HONG KONG MONETARY AUTHORITY

Research Memorandum 14/2006
October 2006

STRUCTURAL DETERMINANTS OF HONG KONG'S CURRENT ACCOUNT SURPLUS

Key points:

- *Hong Kong as a city-state economy often records current account surplus. Empirical results show that the surplus is positively related to trade openness, terms of trade, volatility of output gap, the M2-to-GDP ratio and the non-service-sector-to-GDP ratio, and is negatively associated with the old-age dependency ratio. Among the explanatory variables, terms of trade and volatility of output gap play a predominate role in explaining movements in the current account balance.*

- *From a saving-investment point of view, the joint statistical significance of trade openness, terms of trade and volatility of output gap supports interpretation of Hong Kong's current account balance from the perspective of accumulation of net foreign assets. As a small and highly open economy, Hong Kong is specialised and subject to high income volatility in the face of terms of trade shocks and business cycle fluctuations, with relatively concentrated domestic investment opportunities. As a result, for income smoothing and risk diversification purposes, Hong Kong residents have accumulated substantial net foreign assets by running current account surpluses.*

- *From a trade-flow perspective, the shift in economic structure from manufacturing to service (as proxied by the decrease in the non-service-sector-to-GDP ratio) has deprived Hong Kong of a manufacturing base for exports, reducing the merchandise trade balance. Fortunately, this has been more than offset by the expansion of Hong Kong's role as a service centre for trade intermediation (as proxied by the increase in the trade openness ratio, which indicates increasing volume of trade flows being processed by Hong Kong) so that the overall current account has remained largely in surplus.*

- *Hong Kong's equilibrium current account surplus is estimated to be about 8.7% of GDP at present. Hong Kong's current account surplus is projected to average 4.4% of GDP over the next decade, smaller than the historical average surplus of 5.8% of GDP. This mainly reflects (1) more intense competition for intermediation of China trade from other Mainland cities (which reduces the pace of generation of external income through service exports), (2) an aging population (which reduces savings and hence the current account balance) and (3) a deterioration of terms of trade as a result of expected renminbi appreciation.*

Prepared by : Frank Leung
Economic Research Division
Research Department
Hong Kong Monetary Authority

I. INTRODUCTION

Hong Kong as a city-state economy registered current account surplus most of the time over the past two decades. The current account surplus cannot be adequately explained by the traditional elasticity approach to balance of payments, given the trend appreciation of the Hong Kong dollar real effective exchange rate and faster domestic economic growth relative to that of trading partners over the period. This study takes an alternative approach to examine the medium-term determinants of current account position of Hong Kong, focusing on saving-investment balance and structural changes in the domestic economy. It is shown that movements in Hong Kong's current account are related to structural factors, including expansion of Hong Kong's role as a trade intermediary, the shift in economic structure from manufacturing to service, demographic trend of aging population and volatility of business cycle and terms of trade under the Linked Exchange Rate system.

Understanding the factors that drive the medium-term movements in current account has important implications. First, underscoring that Hong Kong's current account surplus is related to the structure of the economy can help alleviate concerns that the Linked Exchange Rate System contributes to persistent currency misalignment to result in current account surplus. Second, the estimated model can be used to derive a measure of equilibrium (or sustainable) current account balance, which is an important input in the assessment of fair value of exchange rates. Third, a comparison of the structural factors pertinent to current account determination in Hong Kong with those in other countries helps improve our understanding of the important differences in the development experience between Hong Kong and other countries.[1]

The rest of the paper is organized as follows. The next section presents some stylised facts on the historical developments of Hong Kong's current account position. Section III reviews the economic literature on current account determination, discusses the variables commonly used for assessing medium-term current account dynamics and examines their relevance to Hong Kong. Section IV presents empirical

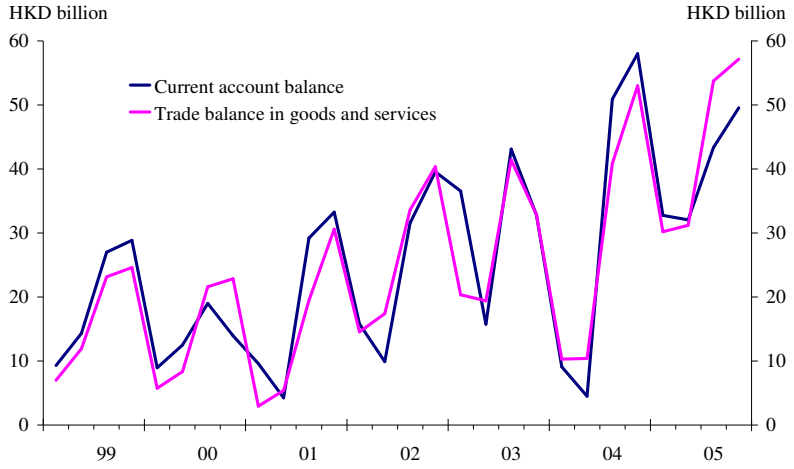
[1] For example, empirical results show that a higher degree of trade openness is associated with a higher current account surplus in Hong Kong, but higher current account deficits in other countries. It is because higher trade openness in Hong Kong indicates an expansion of its role as a trade intermediary to generate external income from service exports, while higher trade openness in other countries is typically associated with open-door policy to attract external financing to boost domestic expenditure relative to income, contributing to current account deficits. Hence, the same policy can have different impact on the current account position.

estimates of determinants of Hong Kong's current account balance, derives an equilibrium current account position from the estimated model and makes medium-term projection on the future path of the current account balance. Section V draws conclusions.

II. STYLISED FACTS ON HONG KONG'S CURRENT ACCOUNT

For the purpose of this study, the balance of trade in goods and services is used as a proxy for current account, because data on Hong Kong's current account balance are available only from late-1990s onwards. This should not be a serious limitation, as changes in the balance of trade in goods and services accounted for most of the variations of Hong Kong's current account position (Chart 1). For convenience, this paper takes the two terms to be synonymous and refers the balance of trade in goods and services as the current account balance in subsequent analysis.[2]

Chart 1: Current account and balance of trade in goods and services



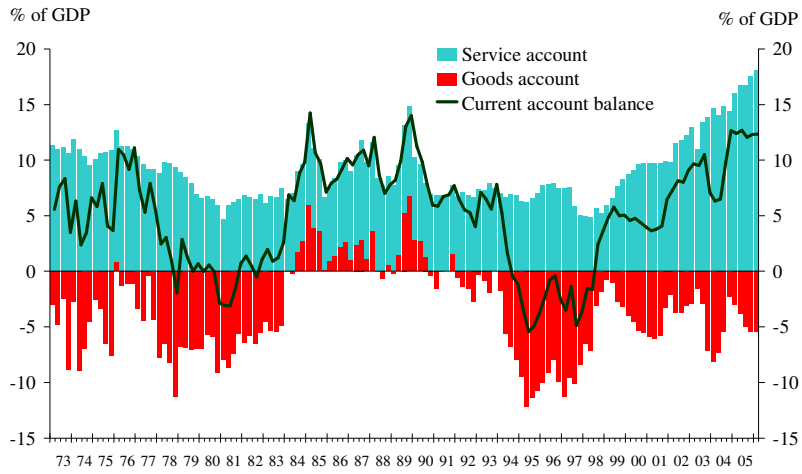
Source: C&SD.

[2] Discrepancy between the current account balance and the trade balance in goods and services reflects net factor income and current transfers. They are relatively less important because net current transfers are persistently negative to partly offset net factor income so that their overall impact on the current account balance is less obvious compared with the trade balance in goods and services. That said, as the economy accumulates a larger net foreign assets position over time, the contribution of factor income to the current account balance may become increasingly important.

There are two conceptually equivalent ways to describe the current account balance. First, the current account can be defined as the difference between exports and imports of goods, services, factor income and current transfers. Second, the current account represents the difference between national savings and investment.

Chart 2 shows a decomposition of Hong Kong's current account balance into the goods account (net merchandise exports) and the service account (net exports of services). As shown in Chart 2, except for brief periods in the late 1970s, early 1980s and mid-1990s, Hong Kong's current account was largely in surplus. The surplus in the 1980s was contributed by both the goods and the service accounts, while the surplus from 1990s onwards originated solely from the service account. The goods account has swung from surpluses in the 1980s to persistent deficits since early 1990s.

Chart 2: Goods and service accounts

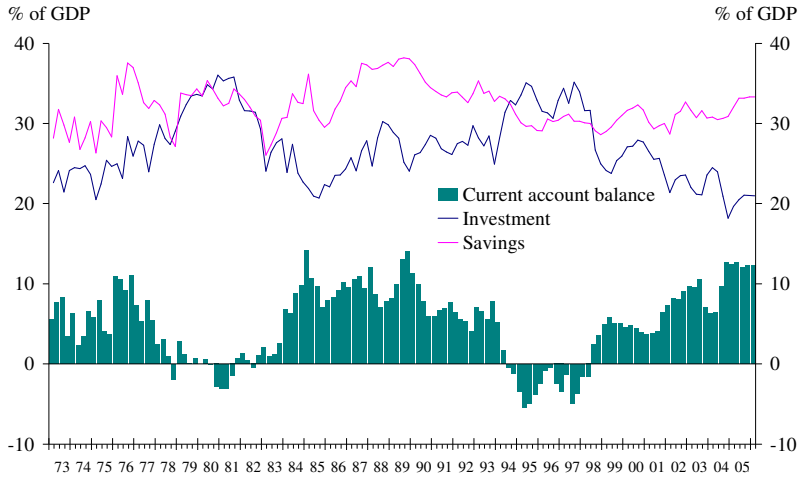


Source: Staff Estimates.

The swing in the goods account from surpluses to deficits in part reflected the decline in domestic exports. Domestic exports as a percentage of GDP decreased from about 50% in early 1980s to 10% in 2005, attributable to relocation of manufacturing facilities from Hong Kong to Mainland China after China's open-door policy in late 1970s. As manufacturing activities moved across the border, the Hong Kong economy gravitated toward trade intermediation and re-positioned itself as a service centre for both onshore and offshore trade. As a result, the service account as a percentage of GDP rose from about 7% in early 1980s to about 18% in 2005.

Chart 3 shows the movements in Hong Kong's national savings, investment and the current account over the past two decades. The gross investment to GDP ratio increased steadily from mid-1980s to 1997, underpinned by buoyant property market activities and ongoing public infrastructure projects amid a stable macroeconomic environment. However, the ratio decreased sharply after the Asian financial crisis, attributable to deflation and sluggish outlook for the property market. The recent rebound in the property market has not yet translated into a higher investment-to-GDP ratio.[3] The national savings rate (national savings as a percentage of GDP) was less volatile than the investment-to-GDP ratio, rising from 30% to 35% in the 1980s, declining back to 30% in the first half of 1990s and staying at around 30% afterwards. Taken together, the current account surplus in the 1980s was attributable to increases in national savings relative to investment, while the surplus from late 1990s onwards has been due to sustained decline in investment (as a ratio of GDP).

Chart 3: National savings, investment and the current account



Source: Staff Estimates.

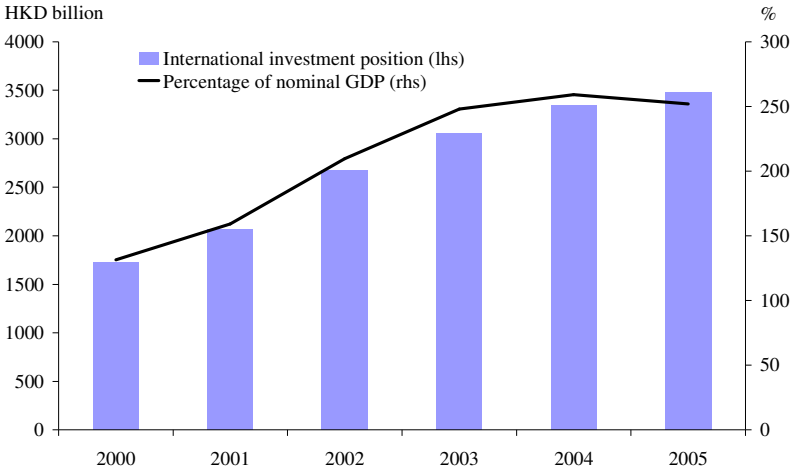
Continuous accumulation of current account surpluses over the past two decades contributed to a sizable net foreign assets position for the Hong Kong economy, equivalent to over 250% of GDP in 2005 (Chart 4).[4] A large net foreign assets position diversified the asset base of the economy and generated dividend and interest income to help smooth income fluctuation.

---

[3] The difficult macroeconomic environment after the Asian financial crisis seems to have fundamentally changed return expectations of companies. As a result, the investment-to-GDP ratio has remained at historically low levels despite the strong economic recovery since 2003.

[4] By definition, changes in net foreign assets of an economy are equivalent to the current account balance plus valuation changes.

Chart 4: International investment position of Hong Kong



Source: C&SD.

III. LITERATURE REVIEW AND SELECTION OF VARIABLES

Traditional elasticity and absorption approaches to current account determination focus on the impact of exchange rate movements and income growth at home and abroad on the current account. Because of their static and partial equilibrium nature, they are inherently inadequate in explaining medium- and long-term movements in the current account. In particular, in the case of Hong Kong, trend appreciation of the Hong Kong dollar real effective exchange rate as well as higher domestic GDP growth relative to that of trading partners over the past two decades all pointed to current account deficits under the traditional approaches. In reality, Hong Kong's current account was largely in surplus over the period.

Modern general equilibrium dynamic optimization approach emphasizes that the current account is the outcome of intertemporal saving and investment decisions (Obstfeld and Rogoff (1995)). Some of the relevant explanatory variables from this saving-investment perspective include terms-of-trade shocks, growth or inflation volatility (as a proxy for economic uncertainty) and the level of interest rate. A terms-of-trade improvement represents a rise in transitory income, which leads to a rise in savings rather than consumption, contributing to a current account surplus. Economic uncertainty increases precautionary savings and reduces incentive to pursue new investment, thus increasing the current account balance (Ghosh and Ostry (1997)). A higher interest rate increases savings and suppresses investment, increasing the current account balance.

The variables identified above only focus on fluctuations of the current account in the presence of economic shocks and are not adequate in explaining trend developments in the current account. To analyse trend movements in current account, factors that drive long-term saving and investment decisions need to be considered.

Trend evolution of domestic savings is closely related to demographic profile and the development of the banking and financial system. According to the life-cycle theory, consumption and saving behaviour are related to the stage of life cycle. To maintain a smooth consumption path over time, households tend to dissave when young (when income is low relative to lifetime income), save during the working years (to repay the debts incurred when young and to accumulate wealth for the old age), and dissave when old. As a result, changes in the age structure of the population will affect national savings. A common measure of age structure is the dependency ratio, which is defined as the ratio of dependent population (children, youth or elderly) to working population. An increase in the dependency ratio should be associated with deterioration in the current account balance. In respect of development of the banking and financial system, the M2-to-GDP ratio is often used as a proxy for the "financial deepening" process, in which increased sophistication of the banking and financial system and the availability of more financial instruments induce more savings, as suggested by Edwards (1995).[5]

In an open economy, investment can be financed by world savings rather than by domestic savings alone. According to the literature, countries that are more open to international trade (as proxied by a higher total trade-to-GDP ratio) tend to attract more foreign capital to finance expenditure relative to income, contributing to current account deficits. This sort of external borrowing is quite common in the early phase of economic development in various developing countries. The logic of borrowing during early phase of rapid growth and repaying the debt when the economy matures leads to the so-called "stages of development" hypothesis for the balance of payments. For countries that are initially at a low to medium phase of development, they usually run current account deficits to import capital in order to build up the capital stocks while maintaining their long-term rate of consumption. As income and savings increase

[5] An opposite argument is that the development of banking and financial system eases borrowing constraints so that households can borrow to finance their expenditure, decreasing the need for savings (i.e. a negative relationship between savings and financial deepening). In reality, empirical results usually find a positive relationship between savings and financial deepening.

over time and these countries reach a more advanced phase of development, the current account will turn into surpluses to service interest payments on accumulated external debts and to export capital to less advanced countries. To test this hypothesis in empirical analysis, the literature usually uses the ratio of domestic per capita GDP to US per capita GDP to measure the stage of development of an economy. A higher ratio implies a more advanced stage of development.

The following table summarizes the structural variables commonly used in the literature as medium-term determinants of current account position. Most of their theoretical underpinnings have already been discussed. The next few paragraphs will examine their relevance to Hong Kong.

Table 1: Structural determinants of current account

Variable	Economic Rationale
Stage of development (proxied by the ratio of domestic per capita income relative to that of the US)	The stage of development hypothesis for the balance of payments suggests that, as countries move from a low to an intermediate stage of development, they typically import capital and therefore run current account deficits. Over time, as they reach an advanced stage of development, countries run current account surpluses in order to pay off accumulated external liabilities and also to export capital to less advanced economies.
Trade openness (total trade-to-GDP ratio)	Chinn and Prasad (2000) show that the degree of trade openness has a significant negative relationship with current account for developing countries. It is because a country more exposed to international trade is often more attractive to foreign capital, allowing the country to boost domestic expenditure relative to income through external financing, thereby contributing to current account deficits.
M2-to-GDP ratio	It is a measure of financial deepening. A higher ratio is interpreted to be associated with the development of more financial instruments due to sophistication of banking and financial system, which induce more savings. Chinn and Prasad (2000) and Chang (2004) report a positive relationship between this variable and the current account balance.
Age composition of population (as captured by the dependency ratio)	According to the life-cycle model, consumption and saving behaviour are tied to the stage in life cycle. A higher ratio of elderly dependent population relative to working population would reduce current account, as people start to dissave when they approach retirement.
Fiscal balance	Fiscal surplus represents government savings that directly contribute to a higher current account surplus.
Interest rate	A higher interest rate increases savings and suppresses investment, increasing the current account.
Terms of trade	Terms of trade deterioration decreases current income relative to permanent income, decreasing domestic savings and thus the current account.
Output or inflation volatility	It is a measure of uncertainty in the domestic economic environment. Economic uncertainty decreases investment and increases precautionary savings, leading to a higher current account position.

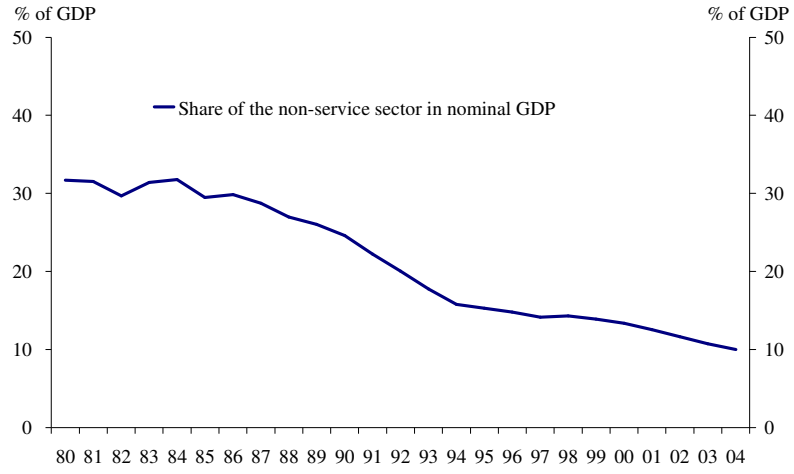
Application of the structural variables in Table 1 to Hong Kong involves the following considerations:

Stage of economic development

The stage of development hypothesis for the balance of payments suggests that, as countries move from a low to an intermediate stage of development, they typically import capital and therefore run current account deficits. Over time, as they reach an advanced stage of development, countries run current account surpluses in order to pay off accumulated external liabilities and also to export capital to less advanced economies.

Hong Kong did not go through the structural changes outlined in the stage of development hypothesis over the past few decades. Instead, a landmark of economic development in Hong Kong in the past twenty years was the structural shift from manufacturing to service, following relocation of manufacturing facilitates to Mainland China (Chart 5). The loss of a traditional source of growth from this de-industrialisation process was compensated by expansion of Hong Kong's role as a service centre for China trade and investment.

Chart 5: De-industrialisation process



Source: Staff Estimates.

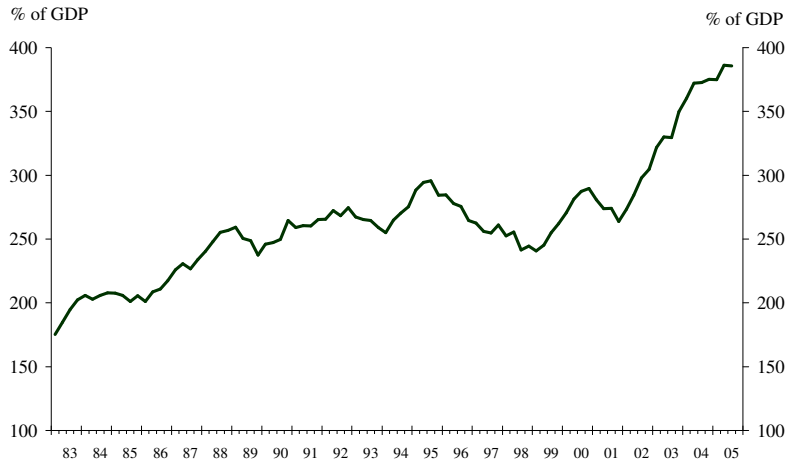
The impact of this de-industrialization process on the current account can be analysed from two different perspectives. First, the "hollowing-out" of manufacturing facilitates deprived Hong Kong of a manufacturing base for exports, reducing current account surplus. Alternatively, it is generally believed that capital intensity of the manufacturing sector is higher than that of the service sector, so the shift from manufacturing towards service would decrease capital intensity of the economy, reducing investment and increasing current account surplus. As the effects of this de-industrialisation process on the current account are opposite under the two alternative perspectives, empirical analysis is needed to determine which perspective is valid.

Openness

The literature usually reports a negative relationship between trade openness and current account, as countries more exposed to international trade are often more attractive to foreign capital, allowing them to increase domestic expenditure relative to income through external borrowing, leading to current account deficits. However, Hong Kong's experience is not the same, as Hong Kong has not relied on external borrowing to finance domestic expenditure. The effect of a higher degree of trade openness on Hong Kong's current account should be interpreted differently.

Trade openness as proxied by the total trade (in goods and services) to GDP ratio has been increasing in Hong Kong since the inception of the Linked Exchange Rate system in 1983 (Chart 6), mainly reflecting higher merchandise re-exports and expansion in service trade, as Hong Kong has been expanding its role as an intermediary of China trade. Trade intermediation generates external income from service exports to contribute to current account surplus, suggesting a positive relationship between trade openness and current account balance. Alternatively, a higher degree of trade openness is often associated with greater output volatility, which calls for the need to accumulate substantial net foreign assets for the purpose of income smoothing and risk diversification. This is done by running current account surplus. Both interpretations suggest a positive relationship between trade openness and current account position in Hong Kong.

Chart 6: Trade openness (Total trade-to-GDP ratio)

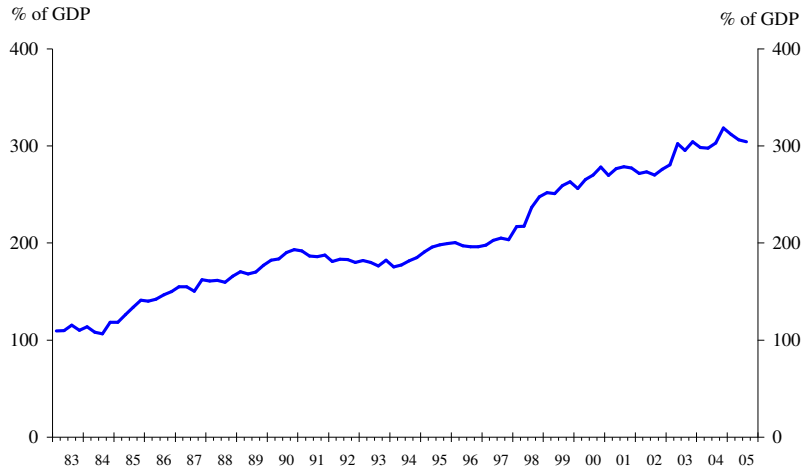


Source: Staff Estimates.

M2-to-GDP ratio and the dependency ratio

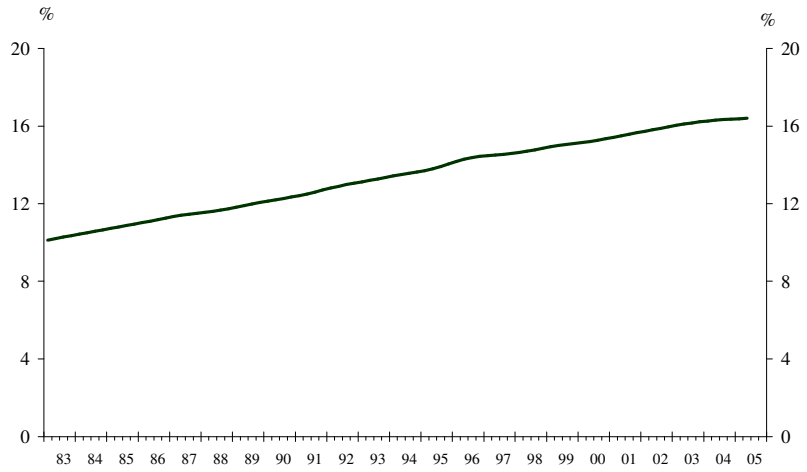
The M2-to-GDP ratio (as a proxy for financial deepening) and the dependency ratio (as a proxy for demographic changes) are related to trend evolution of domestic savings. In respect of monetary aggregates in Hong Kong, M2 can be decomposed into Hong Kong dollar and foreign currency components. The former is closely associated with domestic economic activities, while the latter is related to Hong Kong's role as an international banking centre for parking offshore deposits. The total M2 (i.e. both Hong Kong dollar and foreign currency components) to GDP ratio has been rising in Hong Kong over the past two decades, reflecting deepening of Hong Kong's banking and financial system and expansion of its role as an international financial centre (Chart 7). In respect of demographic changes, the old-age dependency ratio has risen from about 10% in early 1980s to 16-17% lately (Chart 8), which may exert downward pressure on domestic savings.

Chart 7: Total M2-to-GDP ratio



Source: Staff Estimates.

Chart 8: Old-age dependency ratio



Note: Data are interpolated from annual data.
Source: Staff Estimates.

Term of trade and output volatility

The effect of terms of trade and output volatility on the current account can be analysed from the saving-investment perspective. A terms-of-trade improvement represents a rise in transitory income, which leads to a rise in savings rather than consumption, contributing to the current account balance. Economic uncertainty associated with higher output volatility increases precautionary savings and reduces incentive to pursue new investment, increasing the current account balance.

Terms-of-trade shocks, output volatility and trade openness are also related to current account surplus from the perspective of accumulation of net foreign assets. Lane (2000) postulates that a small economy with a high degree of trade openness usually accumulates more foreign assets for risk diversification and income smoothing purposes, as a small economy is usually more specialized and a higher degree of trade openness is usually associated with greater vulnerability to terms of trade shocks and greater output volatility. This seems to be the case for Hong Kong. Hong Kong has a sizable net foreign assets position, equivalent to over 250% of GDP in 2005. As a small and open city-state economy, domestic investment opportunities are relatively concentrated and limited. Movements in GDP are also significantly affected by trade flows. As a result, for income smoothing and risk diversification purposes, Hong Kong residents have accumulated substantial net foreign assets. This has been done by running current account surpluses.

IV. ESTIMATION RESULTS AND LONG-TERM PROJECTION

This section estimates the relationship between Hong Kong's current account balance and the structural variables identified in Section III. The sample consists of quarterly data from Q4 1983 to Q1 2005. The dependent variable is the current account-to-GDP ratio (*ca_gdp*), while the independent variables are total trade-to-GDP ratio (*openness*), total M2-to-GDP ratio (*m2_gdp*), the non-service sector to GDP ratio (*non-service*), old-age dependency ratio (*depend*), the logarithm of terms of trade (*tot*), volatility of output gap as proxied by its 6-quarter rolling standard deviation (*sd_ygap*), fiscal balance (*fiscal*) and real interest rate (*rhibor*).

Following the general-to-specific approach, variables are eliminated if their coefficients are either insignificant or of the wrong signs. The final specification is as follows (Table 2).

Table 2: Regression results
Sampling period: Q4 1983 to Q1 2005, quarterly data

Dependent variable: *ca_gdp*	Estimated coefficient	Standard error
constant	-5.03	1.21
$openness_{-2}$	0.06	0.02
$m2\_gdp_{-4}$	0.16	0.03
$non\text{-}service_{-1}$	0.58	0.27
$depend_{-1}$	-4.09	1.35
tot_{-1}	1.09	0.29
sd_ygap_{-3}	1.16	0.35
Standard error of regression	0.03	
Adjusted R^2	0.71	
White test for heteroskedasticity	F-statistic =2.28 (0.02)	
Durbin-Watson (DW) statistic	1.52	

Notes: (1) All coefficients are statistically significant at 1% level, except for the service sector-to-GDP ratio, which is statistically significant at 5% level.
(2) The Newey-West heteroskedasticity-autocorrelation consistent estimators are used.

Estimation results show that the current account (as a percentage of GDP) is positively associated with trade openness, M2-to-GDP ratio, terms of trade, volatility of output gap and the non-service sector-to-GDP ratio, and is negatively related to the old-age dependency ratio. Fiscal balance and real interest rate are statistically insignificant and are therefore not shown in Table 2. Among the explanatory variables, terms of trade and volatility of output gap play a predominate role in explaining movements in the current account balance.[6]

The positive relationship between current account and trade openness is unique to Hong Kong, given that the literature usually reports a negative relationship. As discussed before, there are two possible interpretations. First, a higher degree of trade openness is associated with expansion of trade intermediation activities to generate external income from service exports, increasing the current account balance. Alternatively, a higher degree of trade openness is often associated with higher output volatility, which calls for the need to accumulate net foreign assets for risk diversification and income smoothing purposes by incurring current account surpluses.

[6] By multiplying the explanatory variables by their estimated coefficients, the impact of each variable on the current account balance can be calculated.

The positive relationship between the non-service-sector-to-GDP ratio and current account confirms the "hollowing-out" hypothesis, which argues that the decrease in the non-service-sector-to-GDP ratio as a result of the structural shift from manufacturing to service deprives Hong Kong of a manufacturing base for exports, decreasing the current account balance. Fortunately, this is offset by expansion of trade intermediation activities, as proxied by the increase in the trade openness ratio which indicates increasing volume of trade flows being processed by Hong Kong, to generate external income through service exports so that the overall current account balance remains largely in surplus.

The M2-to-GDP ratio and the old-age dependency ratio are determinants of trend movements in domestic savings. The financial deepening process associated with a higher M2-to-GDP ratio increased domestic savings and offset the effect associated with an aging population in Hong Kong so that domestic savings (as a ratio of GDP) were quite stable over the past decade.

Both terms of trade and output volatility are statistically significant. The joint statistical significance of trade openness, terms of trade and volatility of output gap further supports interpretation of Hong Kong's current account surplus from the perspective of accumulation of net foreign assets. As a small and highly open economy, Hong Kong is specialised and subject to high income volatility in the face of terms of trade shocks and business cycle fluctuations, with relatively concentrated and limited domestic investment opportunities. Consequently, for income smoothing and risk diversification purposes, Hong Kong residents have accumulated substantial net foreign assets. This has been done by running current account surpluses.

The equilibrium current account balance is estimated to be about 8.7% of GDP at present.[7] Based on reasonable assumptions on the future path of the structural determinants, medium-term projection on Hong Kong's current account balance can be made. The current account surplus is projected to average 4.4% of GDP over the next decade, smaller than the average surplus of 5.8% of GDP since the inception of the Linked Exchange Rate system. This projection is based on the following assumptions (The number in parenthesis after each bullet point below is

[7] This is calculated from the estimated regression using current values of the structural determinants, with terms of trade and volatility of output gap being smoothed by the Hodrick-Prescott filter.

the contribution of each factor to the decrease in equilibrium current account balance from the current 8.7% of GDP to 4.4% of GDP):

- The non-service-sector-to-GDP ratio is expected to remain stable at around 10%. (zero percentage point contribution)

- The trade openness ratio is assumed to increase by 7.8 percentage point per annum over the next decade, slower than the 8.4 percentage point increase over the past two decades. This reflects more intense competition for intermediation of China trade from other Mainland cities. (+2.4 percentage point contribution)

- The total M2-to-GDP ratio is assumed to increase by historical average rate of 8.9 percentage point per annum over the next 10 years. (+6.4 percentage point contribution)

- The old-age dependency ratio is assumed to increase from about 16% in 2005 to 20% over the next decade in the face of an aging population. This assumption is based on the demographic projection made by IMF in Leigh (2006). (-8.1 percentage point contribution)

- Average level of terms of trade for the next decade is assumed to be 1.5% lower than the average level of the past two decades, attributable to expected renminbi appreciation, which increases the price of imports from Mainland China. (-5.8 percentage point contribution)

- Average volatility of output gap for the next decade is assumed to be the same as the average level of the past two decades. (0.8 percentage point contribution)

Overall, the average current account surplus is expected to decrease from 5.8% of GDP to 4.4% of GDP over the next decade, reflecting (1) increasing competition for intermediation of China trade from other Mainland cities, (2) an aging population and (3) a deterioration of terms of trade in the face of expected renminbi appreciation.

V. CONCLUSION

This paper examines the structural determinants of Hong Kong's current account surplus. Estimation results show that the current-account-to-GDP ratio is positively associated with trade openness, M2-to-GDP ratio, terms of trade, volatility of output gap and the non-service sector to GDP ratio, and is negatively related to the old-age dependency ratio. Among the explanatory variables, terms of trade and volatility of output gap play a predominate role in explaining movements in the current account balance.

The joint statistical significance of trade openness, terms of trade and volatility of output gap supports interpretation of Hong Kong's current account balance from the perspective of accumulation of net foreign assets. As a small and highly open economy, Hong Kong is specialised and subject to high income volatility in the face of terms of trade shocks and business cycle fluctuations, with relatively concentrated and limited domestic investment opportunities. As a result, for income smoothing and risk diversification purposes, Hong Kong residents have accumulated substantial net foreign assets by incurring current account surpluses.

The shift in economic structure from manufacturing to service, as proxied by the decrease in the non-service-sector-to-GDP ratio, has deprived Hong Kong of a manufacturing base for exports to reduce the current account balance. Fortunately, this has been more than offset by the expansion of Hong Kong's role as a trade intermediary, as proxied by the increase in the trade openness ratio to indicate rising volume of trade flows being processed by Hong Kong, so that the overall current account has remained largely in surplus.

The equilibrium current account balance is estimated to be 8.7% of GDP at present. Hong Kong's current account surplus is projected to average 4.4% of GDP in the next decade, smaller than the historical average surplus of 5.8% of GDP, reflecting heightened competition for trade intermediation services from other Mainland cities, an aging population and terms of trade deterioration in the face of expected renminbi appreciation.

REFERENCES

Chang, Dongkoo (2004), "An Analysis of Long-term Determinants of the Current Account and the Evaluation of its Sustainability in Korea", *Bank of Korea Economic Papers Vol. 6 No. 2*, January 2004.

Chinn, Menzie and Eswar S. Prasad (2000), "Medium-term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration", *NBER Working Paper 7581*, March 2000.

Debelle, G. and H. Faruqee (1996), "What Determines the Current Account? A Cross-Sectional and Panel Approach", *IMF Working Paper 96/58*, 1996.

Edwards, Sebastian (1995), "Why are Savings Rates so Different across Countries? An International Comparative Analysis", *NBER Working Paper 5097*, April 1995.

Ghosh, Atish R. and Jonathan D. Ostry (1997), "Macroeconomic Uncertainty, Precautionary Saving and the Current Account", *Journal of Monetary Economics, Volume 40, No.1*, page 121-139.

Hang Seng Bank (2005), "Sustaining Growth through Investment", *Hang Seng Economic Monthly*, March 2005.

Lane, Philip R. (2000), "International Investment Positions: A Cross-Sectional Analysis", *Journal of International Money and Finance, Volume 19 No.4*, page 513-534.

Leigh, Lamin (2006), "Hong Kong Special Administrative Region: Macroeconomic Impact of an Aging Population in a Highly Open Economy", *IMF Working Paper 06/87*, March 2006.

Obstfeld, Maurice and Kenneth Rogoff (1998), *Foundations of International Macroeconomics* (MIT Press), 1998.

Sachs, Jeffrey and Felipe Larrain B. (1993), *Macroeconomics in the Global Economy* (Prentice Hall), 1993.