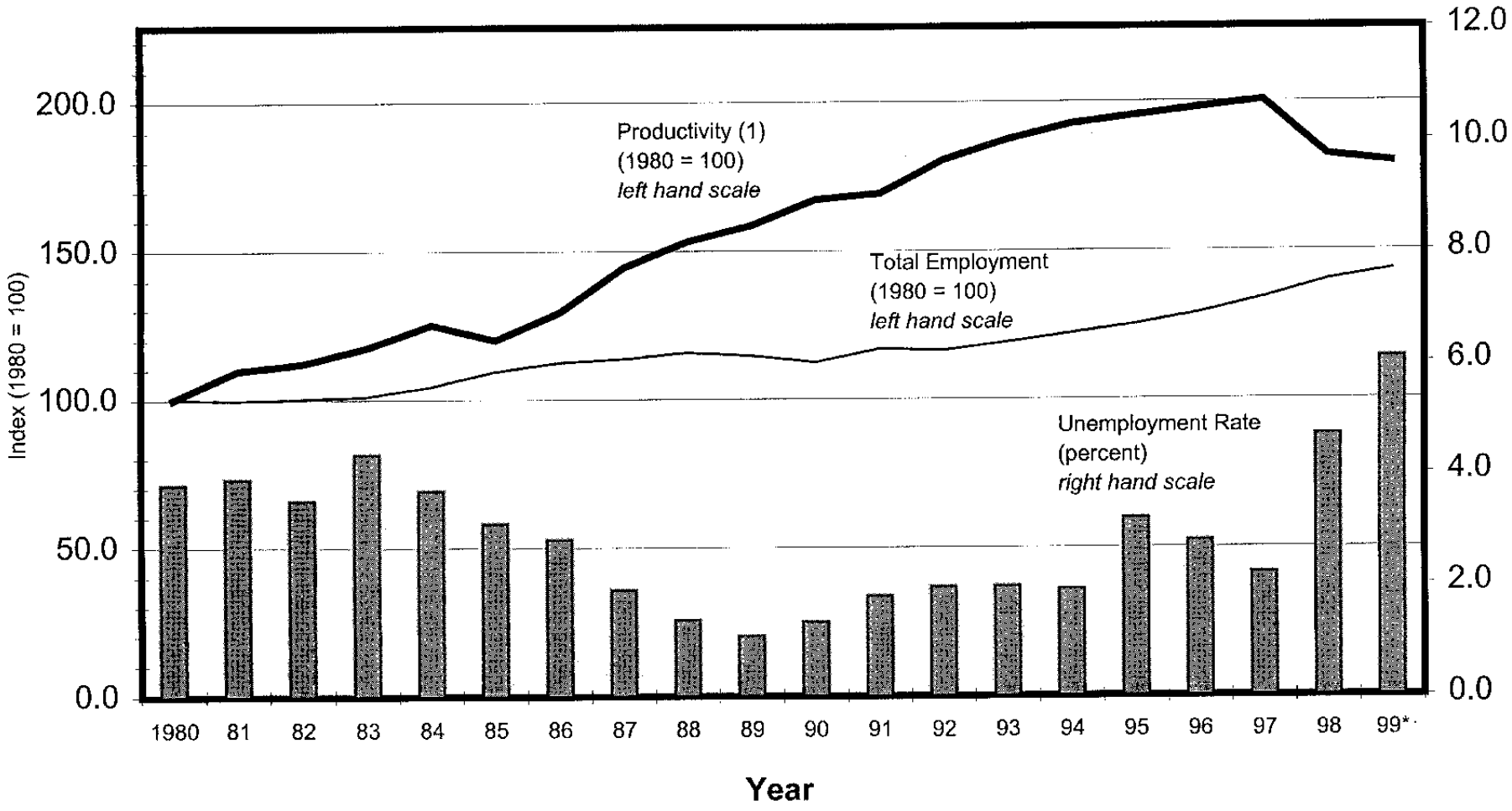
[1]Peter Sturm (ext. 34474) is available to answer technical or factual questions on this paper.

[2]Already between 1952 and 1970 the Hong Kong economy had demonstrated an impressive capacity to adapt its economic structure to changing circumstances: after losing its role as the Mainland's major harbor, the territory embarked on rapid industrialization, succeeding in both reallocating labor from shrinking to growing sectors and absorbing a substantial increase in the labor force, swelled by the influx of refugees from the Mainland.

[3]It has been suggested by some studies that the rapid growth in labor productivity in the high-growth East Asian countries was achieved at the cost of inefficient use of capital, but that the implied overinvestment was less prevalent in Hong Kong SAR than in, for example, Singapore. See Alwyn Young, "The Tyranny of Numbers: Confronting the Realities of the East Asian Growth Experience," *Quarterly Journal of Economics* (August 1995), pp. 641-80.

Figure III.1. Hong Kong SAR: Aggregate Labor Market Performance, 1980-99



Source: World Economic Outlook Database.

(1) real GDP per employed person.
* Staff projection.

Table III.1. Hong Kong SAR: Sectoral Employment--Level, Structure and Growth

	1961	1971	1981	1991	1997	1998	1999Q2
			(Employment, in 1,000)				
Industrial sector							
Agriculture, fishing	87.6	60.6	47.0	[a]	[a]	[a]	[a]
Mining, quarrying	8.9	4.4	1.6	[a]	[a]	[a]	[a]
Manufacturing	512.4	728.5	990.4	717.0	443.9	391.9	370.2
Electricity, gas, water	12.6	8.8	14.7	[a]	[a]	[a]	[a]
Construction	58.2	82.6	186.0	224.9	306.2	319.5	305.8
Trade, 1/ restaurant, hotels	171.2	251.3	461.5	732.1	952.2	973.9	955.8
Transport, communications, storage	86.7	114.1	181.4	273.6	346.4	363.3	360.9
Finance, insurance, real estate 2/	19.2	41.0	115.9	229.1	399.5	419.0	464.1
Other Services	217.6	232.6	375.7	536.1	666.5	705.3	779.2
Other employment 3/	16.6	22.8	30.0	40.9	30.0	28.2	27.1
Total	1191.1	1546.9	2404.1	2753.7	3144.7	3201.0	3263.1
			(Employment share of total, in percent)				
Industrial sector							
Agriculture, fishing	7.3	3.9	2.0	[a]	[a]	[a]	[a]
Mining, quarrying	0.7	0.3	0.1	[a]	[a]	[a]	[a]
Manufacturing	43.0	47.0	41.2	26.0	14.1	12.2	11.3
Electricity, gas, water	1.1	0.6	0.6	[a]	[a]	[a]	[a]
Construction	4.9	5.4	7.7	8.2	9.7	10.0	9.4
Trade, 1/ restaurant, hotels	14.4	16.2	19.2	26.6	30.3	30.4	29.3
Transport, communications, storage	7.3	7.4	7.5	9.9	11.0	11.4	11.1
Finance, insurance, real estate 2/	1.6	2.7	4.8	8.3	12.7	13.1	14.2
Other Services	18.3	15.0	15.6	19.5	21.2	22.0	23.9
Other employment 3/	1.4	1.5	1.3	1.5	1.0	0.9	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
			(Employment, 1981=100)				
Industrial sector							
Agriculture, fishing	186.3	128.9	100.0	[a]	[a]	[a]	[a]
Mining, quarrying	570.0	281.6	100.0	[a]	[a]	[a]	[a]
Manufacturing	51.7	73.6	100.0	72.4	44.8	39.6	37.4
Electricity, gas, water	86.0	60.2	100.0	[a]	[a]	[a]	[a]
Construction	31.3	44.5	100.0	120.9	164.6	171.8	164.4
Trade, 1/ restaurant, hotels	37.1	54.4	100.0	158.6	206.3	211.0	207.1
Transport, communications, storage	47.8	62.9	100.0	150.9	191.0	200.3	199.0
Finance, insurance, real estate 2/	16.5	35.4	100.0	197.7	344.8	361.6	400.5
Other Services	57.9	61.9	100.0	142.7	177.4	187.7	207.4
Other employment 3/	55.3	76.0	100.0	136.0	99.8	93.9	90.3
Total	49.5	64.3	100.0	114.5	130.8	133.1	135.7

Sources: Leung Chuen Chau, "Labour and labour market" (1961 to 1981); Census and Statistics Department, Hong Kong Annual Digest of Statistics 1998 (post 1990 data).

[a] Included in "other employment."

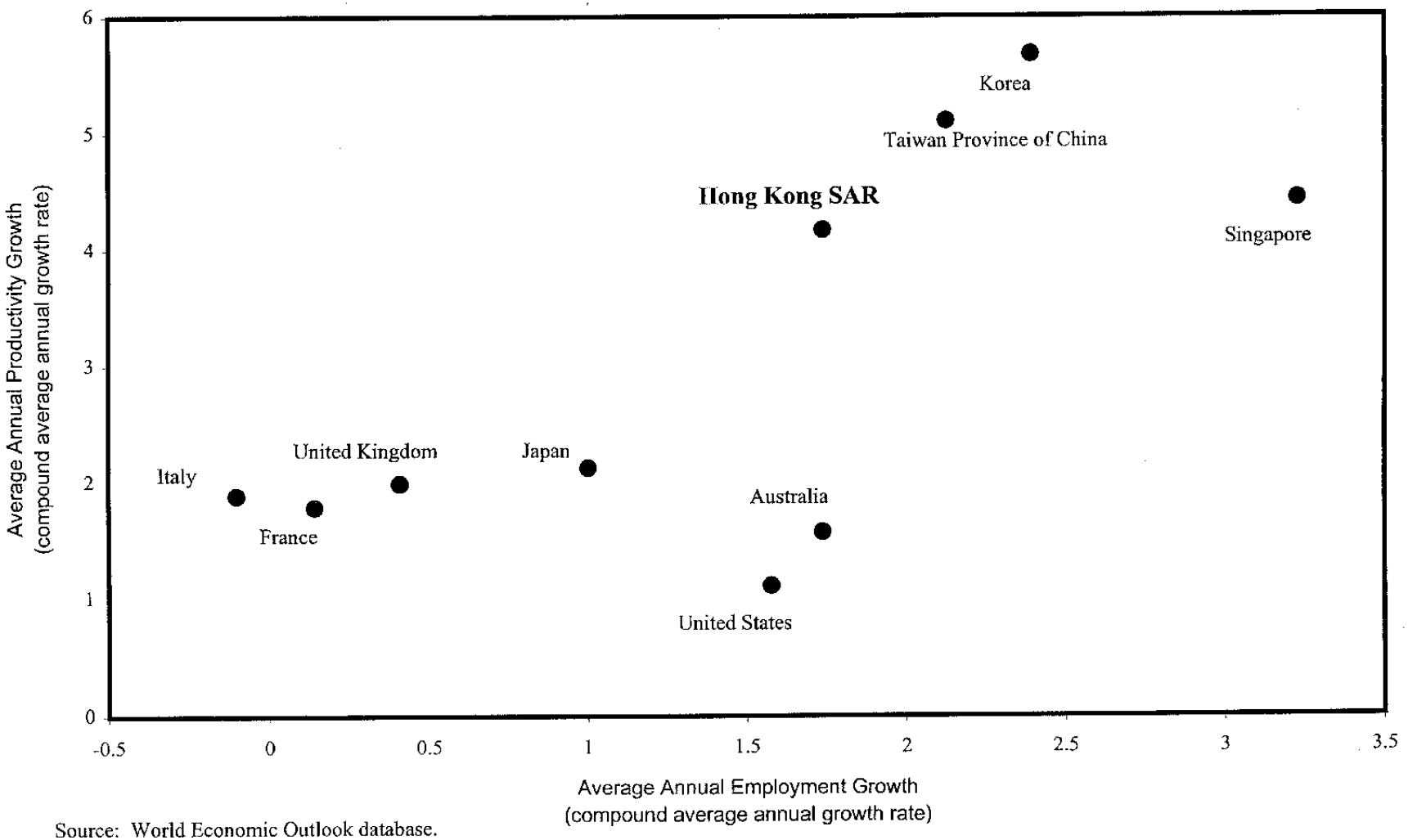
1/ Wholesale and retail.

2/ Including other business services.

3/ Not elsewhere specified including agriculture, fishing, mining, quarrying, electricity, gas, water, and other employment.

Figure III.2. Growth of Employment and Labor Productivity, 1980-97

(Percent)



Source: World Economic Outlook database.

2. With Hong Kong SAR's linked exchange rate system tying down the nominal exchange rate, the rapid growth in labor productivity induced a rise in the rate of inflation to achieve the needed real exchange rate appreciation.[4] This process of "structural inflation" is the consequence of a relatively low-price and high-income elasticity of demand for the output of the sectors with low-productivity growth, compared with the sectors in which productivity is rising rapidly.[5] As a result, relative unit labor costs (and thus relative prices) will tend to rise in the low productivity sectors, resulting in higher consumer prices.[6] As productivity levels in Hong Kong SAR approach those of other industrialized countries, the "catch-up" component of the economy's productivity growth will decline. As a result, productivity growth rates in Hong Kong SAR should become more similar to that in the United States, leading to a convergence of inflation rates among these countries under the linked exchange rate system.

Institutional Features of the Labor Market

3. A conventional explanation for Hong Kong SAR's impressive labor-market performance is the "laissez faire" character of labor relations and labor-market institutions in general. As described in a recent World Bank publication:

"*The industrial labor market in Hong Kong SAR is the closest embodiment of a neo-classical competitive market found anywhere. Constraints to market forces, like labor laws,*

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[4]The correct indicator of labor-market performance in relation to inflation is the level of the equilibrium (or "natural") rate of unemployment, which is the level of unemployment required to prevent a rise of real wages in excess of productivity growth. Given this rate, the actual (steady state) rate of inflation will be determined by the monetary regime.

[5]It is commonly known in the literature as the Balassa-Samuelson effect. Typically, a substantial part of output in the sector with low-productivity growth is nontradable output, so that its rising price level will not affect international competitiveness in tradable output.

[6]Japan, which also—until recently—had faster productivity growth than the United States, chose to let its currency appreciate following the collapse of the Bretton Woods system in the early 1970s, and thus was able to keep its domestic inflation below the rates experienced in the United States. This contrasts with experience in the 1960s, when CPI inflation was substantially higher in Japan than in the United States on account of rapid price increases in the non-tradable sector, while the country maintained—and actually improved—its international competitiveness for tradable output.

government intervention, unionism, monopsonistic employers, and inertia, are conspicuous by their absence."[7]

4. However, a characterization of Hong Kong SAR's labor market as being entirely unfettered by government intervention would be exaggerated. Hong Kong SAR authorities have recognized for some time that various labor-market imperfections require government intervention and regulation to improve resource allocation, and this has led to a significant body of labor-market legislation, which has been steadily amended and expanded since at least 1968, when the first major piece of pertinent legislation was introduced.[8] However, despite the expansion of labor-market related legislation, when compared with other industrialized countries, especially in Europe, regulations and related manifestations of the welfare state in Hong Kong SAR are significantly more limited. Hong Kong SAR's labor-market legislation, as embodied in a number of pertinent "ordinances," focuses on job safety, employment standards and employment protection, and compensation in case of occupational injuries (Table III.2). In contrast to most industrialized countries, there is no public unemployment insurance scheme and no minimum-wage legislation for the domestic labor force.[9] Support for the unemployed, provided through the Comprehensive Social Security Assistance scheme (CSSA), is rigorously means tested,[10] while labor-market-related public expenditure is concentrated on retraining and job placement assistance. This reflects the authorities' objective to provide assistance to the truly needy without impairing the flexibility of the labor market, which is central to adjustment under the link.

5. In comparison to OECD countries, labor-market institutions in Hong Kong SAR allow for greater flexibility. In Table III.3, a large number of pertinent institutional aspects of labor markets are aggregated into eight indicators. The first four of these summarize the treatment of unemployed workers and the tax burden on labor. The most obvious contrast with the OECD countries is the absence of a formal and obligatory public unemployment insurance scheme. Another contrast with OECD countries is the much smaller tax wedge:

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[7]Leung Chuen Chau, *Hong Kong SAR—A Unique Case of Development* (Washington: World Bank, 1999), pp. 13–14.

[8]The first piece of specific labor-market legislation introduced was the Employment Ordinance of 1968, prior to which date labor contracts were based on general private contract law and (sometimes) implicit contracts and historical customs. The body of labor-market legislation as well as social services were expanded significantly during the period 1971–82 under Governor MacLehose.

[9]Administrative measures do exist for setting minimum allowable wages for foreign workers and foreign domestic helpers.

[10]Partly as a result, only a small fraction of the unemployed receive benefits under the CSSA.

Table III.2. Hong Kong SAR: Key Labor Market Legislation

Legislation	Contents/Coverage	Comments
Employment Ordinance	Provides for various employment benefits and protection such as wage protection in case of firm closure, rest days, holidays with pay, paid annual leave, sickness allowance, maternity protection, severance payment, long service payment, protection against anti-union discrimination and termination of employment contract. In June 1997, the Employment Ordinance was amended to the effect that employees may claim for remedies against their employers for unreasonable dismissal, unreasonable variation of the terms of employment contract, or unreasonable and unlawful dismissal.	
Occupational Retirement Schemes ordinance	Regulates voluntary occupations retirement schemes; (16,324 schemes registered by end–1997).	Compulsory private and funded retirement schemes were introduced in 1995.
Occupational Safety and Health ordinance	Regulates workplace safety and health in practically all sectors of economic activities.	Enacted in 1997 to extend, for the first time, the protection to employees in the nonindustrial sectors.
Labour Relations Ordinance	Provides procedures for the settlement of trade disputes between employers and employees. The set of procedures includes conciliation, special conciliation, mediation, arbitration and board of inquiry.	
Employees' Compensation ordinance	Provides for the payment of compensation to employees injured at work or to dependents of employees who die as a result of a work accident.	
The Trade Unions Ordinance	Regulates the registration and administration of trade unions.	
Protection of Wages of Insolvency ordinance	Provides for the establishment of the Protection of Wages on Insolvency Fund, to which employees who are owed wages, wages in lieu of notice and severance payments by their insolvent employers may apply for ex-gratia payments (financed from a levy on business registration fees).	
Mandatory Provident Fund Schemes Ordinance	The Mandatory Provident Fund system is a privately managed retirement plan covering the workforce set to commence operations in December 2000.	

Source: Hong Kong SAR authorities.

Table III.3. Hong Kong SAR Labour Market Institutions--An International Comparison

(Status: Post-1990 Average)

Institutional Characteristics 1/		Country								
		Hong Kong SAR 2/	United States	Australia	Japan	EU Average 3/	Germany	France	Italy	United Kingdom
Replacement rate (percent)		0	50	37.5	60	59.5	63	57	11	37
Benefit duration (months)		0	6	48	6	33.6	48	40.5	6	48
Active labor market policy 4/	[a]	0.75	2.6	3	6.6	14.1	16.2	9.2	9.5	8.8
Employment protection 5/	[b]	2	1	4	8	13.5	15	14	20	7
Tax wedge 6/		15	43	30	35	52.4	53	63	60	43
Union coverage 7/		1	1	3	2	3	3	3	3	2.5
Union density (percent 8/)		21	17.3	42.6	26.9	45.3	33.6	11.8	41.5	42
Coordination 9/		3	2	3	4	4.2	5	4	3.5	2

Sources: Author's estimates for Hong Kong SAR (preliminary); data for all other countries are from: Olivier Blanchard and Justin Wolfers: The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence; accessible at: http://web.mit.edu/blanchar/www/.

1/ Note that rising "active labor market policies" and "coordination" tend to reduce unemployment; all other characteristics tend to increase it.

2/ Author's evaluation, based on detailed communications from Hong Kong authorities and following methodology detailed in Blanchard and Wolfers; see text for a detailed discussion.

3/ Excluding Luxembourg and Greece.

4/ Public expenditure on active labor market measures per unemployed, in percent of output per employed person.

5/ The indicator for employment protection is the country's rank order in ranking 20 OECD countries from least to most severe employment protection; for Hong Kong SAR, which is not part of the original ordering, employment protection was judged to be similar to that in New Zealand (rank 2 among OECD countries.); see main text for more detail.

6/ Average tax share in compensation of employees, including income tax, social security contributions and indirect taxes on general consumption.

7/ Index ranging from 1 to 3according to share of wages determined by union bargaining: 1=<25 percent; 2=25-70 percent; 3=>70 percent.

8/ Share of union members in dependent employment.

9/ Degree of coordination of wage negotiations at national level, ranging from 2 (little coordination) to 6 (intensive coordination at national level).

10/ Estimated increase in structural unemployment resulting from a standardized shock.

[a] 1994-98 average for output and unemployment; 1993/94-1997/98 average for government expenditures.

[b] See footnote 5 above.

about half the labor force is not subject to income tax, and the remainder pays a maximum flat income tax rate of 15 percent of taxable income. Indirect taxes—most of which are stamp duties and lottery taxes—amount to less than 5 percent of household consumption (or 3 percent of GDP). Employment protection is limited in scope (such as statutory severance payment and unlawful dismissal, etc.),[11] in contrast to a variety of additional administrative barriers to dismissal in many European OECD countries. On the other hand, like most OECD countries, Hong Kong SAR tries to facilitate the reemployment of displaced workers by providing free placement services and retraining facilities ("active labor-market policies," ALMP), although budgetary resources allocated to this purpose are relatively modest compared with such expenditures in the OECD area (see below).

6. The role of labor unions in Hong Kong SAR is limited: less than 22 percent of employees are union members, and since there is no legal obligation for employers to engage in collective bargaining, the coverage of union wage contracts is significantly below this number. Only a few companies engage in collective bargaining with the unions, while the majority of work contracts are concluded on an individual bilateral basis between the employer and the employee.[12] While there are four main unions, there is little if any coordination between them in the wage-formation process. On the other hand, the major employers' organization (The Hong Kong General Chamber of Commerce) does issue nonbinding guidelines to its members for wage negotiations. The Labour Advisory Board (LAB), a tripartite commission with representatives of employers, unions and the government, has the mandate to advise the government on labor-market-related issues, but does not get involved in wage negotiations.

7. An additional element of labor-market conventions in Hong Kong SAR is the extensive use of performance-related pay systems and bonus payments in addition to contractual wages and salaries. The former are, in practice, easier to adjust downward during

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[11]Employment protection covers statutory requirement for prior notice or wages in lieu of notice for the termination of employment contract, statutory severance payment, and statutory long-service payment. There are also statutory protection against dismissal on ground of pregnancy, paid sick leave, injury at work, participation in trade union activities, or giving evidence or information in connection with the enforcement of labor legislation. Further employment protection was introduced in June 1997 to provide employees with statutory remedies against unreasonable dismissal, unreasonable variation of the terms of employment contract, and unreasonable and unlawful dismissal.

[12]In the printing industry and some crafts in the construction industry, employers' associations have concluded collective agreement on wage levels with trade unions. Apart from that, majority of work contracts are concluded individually between the employer and employee.

periods of cyclical weakness than the latter. On the supply side of the labor market, imported labor has played an important role in relieving temporary supply bottlenecks at various skill levels (see below), thereby helping to remove obstacles to economic growth.

Labor-Market Flexibility

8. Labor-market flexibility is a major determinant of overall economic efficiency. At the aggregate level, there are two relevant aspects of the concept of labor-market flexibility: the rate of unemployment required to deter an acceleration in nominal wages irrespective of productivity trends, and the wage response to disequilibrium in the labor markets.

- The first determines the output cost of labor-market rigidities in equilibrium and is conventionally measured by the structural (equilibrium) unemployment rate (SUR).

- The second determines the speed of market-driven adjustment in response to economic shocks, which is critical to the smooth functioning of the linked exchange rate system—the centerpiece of the rules-based approach to policymaking adopted in Hong Kong SAR. One measure of the speed of adjustment to shocks is the impact that a deviation of unemployment from its structural level has on the change in the rate of inflation (through its effect on the growth of wages).[13]

9. An additional aspect of labor-market flexibility is the degree of unemployment hysteresis—the tendency of cyclical unemployment to turn into structural unemployment.[14] Studies on labor-market performance in OECD countries has shown that—like the level of structural unemployment—unemployment hysteresis is closely linked to institutional features that interact to render the labor market inflexible.[15] The degree of labor-market hysteresis can be measured by the response of nominal wage growth to the rate of change in the unemployment rate (rather than its level). Cross-country comparison along these three measures over the last two decades is consistent with the conventional wisdom that Hong Kong SAR's labor market is relatively more flexible (Table III.4).

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[13]A related measure, the "sacrifice ratio", measures the amount and duration of unemployment in excess of the natural rate required to reduce inflation by one percentage point.

[14]Put differently, it is the tendency of increases in unemployment due to temporary shocks to end up raising the level of structural unemployment, instead of reversing to its previous lower equilibrium level.

[15]See for example Stefano Scarpetta, "Assessing the Role of Labour Market Policies and Institutional Settings on Unemployment: A Cross-Country Study", OECD Economic Studies No 26, 1996/1, pp. 43–72.

Table III.4. Hong Kong SAR: Indicators of Labor Market Flexibility

Country	1998 Structural Rate of Unemployment, SUR 1/	Sensitivity of the Rate of Inflation to Employment 2/	Change in the Structural Rate of Unemployment 3/
Hong Kong SAR	2.3	0.41	-0.6
Selected OECD countries			
United States	5.7	0.19	-1.9
Japan	3.0	0.32	1.5
Germany	7.2	0.03	3.1
France	9.3	0.05	1.6
Italy	10.4	0.07	0.4
United Kingdom	7.8	0.08	-0.2

1/ For Hong Kong SAR, the equilibrium (structural rate of unemployment is proxied by the average rate of unemployment over the last decade. For all other countries, the estimates given are from the World Economic Outlook databank.

2/ Change in the rate of inflation for a one percentage point decrease in the unemployment rate, keeping expected inflation constant (i.e., the slope of the short-run Phillips curve).

3/ For Hong Kong SAR, the estimated change in the equilibrium rate of unemployment is the difference between the average unemployment rates in the 1980 and the 1990s; for the other countries, it is the change in the estimates for the equilibrium rate between 1980 and 1998.

Migration Policies

10. An important aspect of Hong Kong SAR's labor market is migration and the recruitment of foreign labor. Unlike the limited regulation of the operation of the domestic labor market, the government has sought to control the flow of immigrant labor and regulate its pay. Employers wishing to take in foreign workers have to demonstrate they have unsuccessfully tried to recruit employees from the local labor market. This is designed to safeguard employment opportunities of local workers, while at the same time relieve acute labor shortages of local businesses. In addition, wages offered to foreign workers must be no less than those offered to a local worker in a comparable position.[16]

11. As living standards (and real wages) in Hong Kong SAR increased rapidly, Hong Kong SAR has become increasingly attractive for mobile labor in the region. A major component of imported labor consists of domestic helpers, providing labor input for a largely isolated segment of the domestic labor market, which has difficulties finding domestic supply at the going wage. To protect domestic employees from exploitation, a minimum allowable wage is imposed on this market segment. There are no significant government obstacles for companies wanting to hire highly qualified professional staff from abroad (permits are granted routinely if the request is supported by local employers), and in the past the employment of highly skilled foreign experts has been an important facilitating aspect in the rapid rise of Hong Kong SAR's financial service industry.

12. While the number of foreign workers entering Hong Kong SAR has fallen off significantly from its peak in 1992, the net migration of Hong Kong SAR citizens has turned positive in 1993 and increased rapidly thereafter (Table III.5). Similarly, the number of "new arrivals" (Mainland citizens being authorized by their government to settle permanently in Hong Kong SAR) has tended to increase since the early 1990s.[17] All three of these categories have contributed to the continuing rapid rise in Hong Kong SAR's labor force, which receives little impetus from natural domestic population growth.[18]

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[16]This policy tries to strike a balance between the interests of organized labor, which is strongly opposed to the import of foreign workers, and the business community, which favors few or no restrictions.

[17]This category consists predominantly of relatives of Hong Kong SAR citizens being reunited with their families.

[18]At close to unity, Hong Kong SAR's fertility rate—the average number of children born to a woman during her lifetime—is among the lowest in the world and well below the replacement rate of 2.1 (the fertility rate which entails a stable level of population in the long run).

Table III.5. Hong Kong SAR: Selected Components of Migration, 1988-98

(In 1,000 persons)

Year	Net migration of Hong Kong SAR Citizens 1/	New Arrivals	Inflow of Foreign Workers
1988	-44.9	27.9	8.4
1989	-44.1	26.5	14.1
1990	-48.1	27.4	12.9
1991	-38.9	26.4	25.3
1992	-24.1	28.1	26.6
1993	1.1	32.8	23.4
1994	20.4	38.1	17.1
1995	50.1	45.7	9.5
1996	63.9	61.2	3.1
1997	127.0	50.0	0.5
1998	39.9	55.9	7.6

Source: Larry Chuen-ho Chow and Yiu-kwan Fan (editors), The Other Hong Kong Report 1998, (Hong Kong: The Chinese University Press, 1999), pp. 205/6.

1/ Holders of permanent Hong Kong SAR identity cards/travel documents.

B. Labor-Market Adjustment in the Recent Crisis

Employment

13. As the effects of the Asian crisis spread to Hong Kong SAR's real sector from early 1998 onward, the rate of unemployment began to rise steadily. The employment rate rose to 5¾ percent by end–1998 from 2½ percent at end–1997, and then increased further in 1999 before stabilizing at 6 percent. Surprisingly, however, total employment has continued to rise steadily; between 1997: Q2 and 1999: Q2 employment rose by 4¾ percent. However, the labor force increased even faster—by 9¼ percent over the same period—reflecting a positive net migration balance and a slight increase in the participation rate.[19]

14. The aggregate statistics, however, masks significant differences in employment growth across different segments of the economy. While the larger enterprises tended to downsize and reduce their employment significantly, many of the dismissed workers found employment in informal sectors, in the Mainland, or became self-employed. This is revealed in the different pictures of the labor market painted by the two main surveys in Hong Kong SAR.

15. The Quarterly Employment Survey of Employment and Vacancies (SEV) reports a decline in employment by 8 percent over the two years to end–1998, while the General Household Survey (GHS) showed an increase by 5½ percent over this period (Figure III.3).[20] The SEV is an establishment survey—employment figures in this survey are collected from registered private Hong Kong SAR businesses, while the GHS covers all forms of employment. Comparisons between the surveys can be difficult, in part because the sectoral definitions in each are not the same. However, it appears that layoffs in the private enterprises covered by the SEV have been offset by rising employment in the public sector; higher self-employment;[21] and an increase in Hong Kong SAR residents working in the

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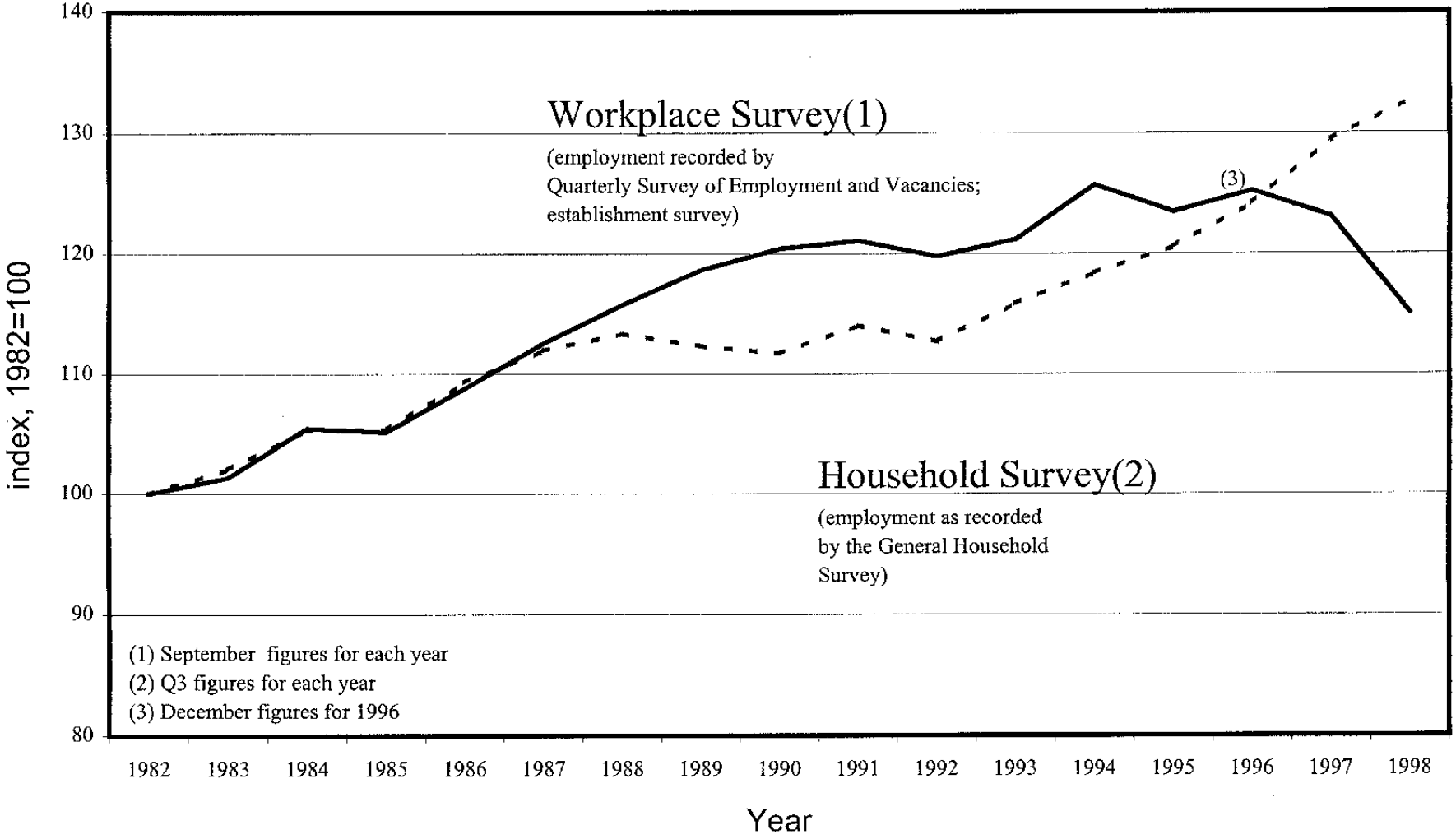
[19]The phenomenon of rising participation in a recession is known as the "added-worker effect"; as traditional breadwinners in the family lose their job (reflected in the rising unemployment rate) or have to accept a lower paying job, other family members join the labor force to offset the income loss. The added-worker effect tends to be stronger in countries with weak or no unemployment insurance.

[20]In comparison, over the 14 year period from 1981: Q4 to 1995: Q4, the two series, which differed on average by 24 percent in level form, increased at similar overall rates of 22 and 21.8 percent respectively. The growth rates of these two series started to diverge significantly from 1996 onward, and by 1998: Q4 the level difference had increased to 51 percent.

[21]The number of self employed persons and unpaid family workers was 192,200 in1999: Q2 (6 percent of total employment), 17¾ percent higher than in 1998.

Figure III.3. Hong Kong SAR: Alternative Employment Surveys, 1982-98



Mainland[22] (all included in the GHS). This is also broadly consistent with anecdotal evidence.

16. A comparison of the age and gender composition of unemployment shows that the burden of unemployment falls disproportionally on young people, whose unemployment rate in 1998 had risen to above 20 percent—more than four times higher than that of overall unemployment (Table III.6); it reached 29⅓ percent in June–August 1999. High youth unemployment is, however, largely a structural characteristic of the Hong Kong SAR (and most) other economies.[23] In contrast, the difference of unemployment rates between gender groups is much smaller, and it, too, has varied little during the cycle.

Worker Compensation

17. Earnings per employee—which is only available for enterprises covered by the Labour Earnings Survey (LES)—kept rising well into the recession. Only in 1999: Q2 did year-on-year growth turn negative at -1¼ percent—a rate still well above the rate of deflation in consumer prices, implying an increase in real wages. Compared with 1997: Q3 (the quarter in which output peaked), compensation per employee was 1¼ percent higher in 1999: Q2. Unfortunately, there is no data on labor productivity for the enterprises covered by the LES sector, so that it is not possible to calculate developments in unit labor costs.[24]

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[22]According to a periodic special inquiry in the context of the GHS, the number of Hong Kong SAR citizens working in the Mainland during the period May–June 1998 was 133,500 (some 4 percent of the 1998 labor force), 37¼ percent higher than during the period September–October 1995. And again, according to the GHS—the employees in public administration was 150,600 in 1999: Q2, an increase of 26¾ percent over 1997: Q2; employment increases—albeit at a less rapid pace—were also recorded over this period in the health and education sectors.

[23]Among other industrialized countries, only in Germany and Austria have youth unemployment rates been persistently at levels similar to those of the overall rate. This outcome can be traced to a strong apprenticeship system prevailing in these countries. See OECD, *Jobs Study* (Paris: 1994). More recently, similar results have been achieved in Denmark by an active labor-market policy targeted on youth unemployment; see OECD, *Economic Survey of Denmark* (Paris: 1998).

[24]For the economy as a whole, there has been a large (cyclical) slump in aggregate productivity totaling some 9 percent of GDP between 1997: Q3 and 1999: Q2. However, productivity performance in the SEV sector—which has been characterized by labor shedding of (mainly) unskilled workers—is likely to have been better. Equally, earnings growth in the economy as a whole is likely to have been much lower than in the SEV sector.

Table III.6. Hong Kong SAR: Gender and Age Specific Labor Market Slack

(Percent of labor force)

Item Age group (From ... to ... years of age)	Unemployment Rate 1/ 1988-97 Average	 1998	Underemployment Rate 1/ 2/ 1988-97 Average	 1998
15-19	8.3	20.5	1.0	2.9
20-29	2.6	5.7	0.8	1.6
30-39	1.3	3.3	1.4	2.1
40-49	1.4	4.1	1.8	3.4
50-59	1.8	5.1	2.1	3.8
>60	0.9	2.3	1.8	3.0
Gender				
Male	2.1	5.1	1.7	3.3
Female	1.8	4.0	0.9	1.4
Overall	2.0	4.7	1.4	2.5

Source: Census and Statistics Department.

1/ As percent of the group-specific labor force.
2/ Persons working less than 35 hours per week but would like to work more hours.

18. This rise in real compensation per employee may be somewhat exaggerated by the statistics;[25] in addition, survey data also suggest that experience varies widely across firms. The 1999: Q1 LES, for example, suggests that 40 percent of companies reduced payroll per capita on a year-on-year basis; 15 percent kept it constant; and the remainder increased it. Nevertheless, this suggests that—at least in some sectors—there may be some downward rigidity in nominal compensation.

19. In Hong Kong SAR's labor market, the choice between adjustment to economic shocks through either labor shedding or wage adjustment is, of course, entirely a private sector decision. The existence of downward nominal wage rigidity is consistent with "efficiency wage" theory,[26] which predicts that for a variety of reasons (costly monitoring, labor morale, etc.) employers will prefer to dismiss workers rather than to lower nominal wages if the latter entail an offsetting decline in labor production among remaining employees. An implication of this is that while the competitive wage rate will vary with cyclical conditions, the efficiency wage rate can be acyclical or even countercyclical, and that employers will keep costs down in a recession largely by shedding labor. As a result, cyclical variations in employment dominate that in wages.

C. The Government's Role in the Adjustment Process

20. The official policy view is that allowing markets to operate freely is the best way to facilitate adjustment to structural shocks as well as to cyclical fluctuations, and that government activity in this area should focus on strengthening market-based adjustment, rather than to oppose or retard it. In conformity with this view, the government decided to increase its expenditures on job counseling and placement services for the unemployed, and to provide pertinent training for workers who had lost their job to help them find employment in those sectors of the economy where vacancies indicated persistent employment opportunities.

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[25]The fact that layoffs have centered on low-wage workers would lead to a statistical increase in the average payroll per worker; cf. Census and Statistics Department, Press Release on payroll statistics for the first quarter 1999, June 29, 1999, p. 1 (accessible at http://www.info.gov.hk). The staff's rough calculations suggest this could bias nominal payroll growth upward by over 2 percent. This phenomenon is well documented in the context of the apparent acyclicality of wages in the U.S. labor market. See Finn Kydland and Edward C. Prescott, "Cyclical Movements of the Labor Input and its Real Wage," Discussion Paper No. 17, Institute for Empirical Macroeconomics, Federal Reserve Bank of Minneapolis, 1988, for an early discussion of this issue.

[26]See Carl Shapiro and Joseph Stiglitz," Equilibrium Unemployment as a Worker Discipline Device," American Economic Review, Vol. 74 (June 1984), pp. 433–444.

21. A special Youth Pre-employment Training Program targeted to improve the employability of school leavers and thus reduce the high youth unemployment rate was introduced in September 1999. Table III.7 shows that public expenditure on the various components of ALMP, as well as the number of beneficiaries, have increased significantly since 1993. However, as a percentage of output per employed person, Hong Kong SAR's expenditure on ALMP per unemployed person remains well below the levels observed in OECD countries. Additional support to stabilize the labor market was provided by the increase in public sector employment in 1998, contrasting with a declining trend in the first half of the 1990s, and from the advancement of some infrastructure projects, leading to renewed growth of infrastructure investment following the decline underway since 1995/96 (as the new airport neared completion—Table III.8).

22. As mentioned, the social welfare net in Hong Kong SAR is restricted to rigorously means-tested welfare payments for needy persons. As a consequence, only about 13 percent of all unemployed persons received income support under the CSSA in the third quarter of 1999.[27] In line with increasing unemployment, the number of unemployed CSSA clients has risen rapidly (Table III.9). There are also a (small) number of low-income recipients whose income is supplemented by welfare payments based on strict means testing. Overall, expenditure on CSSA has increased rapidly during the 1990s, though, with only 1 percent of GDP in 1998, it still remains a very small percentage of total output.

D. Conclusion

23. In the last two decades, Hong Kong SAR's labor market has proved to be highly flexible both in terms of adjusting to cyclical changes as well as to the rapid structural transformation of the economy. This justifies optimism among many observers that the labor market will be able to reverse the large cyclical increase in unemployment experienced in the recent recession, and rise to the challenges of adjusting swiftly to further structural transformation in the economy in the medium term. Unemployment in the short run, however, will decline only gradually as the labor force continues to rise and high real wages adjust with a lag, thereby slowing down the recovery in profitability. This underscores the importance of assistance in job search and retraining, already a key element of existing labor-market policies. Were unemployment to continue to remain high, consideration could be given to further increasing retraining, as well as labor subsidies or other employment conditional transfer schemes (such as the earned income tax credit and family credit in the

[27]Although strongly means-tested for eligibility, payments under the CSSA are relatively generous. In FY 1997, a family of four on CSSA received monthly payments roughly the same as the average household income in the lowest 25 percent income bracket. In real terms, the benefits in FY 1998 and FY 1999 increased since the CSSA payments were not adjusted downward for deflation.

Table III.7. Hong Kong SAR: Active Labor Market Policies

Financial Year	Employment Services		Retraining Services		CAS (Young Persons Participating in Career Activities
	Total Expenditure (HK$ mn) 1/	Number of Job Seekers Registered with the Labour Department 2/	Expenditure on Retraining Services (HK$ mn)	Number of Participants	
1993-94	46.8	113,786	106.3	10,910	314,276
1994-95	52.7	112,128	245.8	40,475	330,637
1995-96	73.7	124,802	239.3	58,786	336,067
1996-97	100.6	120,472	230.0	55,370	366,474
1997-98	108.6	131,008	232.2	55,627	468,222
1998-99	137.1	213,484	365.4	69,844	474,024
1999-2000 3/	156.9	196,237	427.1	80,000	490,000

1/ Besides services provided by the Employment Services Division and the Selective Placement Division, expenditure on employment services also covers services provided by: (i) the Careers Advisory Services (CAS). The CAS provides career guidance to young people through the dissemination of career information through its two centers. It also organizes a wide range of activities for young people, such as the Education and Careers Expo, Careers Talks, visits to commercial and industrial establishment, etc.; and (ii) the Employment Information and Promotion Programme Office (EIPP Office). The office reaches out to employers and employees through a wide range of promotional activities so as to enhance their awareness of the employment services provided by the Labour Department. A main task of the EIPP Office is to strengthen rapport with employers so as to canvass more job vacancies.

2/ This figure includes all able-bodies job-seekers registered with the Local Employment Service (LES) under the Employment Services Division of the Labour Department, and all disabled job-seekers registered with the Selective Placement Division of the Department.

3/ Estimates.

Table III.8. Hong Kong SAR: Number of Civil Servants and Infrastructure Investment

Number of Civil Servants		Expenditure on Infrastructure	
Year	1995=100	Fiscal Year	1995=100
1989	103.5	1989/90	52.7
1995	100.0	1995/96	100
1996	101.5	1996/97	86.0
1997	102.0	1997/98	81.7
1998	104.3	1998/99	87.4

Source: Annual Digest of Statistics, 1999.

Table III.9. Hong Kong SAR: Welfare Payments to the Unemployed and Low Income Individuals

	Unemployed CSSA Recipients			Low Earned Income CSSA Recipients	Memorandum Total Expenditure Under the CSSA Scheme 1/	
	(1,000's)	Percent of Total Unemployed	Percent of Total CSSA Clients	(1,000s)	HK $ (Millions)	Percent of GDP 2/
1989/90	1.6	5.4	2.4	1.0	855	0.2
1994/95	5.3	9.4	4.8	1.0	3,427	0.3
1995/96	10.1	10.6	7.4	1.8	4,831	0.4
1996/97	15.0	17.4	9.0	3.1	7,128	0.6
1997/98	19.1	26.8	9.8	4.7	9,441	0.7
1998/99	31.9	20.2	13.7	7.6	13,029	1.0
1999 Q2	32.3	15.0	13.8	7.7	n.a.	n.a.

Sources: Annual Digest of Statistics, 1999 and Monthly Digest of Statistics, October 1999.

1/ Comprehensive Social Security Assistance.

2/ Calendar year figures for total unemployment and GDP.

United States and the United Kingdom, respectively). Over the medium term, improvements in general education—where Hong Kong SAR's expenditure is low by international standards (Table III.10)[28]—remain a central priority.

[28]Education budget, however, is the largest public expenditure item in Hong Kong SAR accounting for about one-fifth of the government's total expenditure. Despite the economic downturn, public expenditure on education increased by over 7 percent between FY 1998 and FY 1999.

Table III.10. Hong Kong SAR: International Comparison of Education and Technology: Selected Indicators

(Latest Post-1990 Years Available)

Item	Units of Measurement	Country							
		Hong Kong SAR	United States	Germany	France	United Kingdom	Japan	Korea	Singapore
Education									
Illiteracy Rate									
Total	Percent of pop. over 15	9.5	3.0	1.0	1.0	1.0	1.0	2.8	8.6
Male	"	5.1	3.0	...	1.0	...	...	1.1	4.2
Female	"	13.8	3.0	...	1.0	...	...	4.5	13.0
School Enrollment									
Primary	Percent of relevant age group	98.9	101.8	101.9	106.1	115.1	102.0	94.0	101.0
Secondary	"	91.7 1/	97.4	104.0	111.3	133.1	103.0	102.0	67.0
Tertiary	"	30.0	80.6	45.3	52.2	50.4	42.7	60.3	38.5
Persistence to Grade 5	Percent of total cohort	100.0	...	...	96.4	...	100.0	99.8	...
Spending on Education									
Total	In percent of GDP	3.9	5.4	4.8	6.1	5.4	3.6	3.7	3.0
Per student	In percent of GDP per capita								
Primary	"	10.1	18.5	...	15.8	18.8	19.3	18.8	7.8
Secondary	"	15.6	23.8	30.7	26.9	20.6	19.0	12.9	n.a.
Tertiary	"	83.1	24.7	37.3	26.0	40.9	13.9	6.0	28.2
Technology									
R&D expenditure	Percent of GDP	0.3	2.5	2.4	2.4	2.2	2.9	2.8	1.1
Scientists in R&D 2/	Per million inhabitants	98	3,732	2,843	2,584	2,417	6,309	2,636	2,728
Technicians in R&D	"	105	...	1,472	2,874	1,019	828	317	353
Patent Applications									
Non-residents	Applications per million inhabitants	326.3	420.6	1,200.5	1,394.7	1,770.1	480.2	1,000.1	12,614.7
Residents	"	6.5	421.9	692.9	292.8	429.7	2,710.4	1,502.8	70.6
Personal computers	Per 1,000 inhabitants	230.8	406.7	255.5	174.4	242.4	202.4	150.7	399.5
High tech exports	Percent of manufactured exports	29.0	44.0	26.4	30.6	41.3	38.3	38.7	71.2

Sources: The World Bank and Hong Kong SAR authorities.

1/ Average of junior and senior secondary education.
2/ Including engineers.

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Table 1. Hong Kong SAR: Gross Domestic Product by Expenditure Component at Current Market Prices, 1994–99

	1994	1995	1996	1997	1998	1999 Jan.–Sep.
	(In billions of Hong Kong dollars)					
Consumption	676.3	748.7	826.5	912.2	884.7	641.2
Private	592.7	654.5	722.1	798.4	766.9	550.6
Government	83.7	94.2	104.4	113.7	117.9	90.6
Gross fixed capital formation	301.1	329.6	372.3	445.8	387.8	237.3
Private	261.1	277.1	308.4	383.1	328.4	190.1
Government	40.0	52.5	63.9	62.7	59.4	47.2
Final domestic demand	977.4	1,078.3	1,198.8	1,358.0	1,272.6	878.5
Change in stocks	21.3	45.7	9.8	12.3	-11.3	-8.0
Total domestic demand	998.7	1,124.0	1,208.6	1,370.3	1,261.3	870.5
Net exports of goods and nonfactor services	12.2	-46.8	-16.7	-45.6	6.1	34.6
Exports of goods and nonfactor services	1,410.7	1,609.8	1,694.1	1,754.1	1,615.0	1,175.6
Exports of goods	1,170.0	1,344.1	1,397.9	1,456.0	1,347.7	976.2
Domestic exports	222.1	231.7	212.2	211.4	188.5	124.9
Reexports	947.9	1,112.5	1,185.8	1,244.5	1,159.2	851.3
Exports of nonfactor services	240.7	265.6	296.2	298.2	267.4	199.5
Imports of goods and nonfactor services	1,398.5	1,656.6	1,710.8	1,799.7	1,608.9	1,141.0
Imports of goods	1,254.4	1,495.7	1,539.9	1,619.5	1,432.4	1,009.7
Of which:						
Retained imports	461.1	562.2	555.0	592.1	486.7	315.6
Imports of nonfactor services	144.1	160.9	170.9	180.3	176.5	131.3
Factor income inflows	376.0	393.3	392.7	469.0	383.4	...
Factor income outflows	364.0	372.8	392.5	458.6	359.9	...
Net factor income flows	12.0	20.5	0.2	10.5	23.5	...
Gross national product	1,022.9	1,097.7	1,192.1	1,335.2	1,291.0	...
Gross domestic product	1,010.9	1,077.1	1,191.9	1,324.7	1,267.4	905.1
			(In percent of GDP)			
Memorandum items:						
Consumption	66.9	69.5	69.3	68.9	69.8	70.8
Gross fixed capital formation	29.8	30.6	31.2	33.7	30.6	26.2
Total domestic demand	98.8	104.3	101.4	103.4	99.5	96.2
Net exports of goods and nonfactor services	1.2	-4.3	-1.4	-3.4	0.5	3.8

Sources: Census and Statistics Department, *Estimates of Gross Domestic Product*; *Quarterly Report of GDP Estimates; and CEIC database.*

Table 2. Hong Kong SAR: Gross Domestic Product by Sector at Current Prices, 1994–98

	1992	1993	1994	1995	1996	1997	1998
	(In millions of Hong Kong dollars)						
Agriculture and fishing	1,468	1,612	1,596	1,453	1,444	1,464	1,530
Mining and quarrying	205	197	249	317	311	272	303
Manufacturing	99,764	92,582	87,354	84,770	82,769	80,049	73,080
Electricity, gas, and water	15,637	17,591	22,175	23,578	26,989	29,212	33,548
Construction	37,337	43,089	46,325	54,761	65,058	71,650	72,459
Wholesale, retail and import/export trades, restaurants and hotels	190,760	224,462	249,167	270,520	301,277	313,270	283,919
Transport, storage, and communications	71,227	78,993	92,109	102,199	111,087	112,829	109,452
Financing, insurance, real estate, and business services	178,923	214,550	254,346	247,985	284,119	323,427	302,491
Community, social, and personal services	110,703	130,408	151,293	175,956	198,967	220,451	234,990
Ownership of premises 1/	80,941	89,862	115,659	134,933	147,547	171,383	170,974
Adjustment for financial intermediation services (indirectly measured) 2/	-54,846	-63,177	-70,101	-80,358	-89,356	-90,164	-100,319
Gross domestic product at factor cost (production-based estimates)	732,120	830,169	950,172	1,016,115	1,130,212	1,233,843	1,182,427
Taxes on production and imports	48,777	53,278	56,286	52,974	62,443	85,001	62,538
Gross domestic product at market prices (production-based estimates) 3/	780,897	883,447	1,006,458	1,069,089	1,192,656	1,318,844	1,244,965
	(In percent of GDP)						
Memorandum items: 4/							
Manufacturing	13.6	11.2	9.2	8.3	7.3	6.5	6.2
Wholesale, retail and import/export trades, restaurants and hotels	26.1	27.0	26.2	26.6	26.7	25.4	24.0
Financing, insurance, real estate, and business services	24.4	25.8	26.8	24.4	25.1	26.2	25.6
Transport, storage, and communications	9.7	9.5	9.7	10.1	9.8	9.1	9.3

Sources: Census and Statistics Department, *Quarterly Report of Gross Domestic Product Estimates; and CEIC database.*

1/ An imputed rental charge for owner-occupied premises.
2/ An imputed service charge, equal to net interest receipts for the banking sector.
3/ Difference between production-based GDP and expenditure-based GDP estimates reflects statistical discrepancy.
4/ Measured relative to production-based GDP at factor cost.

Table 3. Hong Kong SAR: Gross Fixed Capital Formation, 1994–99

	1994	1995	1996	1997	1998	1999 Jan.-Sep.
	(In billions of Hong Kong dollars, at current prices)					
Gross domestic fixed capital formation	301.1	329.6	372.3	445.8	387.8	237.3
Private	261.1	277.1	308.4	383.1	328.4	190.1
Public	40.0	52.5	63.9	62.7	59.4	47.2
Construction	90.0	101.0	117.7	134.5	139.5	95.8
Private	53.8	54.3	62.2	81.4	88.6	54.8
Public	36.3	46.7	55.5	53.1	50.9	41.1
Machinery and equipment	114.9	156.8	164.5	183.8	161.2	96.7
Private	111.1	151.0	156.1	174.3	152.6	90.6
Public	3.7	5.8	8.4	9.6	8.5	6.2
Transfer costs of land and buildings	21.3	13.9	22.2	37.9	15.3	9.5
Real estate developers' margin	74.9	57.9	67.9	89.6	71.9	35.3
	(Share in total, in current prices)					
Private capital formation	86.7	84.1	82.8	85.9	84.7	80.1
Public capital formation	13.3	15.9	17.2	14.1	15.3	19.9
Construction	29.9	30.6	31.6	30.2	36.0	40.4
Machinery and equipment	38.2	47.6	44.2	41.2	41.6	40.8
Transfer costs of land and buildings	7.1	4.2	6.0	8.5	3.9	4.0
Real estate developers' margin	24.9	17.6	18.2	20.1	18.5	14.9
	(Percentage change, in constant prices)					
Gross domestic fixed capital formation	15.7	10.7	10.8	12.8	-6.4	-19.8
Private	15.5	8.8	9.6	16.7	-5.7	-22.7
Public	17.1	22.0	17.1	-5.7	-10.6	-2.3
Private investment in construction	20.3	-5.9	5.7	17.1	-0.1	-18.7
Private investment in machinery and equip	17.3	24.4	10.2	13.0	-6.6	-24.2

Sources: Census and Statistics Department, *Annual Digest of Statistics, Estimates of Gross Domestic Product, Quarterly Report of GDP Estimates; and CEIC database.*

Table 4. Hong Kong SAR: Estimates of External Factor Income Flows
by Income Component and by Business Sector, 1994–99 Q1

(At current market prices, in millions of Hong Kong dollars)

Type of Income Components	1994	1995	1996	1997	1998 1/	1999: Q1 1/
Direct investment Income						
Inflow total	116,262	112,810	125,557	193,093	146,608	26,532
Banking	6,156	7,558	9,082	9,556	10,113	4,191
Others	110,105	105,252	116,474	183,537	136,495	22,341
Outflow total	169,026	177,942	201,267	244,884	166,772	38,994
Banking	55,890	61,630	59,530	52,689	53,014	18,154
Others	113,136	116,312	141,737	192,195	113,758	20,840
Portfolio investment income						
Inflow total	66,482	78,575	84,583	96,494	74,063	23,008
Banking	19,088	24,300	23,828	26,567	18,072	4,494
Others	47,394	54,276	60,755	69,927	55,991	18,514
Outflow total	20,257	24,089	28,333	40,646	25,081	5,007
Banking	3,587	4,171	5,961	10,643	4,850	2,006
Others	16,670	19,918	22,372	30,003	20,231	3,002
Other investment income						
Inflow total	193,120	201,623	182,032	178,790	162,345	34,140
Banking	187,188	192,710	172,104	164,467	153,515	31,789
Others	5,932	8,913	9,928	14,323	8,830	2,351
Outflow total	174,542	170,466	162,385	172,373	167,643	30,595
Banking	169,064	162,310	150,885	160,055	158,430	28,214
Others	5,477	8,156	11,500	12,318	9,213	2,181
Compensation of employees						
Inflow total	141	270	549	657	363	49
Outflow total	141	270	549	657	363	49
Banking	10	45	13	28	3	1
Others	131	225	536	629	360	48
Total external factor income flows						
Inflow total	376,005	393,278	392,721	469,034	383,379	83,729
Banking	212,432	224,568	205,015	200,590	181,700	40,474
Others	163,572	168,710	187,706	268,444	201,679	43,255
Outflow total	363,965	372,767	392,534	458,560	359,859	74,446
Banking	228,551	228,156	216,389	223,415	216,297	48,375
Others	135,414	144,611	176,145	235,145	143,562	26,071
Net flow total	12,040	20,511	187	10,474	23,520	9,283
Banking	-16,118	-3,589	-11,374	-22,825	-34,597	-7,901
Others	25,158	24,099	11,561	33,299	58,117	17,184

Source: Census and Statistics Department, *Monthly Digest of Statistics.*
1/ Preliminary figures.

Table 5. Hong Kong SAR: Selected Price Indicators, 1994–99

(Percentage changes)

	Weight in the Index (Percent)	1994	1995	1996	1997	1998	1999		
							Q1	Q2	Q3
CPI (A)	100.0	8.1	8.7	6.0	5.7	2.6	-1.5	-3.5	-5.0
Food—overall	37.3	6.4	7.2	4.0	3.7	1.9	-1.5	-2.3	-2.3
Meals away from home	20.4	7.1	7.1	4.2	4.3	2.5	-1.3	-1.5	-1.6
Excluding meals away from home	16.9	4.8	7.3	3.7	2.9	1.1	-1.8	-3.2	-3.2
Housing	25.3	11.2	12.2	9.3	9.0	3.0	-1.5	-4.3	-9.4
Fuel and light	3.4	3.4	7.6	5.2	5.6	1.3	-0.4	-4.3	0.3
Alcohol and tobacco	2.1	5.6	6.3	5.8	5.7	6.6	4.6	2.2	-0.6
Clothing and footwear	5.1	8.8	8.6	9.5	9.1	0.1	-15.7	-20.7	-23.3
Durable goods	4.3	2.8	4.2	1.8	2.3	0.3	-2.3	-4.3	-7.0
Miscellaneous goods	6.0	6.8	6.6	2.5	7.2	3.6	2.1	-0.4	-0.4
Transportation and vehicles	7.2	9.3	7.5	6.3	3.9	4.3	1.0	0.4	0.2
Miscellaneous services	9.3	11.8	11.4	6.9	4.9	4.2	0.3	-1.1	-1.2
Composite CPI	100.0	8.8	9.1	6.3	5.8	2.8	-1.8	-4.0	-5.9
Residential price index	...	23.6	-7.2	9.6	40.9	-28.8	-26.0	-18.4	-3.8
GDP deflator	...	6.9	2.5	5.9	5.9	0.9	-3.6	-5.4	-6.3
Domestic demand deflator	...	7.1	5.1	4.9	4.8	1.1	1.0	-0.8	-4.0
Export prices 1/									
Goods deflator	...	1.3	2.6	-0.8	-1.9	-3.3	-4.4	-4.0	-3.5
Services deflator	...	4.8	5.4	1.6	0.7	-3.9	-4.0	-2.1	-1.9
Import prices 1/									
Goods deflator	...	2.3	4.8	-1.3	-1.9	-4.7	-4.0	-3.7	-2.3
Services deflator	...	7.6	9.4	1.3	1.3	-1.5	-0.3	-1.0	-0.1

Sources: Census and Statistics Department, *Consumer Price Index Report, Hong Kong Monthly Digest of Statistics, Quarterly Report of GDP Estimates; and CEIC database.*

1/ Data are on a national accounts basis.

Table 6. Hong Kong SAR: Labor Force, Employment, and Unemployment, 1994–99

	1994	1995	1996	1997	1998	1999		
						Q1	Q2	Q3 1/
				(In thousands)				
Labor force 2/	2,929	3,001	3,094	3,216	3,359	3,440	3,475	3,463
Employed	2,873	2,905	3,008	3,145	3,201	3,226	3,263	3,239
Unemployed	56	96	86	71	158	213	211	224
				(In percent)				
Unemployment rate	1.9	3.2	2.8	2.2	4.7	6.2	6.1	6.1
Labor force participation rate	62.0	62.0	61.8	61.8	62.0	62.0	62.4	62.0
				(Percent changes)				
Labor force growth	2.5	2.4	3.1	3.9	4.4	5.1	3.8	2.5
Employment growth	2.6	1.1	3.5	4.6	1.8	1.9	1.8	1.2
				(In percent of total employed)				
Employment in selected sectors 3/								
Manufacturing	16.7	15.0	12.7	11.7	10.6	10.3	10.5	10.1
Financing, insurance, real estate, and business services	14.6	15.1	15.5	16.6	16.9	16.5	17.0	16.7
Trade and tourism 4/	40.3	40.6	41.3	40.5	39.4	40.6	40.0	41.0
Building and construction 5/	2.5	2.7	3.2	3.4	3.1	3	3	2.8
Community, social, and personal services	11.8	12.0	12.5	12.8	14.1	14.0	14.1	14.0
Transportation, storage, and communications	6.5	6.9	7.1	7.2	7.3	7.3	7.3	7.2
Civil service	7.1	7.2	7.2	7.5	8.2	7.9	7.8	7.7

Sources: Census and Statistics Department, *Hong Kong Monthly Digest of Statistics, Oct. 1999; Quarterly Report on General Household Survey, April to June 1999.*

1/ Preliminary data.

2/ General Household Survey.

3/ Based on data on persons engaged by industry sector, Quarterly Survey of Employment and Vacancies.

4/ Wholesale, retail, import and export trade, restaurants, and hotels.

5/ Refers to manual workers at construction sites only.

Table 7. Hong Kong SAR: Wages, Labor Productivity, and Unit Labor Costs, 1994–99

(Percentage change)

	1994	1995	1996	1997	1998	1999 1/
Nominal wages 2/						
Overall economy	9.4	7.0	6.4	7.1	2.2	-0.8
Manufacturing	8.1	5.6	7.5	5.3	0.8	-0.6
Trade and tourism 3/	9.9	7.2	5.0	7.7	1.3	-0.2
Financial services 4/	8.8	8.2	8.4	7.4	4.3	-1.9
Real wages 2/						
Overall economy	0.8	-1.5	1.2	1.7	-0.1	4.4
Manufacturing	-0.4	-2.9	2.2	0.0	-1.5	4.6
Trade and tourism 3/	1.3	-1.4	-0.1	2.3	-1.0	4.9
Financial services 4/	0.3	-0.5	3.0	2.0	1.9	3.1
Labor productivity 2/ 5/	2.7	2.8	1.0	0.4	-6.8	-2.7
Unit labor costs 2/ 5/	6.5	4.1	5.3	6.6	9.7	3.3

Sources: Census and Statistics Department, *Hong Kong Annual Digest of Statistics; Hong Kong Monthly Digest of Statistics; Estimates of Gross Domestic Product, 1961 to 1995*; *Quarterly Report of GDP Estimates, Second Quarter 1996; Quarterly Report of Wage Statistics, June 1999 Tables 1 and 2*; and staff estimates.

1/ Data on productivity are based on data for the first half of 1999; data on unit labor costs are for the first quarter of 1999. Percentage changes are calculated over corresponding year-earlier periods.

2/ Based on September data.

3/ Includes wholesale, retail, import and export trades, restaurants, and hotels.

4/ Includes financing, insurance, real estate, and business services.

5/ Based on expenditure based real GDP and GHS employment data; data on person-hours are unavailable.

Table 8. Hong Kong SAR: Property Market Developments, 1994–99 1/

	1994	1995	1996	1997	1998	1999		
						Q1	Q2	Q3
				(1989 = 100)				
Price indices								
Private domestic premises	293	272	298	420	299	262	262	255
Of which:								
40 to 69.9 square meters	306	282	310	435	308	269	269	264
100 square meters and above	351	314	352	514	348	297	305	302
Private retail premises	285	277	287	382	275	214	210	200
Offices	222	188	184	206	130	97	97	92
Flatted factories	189	166	143	142	111	90	83	79
				(Year-on-year percent change)				
Private domestic premises	23.6	-7.2	9.6	40.9	-28.8	-26.0	-18.4	-3.8
Of which:								
40 to 69.9 square meters	25.4	-7.8	9.9	40.3	-29.2	-26.1	-18.7	-2.6
100 square meters and above	40.4	-10.5	12.1	46.0	-32.3	-28.6	-18.2	-1.0
Private retail premises	16.8	-2.8	3.6	33.1	-28.0	-37.4	-28.6	-17.0
Offices	39.6	-15.3	-2.1	12.0	-36.9	-39.0	-33.1	-16.4
Flatted factories	6.8	-12.2	-13.9	-0.7	-21.8	-26.8	-29.7	-26.9
				(1989 = 100)				
Rental indices								
Private domestic premises	170	174	171	194	161	146	144	144
Private retail premises	192	192	192	203	186	167	163	162
Offices	134	132	112	115	100	79	73	71
Flatted factories	133	131	118	118	106	93	89	86
				(Year-on-year percent change)				
Private domestic premises	21.4	2.4	-1.7	13.5	-17.0	-18.0	-14.8	-5.9
Private retail premises	15.0	0.0	0.0	5.7	-8.4	-15.7	-14.2	-10.5
Offices	21.8	-1.5	-15.2	2.7	-13.0	-30.1	-31.1	-25.3
Flatted factories	3.1	-1.5	-9.9	0.0	-10.2	-18.4	-18.3	-15.7

Sources: Census and Statistics Department, *Hong Kong Monthly Digest of Statistics,* Rating and Valuation Department; and CEIC database.

1/ Data are period averages.

Table 9. Hong Kong SAR: Revenue (General Revenue Account), 1994/95–1999/00 1/

(In millions of Hong Kong dollars)

	1994/95	1995/96	1996/97	1997/98	1998/99			1999/00
					Budget	Rev. Est.	Actual	Budget
Taxes	118,643	120,545	139,767	158,256	133,275	115,548	115,222	106,684
Direct taxes	75,754	78,696	85,476	93,112	83,686	75,420	76,983	63,619
Earnings and profits tax	74,295	77,419	83,966	91,524	82,456	74,190	75,746	62,544
Estate duty	1,459	1,277	1,510	1,588	1,230	1,230	1,237	1,075
Indirect taxes	42,889	41,849	54,291	65,144	49,589	40,128	38,239	43,065
Duties	7,583	7,899	8,450	8,465	9,229	8,004	7,698	7,743
General rates	5,156	5,806	6,285	6,258	4,907	3,624	3,614	4,770
Internal revenue	23,202	23,491	34,552	44,263	30,716	24,844	23,404	26,336
Bets and sweeps tax	9,352	11,051	12,191	13,453	14,693	12,357	12,228	13,388
Hotel accommodation tax	445	501	580	511	369	220	219	220
Stamp duties	12,714	11,215	20,461	29,097	14,750	11,500	10,189	12,160
Air passengers' departure tax	488	522	1,121	1,002	701	572	573	487
Cross Harbor Tunnel passage tax	203	202	199	200	203	195	195	81
Motor vehicles taxes	4,662	2,880	3,249	4,246	3,241	2,345	2,237	2,300
Royalties and concessions	1,653	1,773	1,755	1,889	1,396	1,311	1,286	1,866
Taxi concessions	633	0.0	0.0	23	100	0	0	50
Nontax revenue	32,409	32,649	34,090	61,885	47,707	53,963	55,171	38,625
Fines and penalties	1,520	1,607	1,592	1,566	1,596	1,359	1,333	1,525
Properties, investments, and interest	8,376	8,735	9,347	17,323	22,161	29,957	31,374	15,915
Of which: interest	4,942	5,910	5,616	8,976	11,920	20,170	21,568	8,039
Reimbursements and contributions	4,166	4,811	5,326	7,118	7,677	7,387	7,499	6,819
Utilities	8,392	7,199	6,608	6,735	4,625	4,394	4,400	3,262
Fees and charges	9,562	9,879	10,766	11,279	11,648	10,866	10,565	11,104
Land transactions 2/	393	418	451	17,864	...	...	...	...
Total Revenue	151,052	153,194	173,857	220,141	180,982	169,511	170,393	145,309
Transfer from Capital Works Reserve Fund	...	...	...	8,535	35,000	8,750	8,750	0
Total including transfers from Capital Works Reserve Fund	151,052	153,194	173,857	228,676	215,982	178,261	179,143	145,309

Source: Data provided by the Government Secretariat, Finance Bureau.

1/ The fiscal year runs from April 1 to March 31.

2/ Includes only land transactions completed before the coming into force of the Sino-British Joint Declaration (5/27/85), or land transactions conferring a benefit that expired before June 30, 1997. Revenue from other land transactions is credited to the Capital Works Reserve Fund. The only exception is for the period from July 1, 1997 to December 31, 1997 when land revenue was credited to General Revenue Account pending amendment of the Capital Works Reserve Fund resolution.

Table 10. Hong Kong SAR: Government Expenditure Under the General Revenue Account, 1994/95–1999/00 1/

(In millions of Hong Kong dollars)

	1994/95	1995/96	1996/97	1997/98	1998/99			1999/00
					Budget	Rev. Est.	Actual	Budget
Current expenditure	106,022	120,284	134,737	149,386	171,706	166,939	164,277	179,742
Personal emoluments	32,077	34,832	37,404	40,114	45,635	44,593	44,092	46,743
Personnel-related expenses	9,835	11,304	12,853	13,617	14,421	12,085	12,103	13,748
Departmental expenses	5,568	6,199	7,062	8,067	9,834	9,695	8,935	11,014
Other charges	15,633	17,928	21,147	24,139	29,118	29,232	28,568	33,235
Subventions	42,909	50,021	56,271	63,449	72,698	71,334	70,579	75,002
Capital expenditure 2/	41,238	35,573	17,195	15,794	33,784	32,374	30,417	20,163
Plant, equipment, and works	545	581	616	852	1,263	1,211	790	1,548
Other nonrecurrent	598	1,619	1,116	11,180	8,419	14,390	13,129	6,358
Subventions	995	838	2,043	1,065	1,093	1,729	1,454	1,226
Transfers to funds	39,100	32,535	13,420	2,697	23,009	15,044	15,044	11,031
Capital Works Reserve Fund	15,500	11,500	6,390	0.0	0.0	0.0	0.0	0.0
Capital Investment Fund	7,500	19,500	3,500	0.0	9,000	9,000	9,000	9,000
Loan Fund	9,100	1,500	3,500	2,170	14,000	6,000	6,000	2,000
Disaster Relief Fund	0.0	35	30	27	9	44	44	31
Civil Service Pension Reserve Fund	7,000	0.0	0.0	500	0.0	0.0	0.0	0.0
Total expenditure	147,260	155,857	151,932	165,180	205,490	199,313	194,694	199,905

Source: Data provided by the Government Secretariat, Finance Bureau.

1/ The fiscal year runs from April 1 to March 31.

2/ Includes capital expenditure financed directly from the General Revenue Account (GRA) and transfers from the GRA to Consolidated Account Funds.

Table 11. Hong Kong SAR: Public Expenditure by Function, 1997/98–1999/00 1/

(In millions of Hong Kong dollars)

	1997/98			1998/99 Budget			1998/99 Revised Estimates			1999/00 Budget		
	Recurrent	Capital	Total	Recurrent	Capital	Total	Recurrent	Capital	Total	Recurrent	Capital	Total
Economic	10,270	7,581	17,851	10,190	9,068	19,258	10,931	13,672	24,603	11,417	4,697	16,114
Security	22,041	1,723	23,764	24,708	2,633	27,341	23,988	2,039	26,027	25,210	2,873	28,083
Internal security	17,348	1,486	18,834	18,980	2,154	21,134	18,610	1,613	20,223	19,376	2,375	21,751
Immigration	1,841	94	1,935	2,183	36	2,219	2,030	55	2,085	2,206	81	2,287
Other	2,852	143	2,995	3,545	443	3,988	3,348	371	3,719	3,628	417	4,045
Social services	46,369	3,323	49,692	53,856	3,863	57,719	54,444	3,576	58,020	59,234	4,244	63,478
Social welfare	20,337	1,373	21,710	24,885	1,361	26,246	25,558	1,381	26,939	29,073	1,625	30,698
Health	26,032	1,950	27,982	28,971	2,502	31,473	28,886	2,195	31,081	30,161	2,619	32,780
Education	36,663	10,364	47,027	42,990	10,210	53,200	41,645	9,133	50,778	43,983	11,203	55,186
Environment	2,863	4,173	7,036	3,312	3,116	6,428	3,235	3,223	6,458	3,471	2,450	5,921
Community and external affairs	10,202	2,877	13,079	12,397	3,734	16,131	11,607	3,184	14,791	12,510	3,851	16,361
Recreation, culture, and amenities	8,910	2,679	11,589	10,351	3,617	13,968	10,154	3,078	13,232	10,952	3,654	14,606
District and community relations	1,292	198	1,490	1,471	96	1,567	1,453	106	1,559	1,558	197	1,755
Other	0	0	0	575	21	596	0	0	0	0	0	0
Infrastructure	9,604	11,849	21,453	11,411	15,357	26,768	10,740	12,194	22,934	11,624	13,124	24,748
Transportation	2,410	4,802	7,212	2,749	4,004	6,753	2,709	3,877	6,586	2,954	4,309	7,263
Land and buildings	2,705	5,170	7,875	3,629	8,279	11,908	3,030	5,480	8,510	3,266	5,583	8,849
Water supply	4,489	1,877	6,366	5,033	3,074	8,107	5,001	2,837	7,838	5,404	3,232	8,636
Civil service support services	23,050	7,177	30,227	25,701	7,429	33,130	22,779	7,892	30,671	25,573	8,259	33,832
Housing	11,357	13,294	24,651	13,730	35,185	48,915	12,800	28,043	40,843	13,564	32,843	46,407
Total public expenditure	172,419	62,361	234,780	198,295	90,595	288,890	192,169	82,956	275,125	206,586	83,544	290,130

Source: Data provided by the Government Secretariat, Finance Bureau.

1/ Public expenditure comprises expenditure by the Housing Authority, the Urban Council, the Regional Council, expenditure financed by the Government's statutory funds, and all expenditure charged to the General Revenue Account. Expenditure by institutions in the private or quasi-private sector is included to the extent of their subventions. The activities of government departments that are partly financed by charges raised on a commercial basis are also included (e.g., airport, waterworks). Excluded is expenditure by those organizations in which the Government has only an equity position, including statutory organizations such as the Mass Transit Railway Corporation and the Kowloon-Canton Railway Corporation. Similarly, debt repayments and equity payments are excluded, as they represent financing items.

Table 12. Hong Kong SAR: Exchange Fund Balance Sheet, 1994–99

(In millions of Hong Kong dollars; end of year)

	1994	1995	1996	1997 4/	1998 4/	1999 4/ June
Assets						
Foreign currency	381,233	428,547	493,802	588,475	701,239	705,619
Hong Kong dollar	24,617	32,187	40,715	48,215	220,163	255,529
Total	405,850	460,734	534,517	636,690	921,402	961,148
Liabilities						
Certificates of indebtedness 1/	74,301	77,600	82,480	87,015	86,465	89,895
Placements by other government funds 2/	131,240	125,916	145,898	237,629	424,562	415,910
Coins in circulation	3,372	3,597	4,164	5,399	5,778	5,688
Exchange Fund bills and notes	46,140	53,125	83,509	89,338	98,334	98,700
Balance of banking system	2,208	1,762	474	296	2,527	2,030
Other 3/	22,815	38,600	45,130	26,802	61,303	82,012
Total	280,076	300,600	361,655	446,479	678,969	694,235
Accumulated earnings	125,774	160,134	172,862	190,211	242,433	266,913

Source: Hong Kong Monetary Authority, *Monthly Statistical Bulletin.*

1/ As backing for their bank note issues, the three note-issuing banks are required to hold non-interest-bearing certificates of indebtedness issued by the Exchange Fund. Since October 17, 1983 these certificates have been issued to or redeemed from the note-issuing banks against payment in U.S. dollars at a fixed rate of HK$7.80 per US$1.00.

2/ Placements were made by the General Revenue Account, Capital Investment Fund, Loan Fund, Capital Works Reserve Fund, Civil Service Pension Reserve Fund, Land Fund, and Disaster Relief Fund with the Exchange Fund. With effect from April 1, 1998, the majority of placements bore interest at rates determined by reference to the investment income of the Exchange Fund. The remainder continued to to bear interest at pre-determined fixed rates. As from November 1998, the assets of the Land Fund were merged into the Exchange Fund.

3/ Other liabilities comprise placements by other institutions, expenses accrued at the year's end, primarily interest due on placements by other government funds, contingency reserves for bank rescue operations, and any other borrowings.

4/ The balance sheet comprises the accounts of the Exchange Fund and its subsidiary companies. Balance sheets for other periods were not prepared on a consolidated basis. The financial effect of the change is immaterial.

Table 13. Hong Kong SAR: Monetary Indicators, 1994–99 1/

	1994	1995	1996	1997	1998	1999 2/		
						March	June	Sep.
				(Percentage change)				
M1	-1.2	2.8	14.2	-4.3	-5.0	-0.9	6.9	9.1
M2	12.9	14.6	10.9	8.3	11.8	9.5	10.8	7.8
M3	13.6	14.2	10.5	8.2	10.5	8.6	10.0	7.4
Hong Kong dollars 3/	18.4	14.9	18.9	9.9	9.3	8.2	9.5	4.8
Foreign currency 4/	8.5	13.2	0.5	5.9	12.2	9.0	10.7	11.0
Total credit	15.9	14.3	6.3	6.2	-19.2	-17.2	-18.2	-13.1
Hong Kong dollars	21.5	6.4	20.0	21.5	-1.6	-1.9	-3.9	-2.0
Foreign currency	13.3	18.2	0.0	-2.1	-31.1	-29.3	-30.3	-23.3
Of which:								
Total loans and advances	14.3	14.5	4.7	5.3	-19.8	-18.1	-19.6	-14.9
Hong Kong dollars	16.9	10.5	17.0	20.4	-2.7	-3.6	-6.2	-5.6
Foreign currency	12.9	16.6	-1.4	-3.6	-32.4	-30.7	-32.1	-24.5
Currency composition				(Percent of total)				
M1								
Hong Kong dollars 3/	90.6	90.1	91.2	90.4	90.2	90.8	90.5	90.6
Foreign currency 4/	9.4	9.9	8.8	9.6	9.8	9.2	9.5	9.4
M3								
Hong Kong dollars 3/	53.7	54.1	58.2	59.1	58.5	58.7	58.7	57.1
Foreign currency 4/	46.3	45.9	41.8	40.9	41.5	41.3	41.3	42.9
Velocity								
M2	0.51	0.47	0.47	0.48	0.41	0.41	0.40	0.38
M3	0.49	0.46	0.46	0.47	0.41	0.40	0.39	0.37
Memorandum items:								
Nominal GDP (HK$ billions) 5/	1,010.9	1,077.1	1,191.9	1,324.7	1,267.4	1,247.7	1,234.0	1,227.0
Nominal growth of GDP (percent)	12.6	6.6	10.7	11.1	-4.3	-6.1	-6.3	-5.1

Sources: Hong Kong Monetary Authority, *Monthly Statistical Bulletin;* Census and Statistics Department, *Hong Kong Monthly Digest of of Statistics;* and staff estimates.

1/ Twelve-month change in monetary stocks at end of period; unadjusted for valuation changes in foreign currency-denominated deposits.
2/ Percentage changes calculated over corresponding year-earlier periods.
3/ Adjusted to include foreign currency swap deposits.
4/ Adjusted to exclude foreign currency swap deposits.
5/ Nominal GDP for four preceding quarters.

Table 14. Hong Kong SAR: Loans for Use in Hong Kong SAR, 1994–99

(Twelve-month percentage change)

	1994	1995	1996	1997	1998	1999		
						March	June	Sep.
Loans for use in Hong Kong SAR 1/	17.0	11.1	17.1	24.4	-3.8	-5.2	-8.4	-8.1
Of which:								
Manufacturing	16.4	16.6	7.4	2.9	-14.5	-15.1	-19.4	-17.8
Transportation and equipment	14.5	-3.9	20.1	16.1	10.5	2.5	-5.1	-6.0
Building, construction, and property development	38.1	5.3	27.0	32.2	-5.5	-6.9	-13.0	-11.4
Wholesale and retail trade	38.3	21.0	6.1	16.5	-12.6	-13.5	-19.4	-18.6
Miscellaneous	7.4	12.1	17.2	26.9	-2.0	-3.0	-4.2	-4.7
Of which:								
To purchase flats in the Home Ownership Scheme and private sector participation scheme	14.5	18.9	6.6	19.3	22.9	27.8	14.8	9.7
To purchase other residential property	10.9	16.7	23.1	29.4	7.3	5.7	6.4	5.5
To financial concerns	2.6	9.6	17.6	25.2	-9.8	-19.3	-24.8	-22.7
To stockbrokers	30.6	32.5	27.3	4.3	-71.4	-47.5	12.3	-12.3

Sources: Hong Kong Monetary Authority, *Monthly Statistical Bulletin*; and Census and Statistics Department, *Hong Kong Monthly Digest of Statistics*

1/ Based on outstanding loans at end of period.

Table 15. Hong Kong SAR: Loans and Advances by Type, September 1998

	Hong Kong dollar	Foreign currency	Total	Share of HK$ loans in total loans	Share of loan type in total loans
	(In billions of Hong Kong dollars)			(In percent)	
Loans for use in Hong Kong SAR	1,587	357	1,944	81.65	67.94
Trade-related	45	64	109	41.63	3.81
Other	1,542	293	1,835	84.03	64.14
Loans for use outside Hong Kong SAR	22	874	896	2.41	31.30
Trade-related	2	11	13	14.65	0.44
Other	20	863	883	2.24	30.86
Loans for which the place of use is not known	3	18	22	15.86	0.75
Total loans	1,612	1,249	2,861	56.35	100

Source: Hong Kong Monetary Authority, *Monthly Statistical Bulletin.*

Table 16. Hong Kong SAR: Balance Sheet of All Authorized Institutions, September 1999

	Hong Kong dollar	Foreign currency	Total	Share of total assets/ liabilities	Share of Hong Kong dollar assets/ liabilities
	(In billions of Hong Kong dollars)			(In percent)	
Liabilities					
Amount due to authorized institutions in Hong Kong SAR	387	176	563	8.3	68.8
Amount due to banks abroad	189	2,036	2,226	32.8	8.5
Deposits from customers 1/	1,684	1,413	3,096	45.7	54.4
Negotiable certificates of deposit (NCDs) outstanding	170	37	207	3.1	82.2
Other debt instruments outstanding	2	54	56	0.8	3.2
Capital, reserves and other liabilities	425	207	632	9.3	67.3
Total liabilities	2,858	3,923	6,781	100	42.1
Assets					
Notes and coins	12	1	13	0.2	89.4
Amount due from authorized institutions in Hong Kong SAR	386	182	568	8.4	68.0
Amount due from banks abroad	171	2,147	2,317	34.2	7.4
Loans and advances to customers	1,612	1,249	2,861	42.2	56.4
NCDs held	105	36	141	2.1	74.5
Negotiable debt instruments held, other than NCDs	248	315	563	8.3	44.1
Investments in shareholdings	17	2	19	0.3	89.0
Interest in land and buildings	52	1	53	0.8	98.6
Other	124	122	246	3.6	50.4
Total assets	2,727	4,054	6,781	100	40.2
Memorandum items:					
Number of reporting institutions	295				
Number of branches	1,579				

Source: Hong Kong Monetary Authority, *Monthly Statistical Bulletin.*

1/ Unadjusted for foreign currency swap deposits.

Table 17. Hong Kong SAR: Equity Price Developments, 1994-1999

	1994	1995	1996	1997	1998	1999
	(Index of Share Prices)					
Hang Seng Index						
End of year	8,191.0	10,073.4	13,451.5	10,722.8	10,048.6	16,962.1
Average of end of month	9,453.5	9,098.5	11,646.5	13,294.7	9,484.5	12,859.9
Sector Indices						
(Average of end of month)						
Finance	7,988.8	8,381.4	11,411.8	16,039.1	13,383.2	18,736.0
Utilities	10,708.0	10,323.0	10,243.4	11,722.6	11,868.8	14,877.8
Property	16,556.6	15,550.8	21,926.0	22,495.3	11,713.4	15,677.0
Commerce and industry	7,331.1	6,719.8	8,647.5	8,857.6	5,421.5	7,589.1
	(Percentage Change, Year-on-Year)					
Hang Seng Index						
End of year	-31.1	23.0	33.5	-20.3	-6.3	68.8
Average of end of month	22.8	-3.8	28.0	14.2	-28.7	35.6
Hang Seng Index						
Finance	27.2	4.9	36.2	40.5	-16.6	40.0
Utilities	19.1	-3.6	-0.8	14.4	1.2	25.4
Property	33.9	-6.1	41.0	2.6	-47.9	33.8
Commerce and industry	27.9	-8.3	28.7	2.4	-38.8	40.0

Sources: Census and Statistics Department, *Hong Kong Monthly Digest of Statistics;* and the *Asian Wall Street Journal.*