

Singapore Macro View

Prospects for 2013: Persistent Pains of Restructuring

- **Transition pains of economic restructuring to persist** — Amid a backdrop of sub-par external demand and worsening negative supply shocks from economic restructuring at home, the macro backdrop will remain challenging, including continuation of a starker growth-inflation trade-off, a tighter policy bias, faster REER appreciation and adjustments across many industries, including relocating abroad.
- **Mild technical recession risk through 1H13E, despite domestic resilience** — Leading indicators point to a mild sequential contraction in 4Q12, and drags could persist through 1H13 on [1] spillovers from a European recession, US fiscal uncertainties and a rebalancing China on trade-related sectors; [2] increasingly binding supply constraints; and [3] competitiveness erosion from structural REER appreciation on tradables sectors. But with external weakness not severe enough to hurt domestic demand significantly, domestically oriented sectors could provide limited buffers. Following the downward revision in 3Q GDP, we cut our growth forecasts to 1.4% in 2012 (prev: 2.3%) and 2% in 2013 (prev: 3.2%), below potential growth of around 3%.
- **Increasingly binding supply constraints = starker growth-inflation trade-off** — Labour supply constraints have also likely hurt GDP growth, though likely not as large as the 1-1.5% range estimated by some competitors. Parliament's vote on population policy in January will likely re-affirm the tightening of immigration policy, with a medium-term target of labour force growth of just 2% vs. almost 4% in 2012, with tightening expanded to higher income Employment Pass Holders over time. With productivity challenged by cyclical and structural factors, rising unit labour costs could cause services inflation to contribute at least a fifth of headline inflation of 3.8% in 2013, besides supply constraints in housing and cars.
- **Macro policies to maintain tightening bias; property policy risk to persist** — Barring further sharp downside surprises to downcast growth expectations, the bar for easing could remain high, as MAS appears likely to prioritize structural REER appreciation over less predictable cyclical gyrations during the period of economic restructuring. With the output gap still positive, the Budget will likely maintain a mild contractionary stance and stay focused on restructuring. Further foreign worker levy hikes and quota cuts, productivity incentives, redistributive measures and social safety nets are likely. While policy risk in housing could persist, future measures may target investment demand in non-residential sectors.
- **Faster REER appreciation may catalyze the regionalization drive** — With structurally higher inflation and a tighter monetary policy bias, some loss of competitiveness from the resulting faster real exchange rate appreciation is inevitable. This could also be a powerful catalyst for restructuring to move up the value added chain over time, and the relocation of more labour intensive/exchange rate sensitive manufacturing and tradables services, including possibly to ASEAN.

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See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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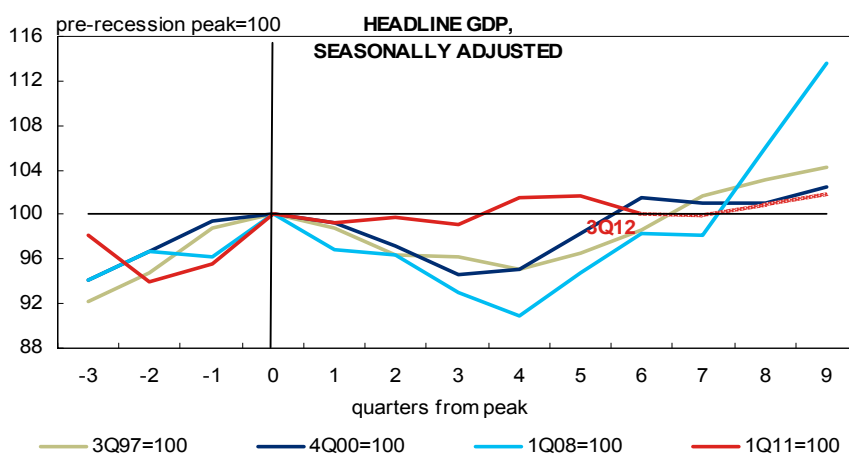
Prospects for 2013: Persistent Pains of Restructuring

Amidst sub-par external demand and policy-induced supply constraints, the macro backdrop will remain challenging in 2013. GDP growth will remain below potential at 2% in 2013, in our view, only slightly better than 1.4% in 2012E, but supply constraints, including from a tighter foreign worker policy, should keep inflation elevated at 3.8% – almost twice the historical average at 1.7%. With the output gap still positive, monetary and fiscal policies will remain on a tightening bias in 2013E, focused on economic restructuring. In the property market, while policy risk in housing could persist, future measures may target investment demand in non-residential sectors. REER appreciation could hurt manufacturing and tradables services, and firms could respond via industry consolidation and relocation/expansion overseas to overcome domestic supply constraints.

Recession Risks to Persist Through 1H13E on Weak External Demand

Our recently downgraded forecasts of 1.4% and 2% for 2012 and 2013 reflect continued weakness in external demand, drags from increasingly binding supply constraints and competitiveness erosion from real exchange rate appreciation, though fairly resilient domestic demand should provide a cushion. Quarterly growth profiles will be hesitant and patchy in the current fluid and uncertain environment, with shorter and shallower cycles and less clearly defined peaks and troughs, but within a context of generally slower growth. Our forecasts currently incorporate a mild technical recession in 4Q12, but we do not rule out mild recession risks persisting into 1H13, though this will likely not be severe enough to close the positive output gap.

Figure 1. Quarterly growth profiles will likely be hesitant and patchy with shorter and shallower cycles and less clearly defined peaks and troughs



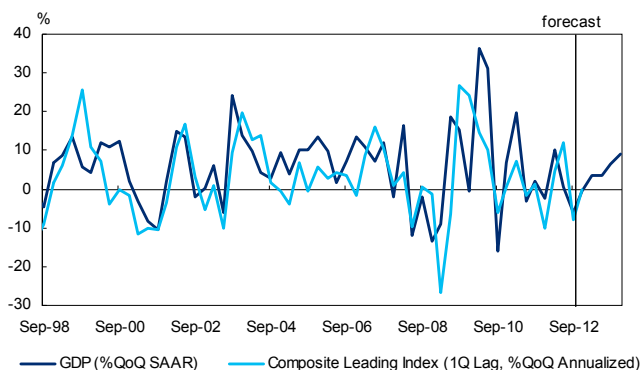
Note: 3Q12 is the sixth quarter after the 1Q11 peak

Source: CEIC, Citi Research

Leading indicators point to a mild sequential contraction in 4Q12 – and hence technical recession – though this remains a close call. This follows the dramatic four-fold downward revision in 3Q GDP to -5.9% QoQ SAAR from -1.5% and the continued sequential contraction of NODX in Oct.

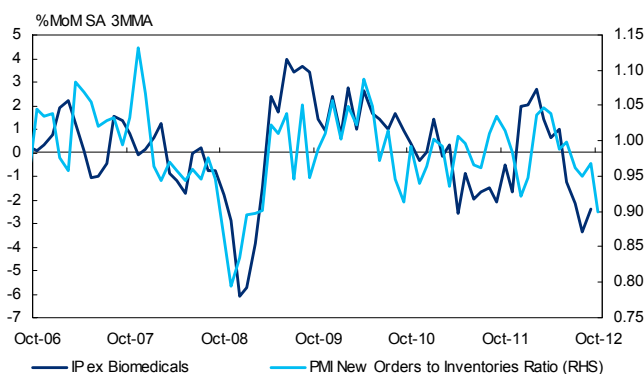
- First, the Composite Leading Indicator, which has historically led GDP growth by around a quarter, fell 0.3%QoQ annualized in 3Q (2Q: -8%). An important caveat is that in more recent quarters, the forecasting track record of the CLI has been slightly patchy. Whereas the CLI correctly predicted the QoQ contraction in 3Q GDP, the sharp 12.1% annualized rise in the CLI in 1Q did not correctly predict economic stagnation in 2Q.
- Second, the EDB Survey of Business Expectations for manufacturers similarly appears to be predicting a mild QoQ contraction for biomedical output in 4Q. Although the predictive capacity of the EDB's survey has tended to be poor with regards to other sectors, it has tended to correctly forecast the direction (though not necessarily the magnitude) of QoQ momentum in the notoriously volatile biomedical segment.
- Third, the domestic manufacturing PMI fell for the fourth consecutive month in Oct. With new orders softening and inventories rising, the fall in the new orders to inventory ratio has reached a low for the year and likely portends further weakness in production. In the case of electronics, while inventories and stocks of finished goods have been steadily falling, new orders have been falling even faster. That said, we note that the new orders to inventory ratios are already below the trough levels in 2011, so we may not be too far off from the bottom.

Figure 2. Composite Leading Indicator, which has historically lead GDP growth by around a quarter, fell 0.3%QoQ annualized in 3Q



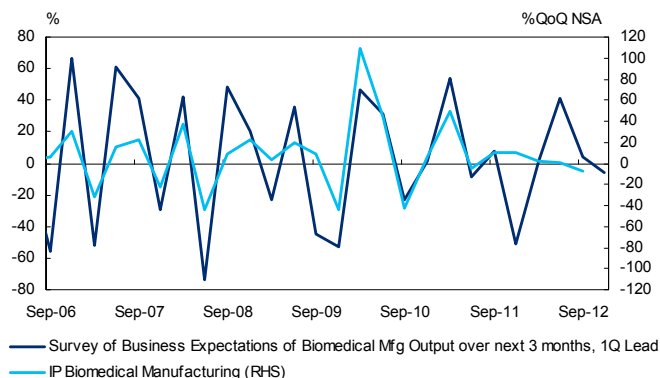
Source: CEIC, Citi Research

Figure 4. The fall in new orders to inventory ratio has reached a low for the year and likely portends further weakness in production, though we may not be too far from the bottom



Source: CEIC, Citi Research

Figure 3. EDB Survey of Business Expectations appears to be predicting a mild QoQ contraction for biomedical output in 4Q



Source: CEIC, Citi Research

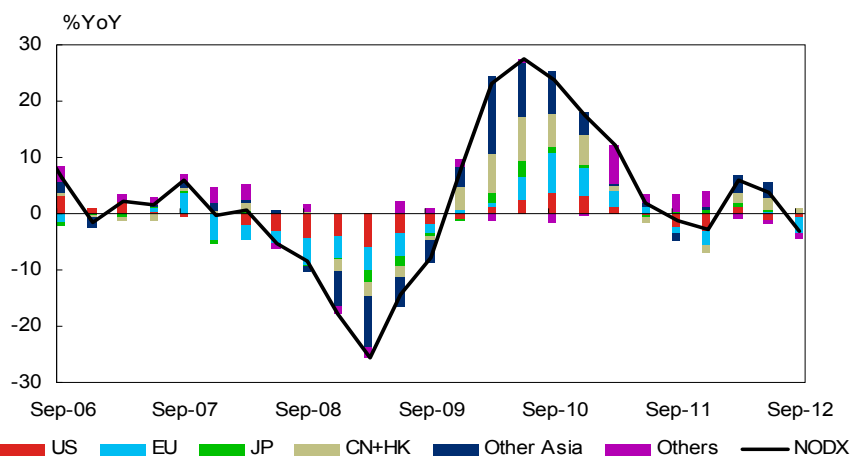
Figure 5. Citi Research GDP growth forecasts (as of Global Economic Outlook and Strategy - October 2012)

	GDP Growth		
	2011	2012F	2013F
Global	3.0	2.5	2.7
Industrial Economies	1.4	1.2	0.9
US	1.8	2.1	1.8
Japan	-0.8	2.0	0.9
Euro Area	1.5	-0.4	-0.7
UK	0.9	-0.3	0.7
Emerging Markets	6.0	4.7	5.3
China	9.3	7.7	7.6

Source: Citi Research

More broadly, drags from spillovers from the European recession, US fiscal uncertainties and a rebalancing (and slowing) Chinese economy will continue to weigh on trade and sentiment-related activities at least through early 2013. Already, these forces have exerted a drag on NODX growth, particularly in the previous quarter.

Figure 6. Economic weakness in US, Europe and China has exerted a drag on NODX growth this year, especially in 3Q



Source: CEIC, Citi Research

Of these three concerns, the impact of the US growth on demand for exports and trade related sectors is probably the most serious, despite the fact that the US's direct share of Singapore's NODX has fallen in recent years.

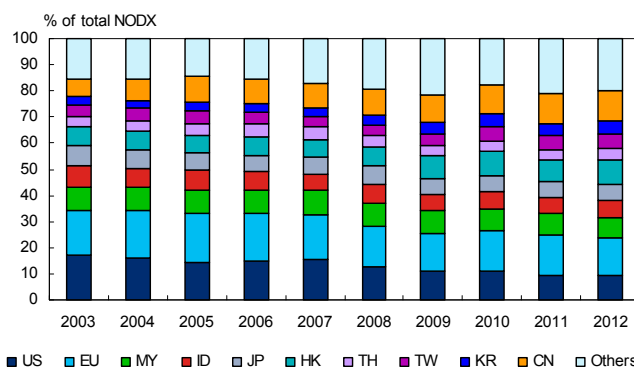
- Our simple correlation analysis of GDP growth and NODX growth for each of these three markets points to a higher correlation between US GDP and US-bound exports as compared to Europe, while NODX to China displays stronger correlation with US GDP and EU GDP than China's GDP.
- Another simulation using the Oxford Economic Forecasting (OEF) model also suggests that a 1%-pt decline in Chinese GDP growth led entirely by investments (consistent with a China growth rebalancing scenario) has half the impact on Singapore's GDP growth as a similar decline in US GDP growth after one year.

Figure 7. US outlook matters more for manufacturing exports than China or the EU...

NODX (%YoY)	GDP (%YoY)	Correlation
NODX to US	US GDP	0.58
NODX to EU	EU GDP	0.46
NODX to China	China GDP	0.07
NODX to China	US GDP	0.63
NODX to China	EU GDP	0.46

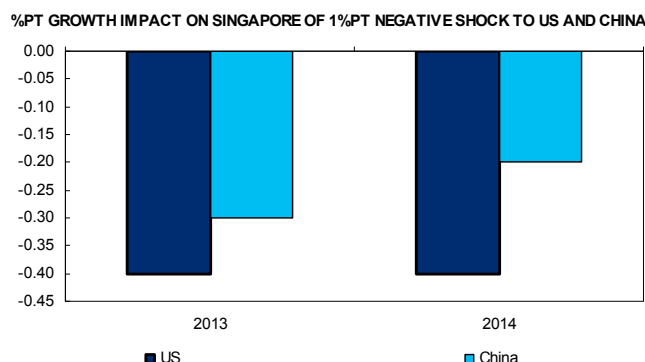
Source: Haver, CEIC, Citi Research

Figure 8. ...despite the fact that the US's direct share of Singapore's NODX has fallen in recent years



Note: 2012 is year-to-date
Source: CEIC, Citi Research

Figure 9. OEF estimates of relative impact of 1%-pt decline in US GDP growth vs a investment dominated 1%-pt decline in China GDP growth



Source: Oxford Economic Forecasting, Citi Research

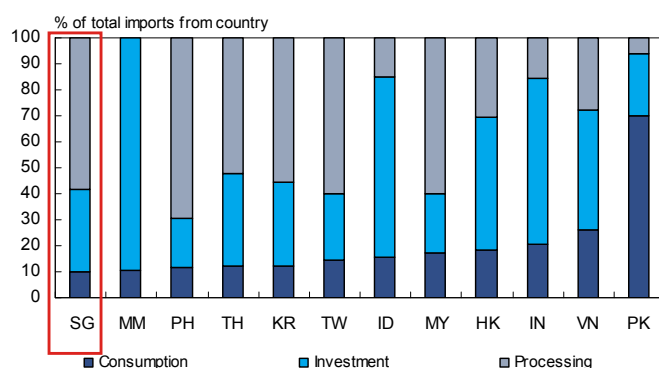
Figure 10. Pharmaceuticals and Machinery and Transport Equipment NODX as % of total NODX to partner countries

% of NODX to Country	Product	2009	2010	2011	YTD 2012
United States	Pharmaceuticals	9.8	13.2	12.8	9.8
	Machinery and Transport Equipment	69.9	76.2	74.9	69.8
Japan	Pharmaceuticals	4.8	9.1	10.9	14.7
	Machinery and Transport Equipment	53.8	50.6	48.6	44.3
China	Pharmaceuticals	3.0	3.2	2.4	2.7
	Machinery and Transport Equipment	50.7	51.5	47.1	46.1
European Union	Pharmaceuticals	49.6	39.5	47.5	54.0
	Machinery and Transport Equipment	39.2	45.3	37.8	44.4

Note: As the breakdown of NODX by products and country is not available, we estimate Pharmaceuticals NODX with domestic exports of Medicinal & Pharmaceutical Products (SITC 54); Nitrogen-Function Compounds (SITC 514); Organo-Inorganic Compounds, Heterocyclic Compounds, Nucleic Acids & their Salts, & Sulphonamides (SITC 515); and Other Organic Chemicals (SITC 516).
Source: IE Singapore, CEIC, Citi Research

The higher sensitivity to US growth reflects two factors. First, around 54% of NODX to Europe is in pharmaceuticals (compared to 9.8% for the US and about 15% for exports to Japan and just 3% for China), even as Europe remains Singapore's single largest NODX market. Pharmaceutical exports are inherently volatile but more due to industry specific/product mix factors, rather than reasons tied to the broader macroeconomic cycle. In contrast, close to 70% NODX to the US is in the highly cyclical Machinery and Transport equipment segment, which includes electronics.

Figure 11. Around 60% of China's imports from Singapore are intermediate products used to supply China's export industries



Source: CEIC, Citi Research

Figure 12. Direct and indirect export exposure to US, EU, and China

% of NODX	2007	2011	YTD 2012
NODX Share of US	15.2	9.5	9.5
NODX Share of EU	17.4	15.2	14.4
NODX Share of China	9.5	11.6	11.6
China's Export Share to US	19.1	17.1	17.3
China's Export Share to EU	20.1	18.8	16.8
Singapore's Indirect Export Share to US via China	1.8	2.0	2.0
Singapore's Indirect Export Share to EU via China	1.9	2.2	1.9
Singapore's Total Exposure to US Demand	17.0	11.5	11.5
Singapore's Total Exposure to EU Demand	19.3	17.4	16.3

Note: Indirect export share via China calculated as product of NODX share and China's export share
Source: CEIC, Citi Research

Second, around 60% of China's imports from Singapore are intermediate products used to supply China's export industries, with only 40% for its domestic demand, even though China is the second-largest export market after Europe (10.9% of NODX in 1Q12). Within imports for domestic demand, close to three quarters are to support China's domestic investments (largely in processed mineral products, capital equipment and metals), indicating the potential drag to China-bound exports from a structural rebalancing in China's growth model.

Electronics will probably bear the brunt of these headwinds on exports, which will have spillovers on trade-related services, including air and sea cargo. That said, with production and export levels already fairly depressed, we do not expect a further sharp drop from current levels.

- Global semiconductor sales are already in negative territory, and an array of leading electronics indicators globally hints that the earlier improvement in demand momentum in Aug-Sep appears to be waning. Out of 10 tech indicators (6 of which are US indicators and 4 from Asia), 6 saw MoM increases in Sep, vs. 3 or 4 categories in previous months, while exports from Korea and Taiwan also picked up in Sep. However, in Oct for example, only 1 out of the 8 tech indicators currently available expanded – the US ISM Manufacturing PMI which edged up to 51.7 from 51.5.

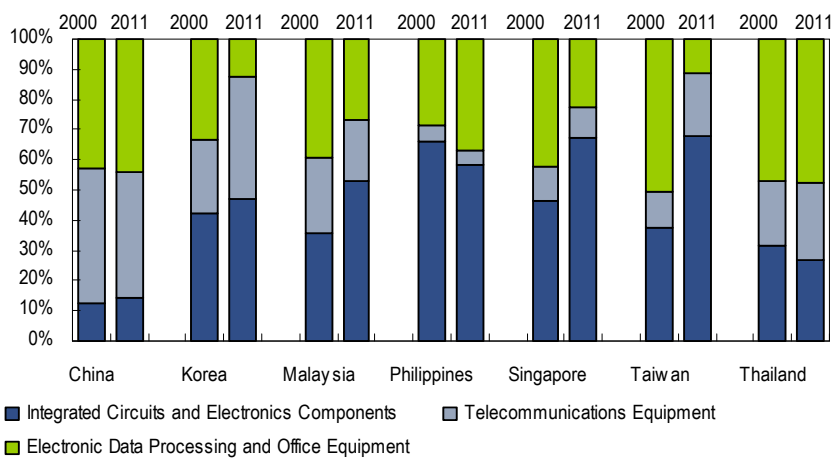
Figure 13. Indicators of Electronics Demand

	US New Orders for Computers and Electronic Products	PPI for Semicon & Related Device Mfg	US Shipment to Inventories Ratio for Computers and Electronic Products	US ISM Mfg PMI	US NASDAQ	US Semicon Book-to-Bill Ratio	China Communication, Computer and Other Electronic Equipment PMI	Taiwan Electronics Products Export Orders	Taiwan Information and Communication Products Export Orders	Singapore Electronics New Export Orders PMI	Number of Categories Rising Sequentially
	USD mn, SA	Dec-98=100			2/5/71=100			2006=100, SA	2006=100, SA		
Jan-12	21,865	40.3	0.617	54.1	2,813.84	0.96	45.0	194.2	150.2	50.9	6
Feb-12	22,786	40.4	0.621	52.4	2,966.89	1.01	54.1	189.6	146.6	50.8	6
Mar-12	22,597	40.3	0.595	53.4	3,091.57	1.12	53.8	191.8	146.8	53.4	6
Apr-12	22,957	40.4	0.602	54.8	3,046.36	1.10	53.3	186.7	149.0	52.4	5
May-12	22,854	40.7	0.633	53.5	2,827.34	1.05	49.6	187.0	150.2	51.6	4
Jun-12	21,744	40.1	0.629	49.7	2,935.05	0.93	54.8	184.7	156.9	49.2	3
Jul-12	21,280	40.6	0.613	49.8	2,939.52	0.86	53.7	191.4	152.7	48.4	4
Aug-12	20,428	40.5	0.592	49.6	3,066.96	0.82	56.2	186.9	142.4	52.4	3
Sep-12	20,201	40.4	0.602	51.5	3,116.23	0.78	53.8	190.8	149.3	52.5	6
Oct-12		39.6		51.7	2,977.23	0.75	53.8	190.0	148.9	47.5	1

Source: Haver, CEIC, CFLP, NBS, Citi Research

- Similarly, other indicators of IT spending sentiment in the US and China, including the US Empire State Manufacturing Future Technology Spending Index conducted by the New York Fed and the China Entrepreneur Expectation Indicator for the IT sector, remain weak
- As the recent jump in North Asian tech exports was fueled mainly by new product launches (iPhone in the case of Taiwan), the comparative lack of exposure to fast growing smart-phone and tablet segments vs North Asian counterparts may result in Singapore's electronics exports underperforming those of North Asia.

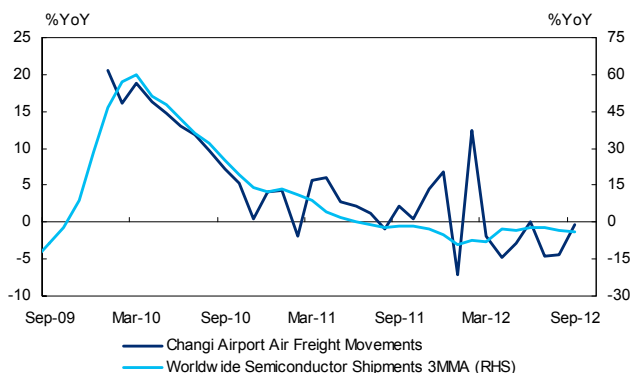
Figure 14. Comparative lack of exposure to fast growing smart-phone and tablet segments may result in Singapore's electronics exports underperforming those of North Asia



Source: WTO, Citi Research

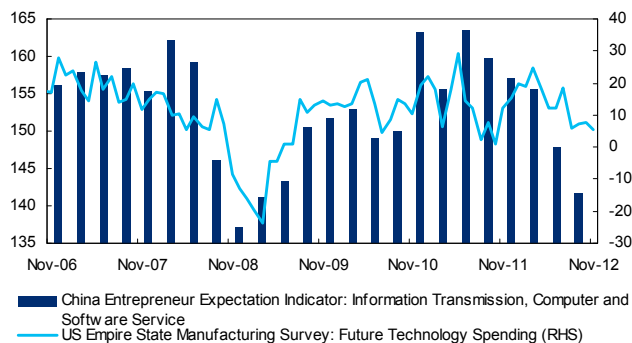
- Until recently, the current de-stocking cycle in electronics has been relatively mild compared to past cycles, reflecting uncertainty amongst manufacturers over final demand and their desire to keep inventories lean. Barring another sharp decline in final demand, the current pattern of shallow but short-lived gyrations in tech production should continue into 2013. Domestic electronics production levels are already well below the 2011 trough and declining faster than exports, suggesting inventory levels have been drawn down for the last six quarters. Given firms' experience with supply side disruptions in 2011, barring another sharp decline in demand, we do not de-stocking to accelerate sharply from here. Indeed, given the recent sharp decline in production, a near term stabilization cannot be ruled out, though a sharp rebound is unlikely until economic uncertainties subside.

Figure 15. Global semiconductor sales are already in negative territory



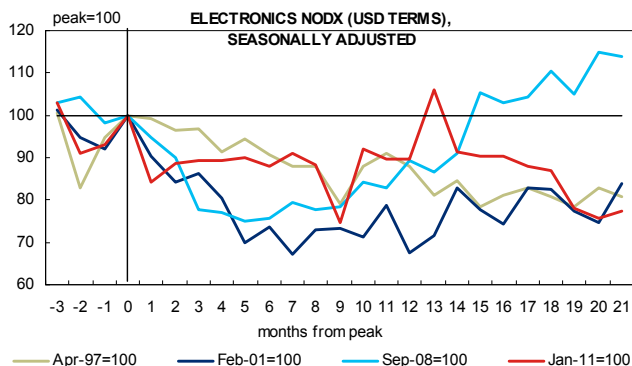
Source: CEIC, Citi Research

Figure 16. US Empire State Manufacturing Future Tech Spending and China Entrepreneur Expectations Indicator



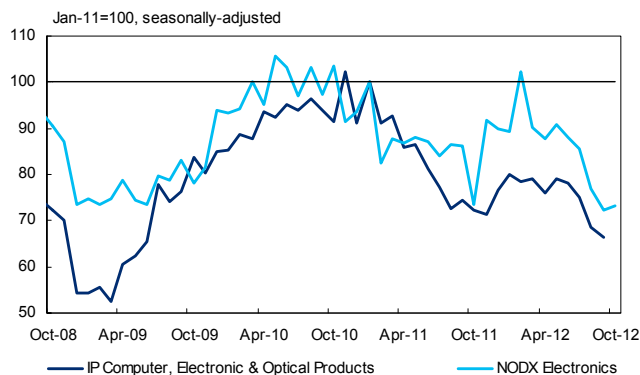
Source: CEIC, Citi Research

Figure 17. Current de-stocking cycle in electronics has been relatively mild



Source: CEIC, Citi Research

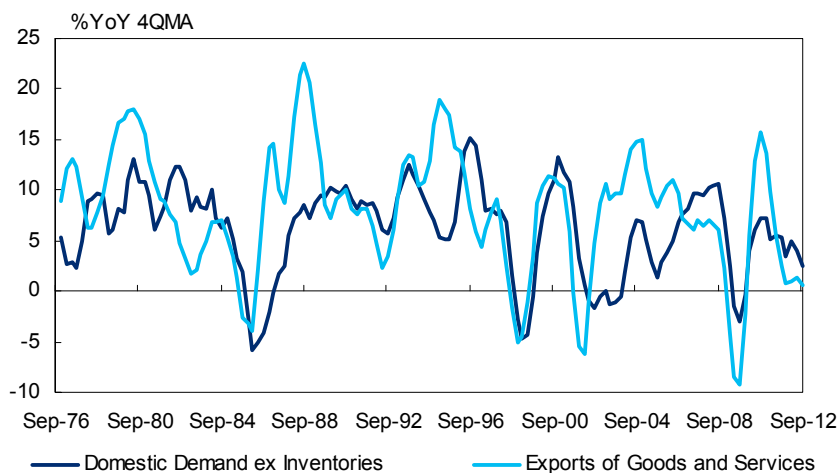
Figure 18. Electronics Production and Export levels already below 2011 troughs



Source: CEIC, Citi Research

Domestic demand has stayed relatively firm in the recent downturn, which is in stark contrast to past downturns where domestic demand saw a strong correlation with exports. The inability of domestic demand to decouple from exports in the past can be explained by the extreme openness of the economy. For example, gross exports and total trade are around 200% and 400% of GDP respectively and our analysis of input output tables suggests that manufacturing and tradables services together constitute easily 80% of final output (37% manufacturing and 43% tradables services) and almost 60% of total employment in Singapore¹.

Figure 19. Domestic demand has been able to stay relatively firm in the recent downturn



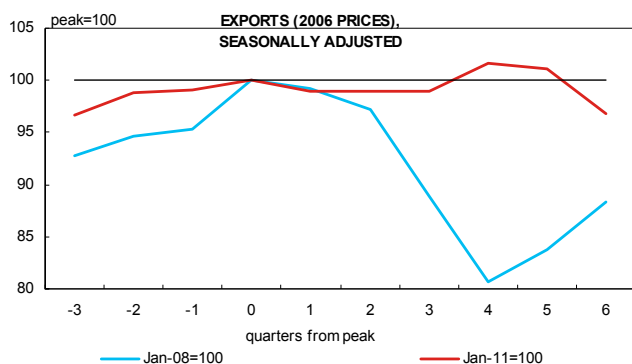
Source: CEIC, Citi Research

One important reason for the recent “decoupling” is because of the muted magnitude of the downturn in exports, which we expect to continue barring an outsized Lehman-style financial shock. For example, taking the peak of the cycle as 1Q11, we find that real exports of goods have fallen only 3.2% from the peak as at 3Q12 over six quarters, compared to a 19.3% decline over four quarters in the

¹ Wei Zheng Kit, [Singapore Macro View - Who Gets Hit Harder by Real Exchange Rate Appreciation?](#), 29 October 2012

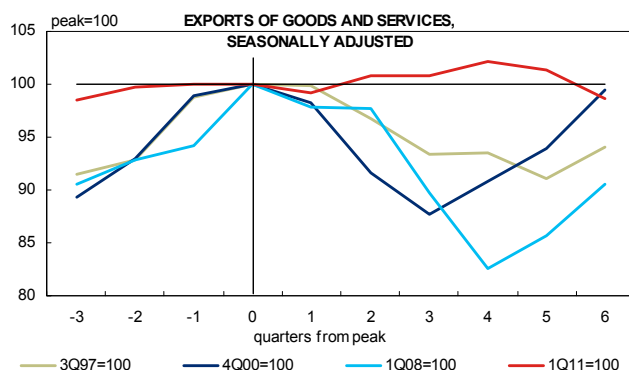
2008/09 recession. In fact, when including services exports, overall real export levels were only around 1.3% below the 1Q11 peak, attesting to the fact that services exports have continued to grow in the face of resilient regional demand. With global GDP growth expected to edge up slightly higher next year and inventory and production levels not particularly bloated, there seem to be few reasons to expect a further sharp decline in output levels from here barring a further sharp collapse in demand.

Figure 20. Real exports of goods were down around only 3.2% from the 1Q11 peak as at 3Q12 over six quarters



Source: CEIC, Citi Research

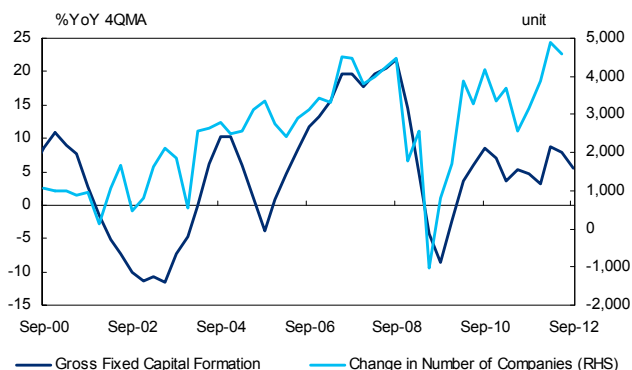
Figure 21. When including services exports, overall real export levels were actually around 1.3% below the 1Q11 peak



Source: CEIC, Citi Research

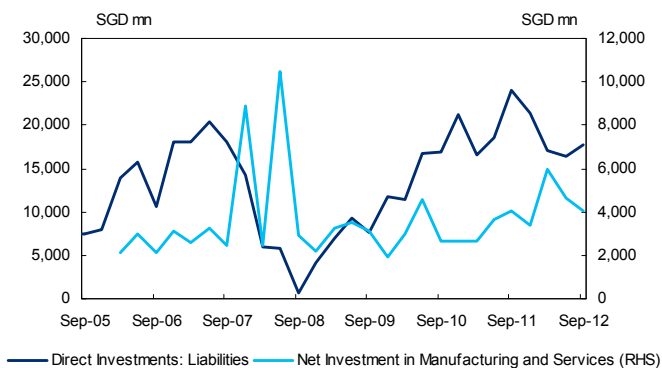
As a result, firms' decisions to invest and hire have so far remained relatively impervious to the mild export downturn so far. For example, new business registrations (net of business cessations) continue to be at record highs, keeping fixed investments in positive territory, unlike in the 2008 and 2001 when business registrations fell sharply. Similarly, FDI inflows and investment commitments remain elevated despite coming off the peak, with investment commitments secured by EDB in the first three quarters already exceeding that for the whole of 2011. With new investment projects, the demand for labour has been kept at elevated levels, notwithstanding some moderation in recent quarters.

Figure 22. With a near record of new companies being formed, fixed investments have stayed relatively resilient in the current downturn



Source: CEIC, Citi Research

Figure 23. FDI and investment commitments remain fairly elevated, despite coming off from recent peaks



Source: CEIC, Citi Research

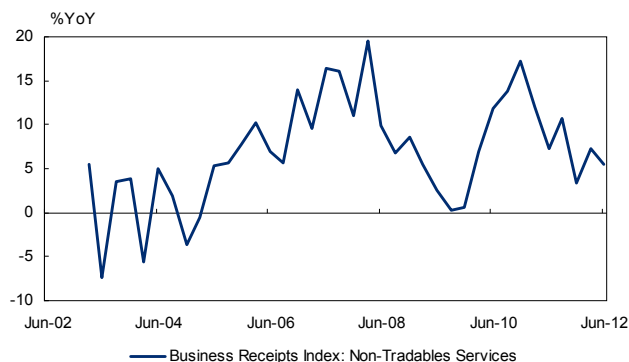
Domestic demand may have also seen a structural lift from the immigration boom since 2004, which has led to a 25% increase in population since 2004 to around 5.3mn. This in turn has lifted domestic demand through two ways. First, a larger population has created demand for a range of non-tradables services, including real estate, education, healthcare and social services, as well as recreational and personal services.

Figure 24. Singapore Population (as at June)

Year	Number ('000 as at June)					Average Annual Growth Rate (%)					Absolute Growth ('000)				
	Total	Total Residents	Citizens	PR	Non Residents	Total	Total Residents	Citizens	PR	Non Residents	Total	Total Residents	Citizens	PR	Non Residents
1990	3,047.1	2,735.9	2,623.7	112.1	3,112.0	2.3	1.7	1.7	2.3	9.0					
2000	4,027.9	3,273.4	2,985.9	287.5	7,545.0	2.8	1.8	1.3	9.9	9.3					
2005	4,265.8	3,467.8	3,081.0	386.8	798.0	2.4	1.6	0.8	8.6	5.9	99.1	54.5	23.9	30.6	44.6
2006	4,401.4	3,525.9	3,107.9	418.0	875.5	3.2	1.7	0.9	8.1	9.7	135.6	58.1	26.9	31.2	77.5
2007	4,588.6	3,583.1	3,133.8	449.2	1,005.5	4.3	1.6	0.8	7.5	14.8	187.2	57.2	25.9	31.2	130.0
2008	4,839.4	3,642.7	3,164.4	478.2	1,196.7	5.5	1.7	1.0	6.5	19.0	250.8	59.6	30.6	29.0	191.2
2009	4,987.6	3,733.9	3,200.7	533.2	1,253.7	3.1	2.5	1.1	11.5	4.8	148.2	91.2	36.3	55.0	57.0
2010	5,076.7	3,771.7	3,230.7	541.0	1,305.0	1.8	1.0	0.9	1.5	4.1	89.1	37.8	30.0	7.8	51.3
2011	5,183.7	3,789.3	3,257.2	532.0	1,394.4	2.1	0.5	0.8	-1.7	6.9	107.0	17.6	26.5	-9.0	89.4
2012	5,312.4	3,818.2	3,285.1	533.1	1,494.2	2.5	0.8	0.9	0.2	7.2	128.7	28.9	27.9	1.1	99.8
2006-2009						4.0	1.9	1.0	8.4	12.1	180.5	66.5	29.9	36.6	113.9
2010-2012						2.1	0.7	0.9	0.0	6.0	108.3	28.1	28.1	0.0	80.2

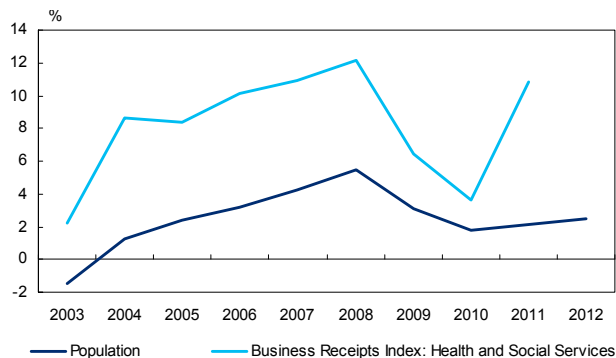
Source: Department of Statistics, Citi Research

Figure 25. A larger population has created demand for a range of non-tradables services...



Note: We use a weighted average of business receipts of real estate, rental and leasing; education; health and social services; and recreation and personal services
Source: CEIC, Citi Research

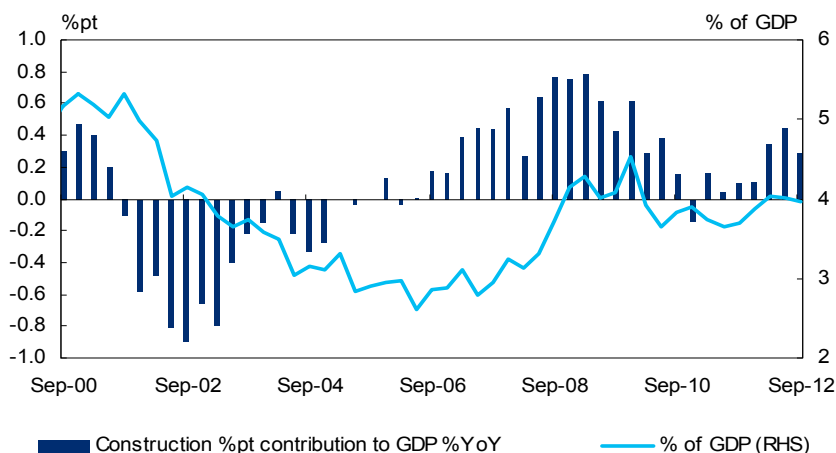
Figure 26. ...including health and social services



Source: CEIC, Citi Research

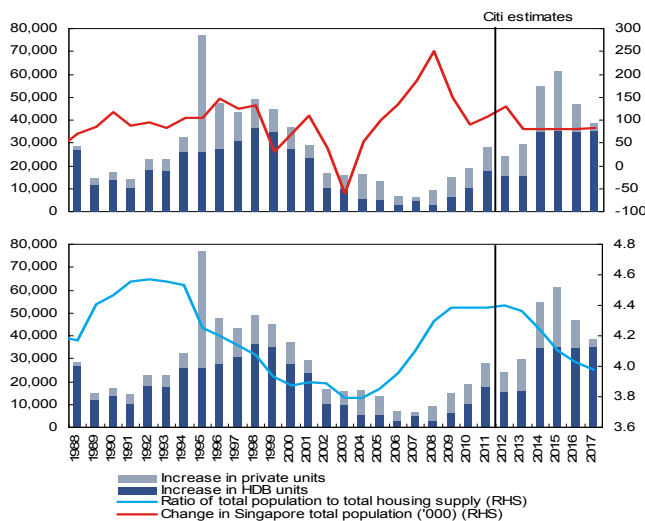
Second, the increase in demand led to increased supply, which has in turn lifted the construction sector and related services. Nowhere is this more evident than in housing, where the ratio of population to housing stock, at 4.4 now, currently remains well above historical averages and is unlikely to normalize till 2015. The pipeline of close to 90K private residential units and the ramp up in HDB supply to 25-30K per year should keep the pipeline of residential construction contracts awarded fairly strong in the medium term. Significant public sector investments in land transport infrastructure and healthcare could also support the construction sector. With only S\$20.4bn of the estimated S\$60bn in land transport spending between 2008-2020 under the Land Transport Masterplan spent so far, this implies close to S\$5bn of annual transport development spending on average from 2013-2020, for the completion of major infrastructure projects such as the Downtown Lines Healthcare development expenditure will still rise S\$176mn to S\$641mn, or 37.8%, to significantly increase public hospital capacity.

Figure 27. Increase in demand led to increased supply, which has in turn lifted the construction sector



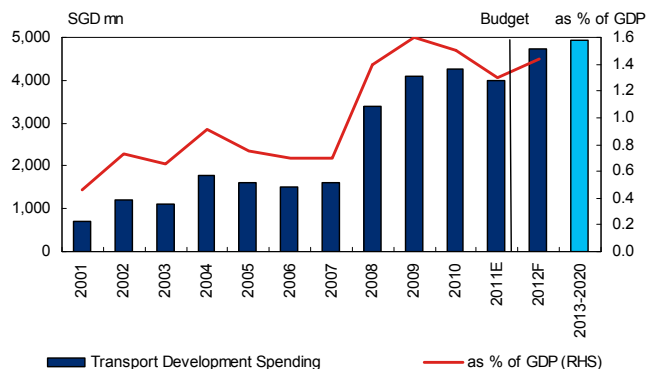
Source: CEIC, Citi Research

Figure 28. Ratio of population to housing stock at 4.4 remains well above historical averages and is unlikely to normalize till 2015



Source: CEIC, Citi Research

Figure 29. Spending so far implies close to S\$5bn of annual transport development spending on average from 2013-2020



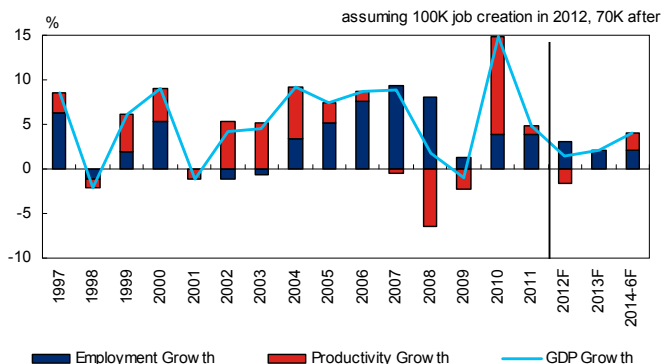
Note: 2013-2020 is Citi estimate

Source: Ministry of Finance, CEIC, Citi Research

Supply Constraints = Starker Growth Inflation Trade-off

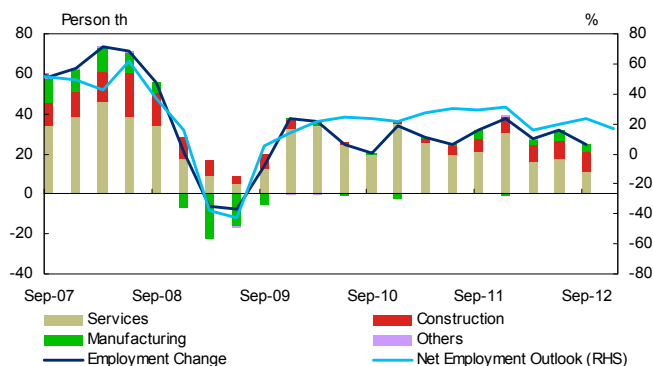
Besides sluggish external demand, growth will also be depressed by increasingly binding supply constraints, especially in the labour market, where tightening immigration restrictions are likely to cause labour force growth to slow to around 1% (vs >5% in the last seven years), which will not be fully offset by a hoped-for acceleration in productivity growth to 2% (vs 1%).

Figure 30. GDP growth by productivity and employment



Source: CEIC, Citi Research

Figure 31. Manpower Inc. survey suggests that demand for labour in 2012 would have averaged around 35-40K per quarter compared to actual quarterly job creation of around 29.5K for 1H12



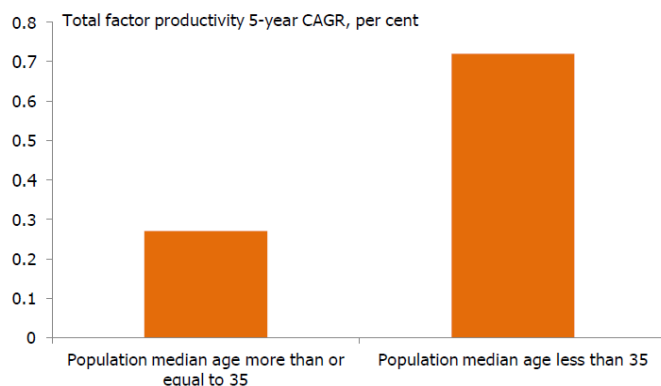
Source: CEIC, Manpower Inc, Citi Research

Estimating just how much growth has been “lost” due to the tighter foreign worker policy is subject to some debate, though we doubt it is large as the 1-1.5%-pts that some competitors have estimated. These estimates are based on the additional jobs that would have been created this year had a more liberal foreign worker policy allowed all manpower demand needs to be met. The Manpower Inc. survey suggests that demand for labour in 2012 would have averaged around 35-40K per quarter (or around 150K jobs) compared to actual quarterly job creation of around 29.5K for the first half of the year (or roughly 110-120 jobs annualized). The 30-40K shortfall in employment creation translates up to a 1.2%-pt shortfall in jobs growth and GDP growth, ceteris paribus. These estimates appear large, as productivity would have likely been even lower had a more liberal immigration policy been adopted. After all, even during the boom years of 2006-2007 when the liberal immigration policy was in place, productivity growth averaged just 0.3%, similar to the last two years. Moreover, much of the dismal productivity growth in the last two years likely stemmed from cyclical factors – labour productivity did rise an impressive 10.9% during the boom year in 2010 after foreign worker policies had already been tightened.

Regardless, more binding supply constraints from a tighter foreign worker policy are probably here to stay, which will likely be affirmed when Parliament votes on population policy in January. The Ministry of Trade and Industry in a recent paper² mentioned that a “calibrated rate of immigration and foreign worker inflows” will be needed to tackle demographic shifts. We suspect this “calibrated rate” may entail a further decline in immigration from current levels of around 28.1K net new residents in the last three years as eligibility criteria for permanent residencies are further tightened. The growth in the non-resident population could slow, perhaps to 40-50K – half of the recent rate of around 90K. This would imply population growth of just 60-70K, close to half of 2012’s 128K, or labour force growth of just 2%. When combined with the aging resident population, total factor productivity growth could also be dampened as the experience of developed countries suggests, depressing potential growth.

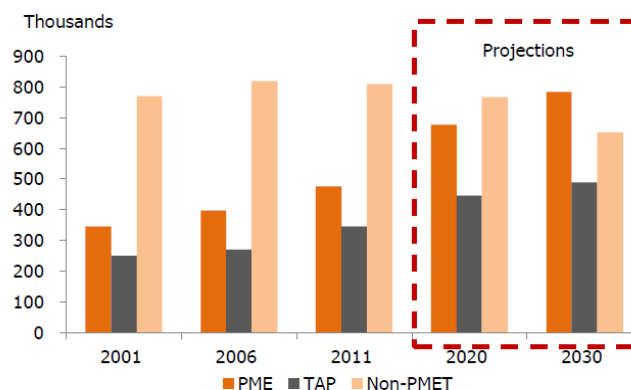
² See Singapore Ministry of Trade and Industry, “Occasional Paper on Population and Economy”, 25 September 2012

Figure 32. Aging population may dampen innovation and productivity growth, as the experience of developed countries suggests



Source: Singapore Ministry of Trade and Industry

Figure 33. Projections of employed Singaporeans by occupation based on changing educational profiles



Source: Singapore Ministry of Trade and Industry

While a further tightening on low- and mid-skilled Work Permit Holders should be expected, over time, the targeted segments of tightening will likely shift up the income ladder to include more Employment Pass holders. The MTI has observed that from now till 2030, a rising proportion of Singaporeans will be employed as professionals, managers and executives (PMEs) and technicians and professionals (TAPs), compared to a much higher proportion of lower skilled jobs today. Thus foreign worker tightening could encompass more Employment pass holders to limit competition for jobs facing citizens.

Figure 34. Non-resident population in Singapore

	2011			2010			2009
	persons (th)	growth rate (%)	absolute change (th persons)	persons (th)	growth rate (%)	absolute change (th persons)	persons (th)
Employment Pass	176	23.9	34	142	23.5	27	115
S-Pass	113	15.3	15	98	19.5	16	82
Work Permit (excluding foreign domestic workers)	702	4.8	32	670	N/A	N/A	N/A
Work Permit (foreign domestic worker)	206	23.4	39	167	N/A	N/A	N/A
Dependents	195	N/A	N/A	N/A	N/A	N/A	N/A
Students	84	N/A	N/A	N/A	N/A	N/A	N/A

Source: Ministry of Manpower, Business Times, Citi Research

Indeed, clear signs of tightening of Employment Pass holders have already emerged. Apart from raising income thresholds for Employment Pass eligibility and raising the bar for foreigners to bring their families here, in early Nov, the Ministry of Manpower announced that the minimum income eligibility for top-tier Personalised Employment Pass (PEP) holders would be more than quadrupled from S\$34K to S\$144K per annum, while the duration of the pass (which can no longer be renewed), will be shortened from 5 years to 3 years. Unlike the Employment Pass, the PEP allows foreigners to work in Singapore without being tied to a specific employer, allowing them to stay for up to six months between jobs, compared to one month for Employment Pass holders. Only one-third of the current 12,000 PEP holders (7% of the 174K EP holders) will be eligible under the new criteria. However, with the remaining two-thirds still able to work in Singapore under Employment Passes, the impact on overall foreign worker numbers from this measure alone should be limited, even if it does signal the intent to raise the quality of foreign workers.

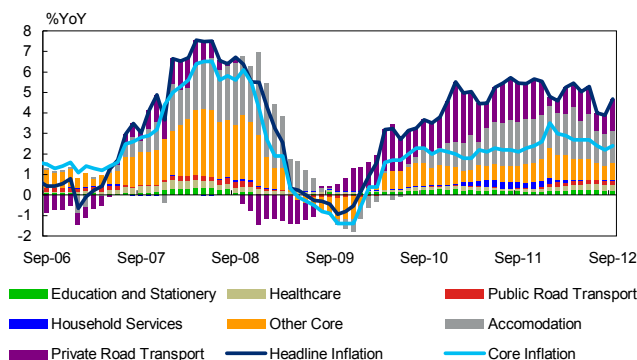
Figure 35. Recent tightening measures for EP holders

Date Effective	Measure
Jul-11	Q1 Employment Pass salary eligibility criteria raised to S\$2,800 from S\$2,500. P2 Pass salary eligibility criteria raised to S\$4,000 from S\$3,500. P1 Pass salary eligibility criteria raised to S\$8,000 from S\$7,000
Jan-12	Q1 Employment Pass educational and salary eligibility criteria raised to S\$3,000 from S\$2,800. P2 Pass salary eligibility criteria raised to S\$4,500 from S\$4,000
Jul-12	Calibrated reduction in Dependency Ratio Ceilings (DRCs) – which specify the maximum proportion of foreign workers that companies can hire – in manufacturing and services sectors. Manufacturing DRC cut to 60% from 65% and Services DRC cut to 45% from 50%
Dec-12	Personalised Employment Pass (PEP) eligibility criteria raised to S\$144,000 annual income from S\$34,000; duration shortened to 3 years from 5 years; can no longer be renewed

Source: Ministry of Manpower, Citi Research

Even as these policy induced supply constraints crimp potential growth, they will drive a rise in cost structures, especially in labour intensive services dependent on low wage foreign workers, keeping inflation structurally higher at 3-4% – double the 30-year average of 1.7%. This is already happening in non-tradables sectors such as healthcare and education for example, in some cases outstripping wage growth as productivity is not catching up. Labour intensive services costs in public transport, healthcare, education and household services have contributed around one fifth of headline inflation and around half of core inflation in recent months, with the contribution likely edging up in 2013.

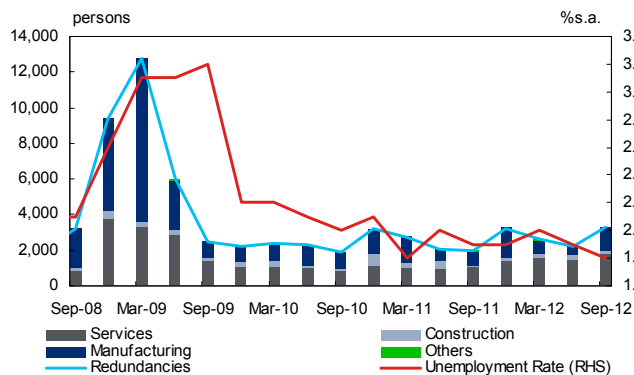
Figure 36. Labour intensive services costs in public transport, healthcare, education and household services have contributed around one fifth of headline inflation and around half of core inflation



Note: Estimated contributions to core inflation by item may not add up due to rounding errors Source: Ministry of Manpower, CEIC, Citi Research

Source: CEIC, Citi Research

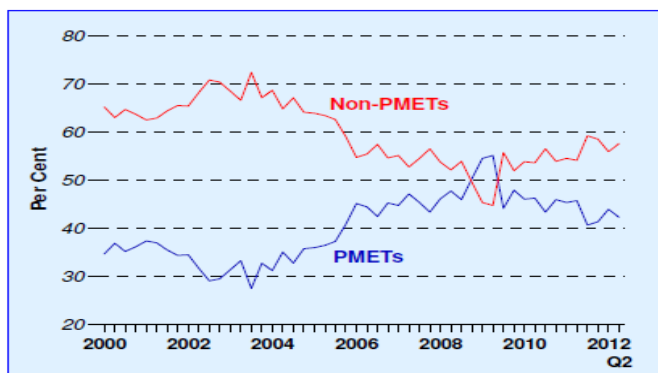
Figure 37. Unemployment rate fell in 3Q despite a rise in redundancies



With labour supply slowing as fast as or even faster than demand, we doubt that wage disinflation will set in quite as quickly as in past downturns, keeping inflation in labour-intensive services elevated into 2013. This dynamic was most evident in 3Q12. Despite signs of softening labour demand, including a rise in redundancies in manufacturing and services to 3.3K (2Q: 2.2K) and a slowdown in net job creation to 24.9K (2Q: 31.7K), the unemployment rate actually fell further to 1.9% (2Q: 2%). With productivity gains muted in a cyclical downturn, this could lift unit labour costs through either higher foreign worker levies or higher wages of a limited pool of local workers. MAS's studies show that the sensitivity of wage growth to changes in the resident unemployment rate has increased, i.e. an equivalent fall in the residential unemployment rate now results in higher wage

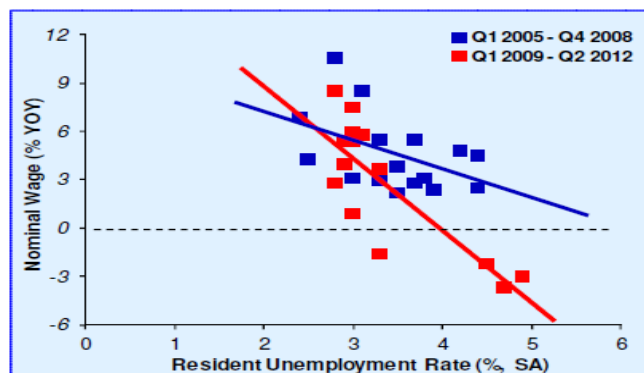
growth than before. Pressures on inflation could be further exacerbated by a more acute shortage in less-skilled services jobs (non-PMET jobs) in the non-tradables sectors which have a larger bearing on the services components of the CPI basket. Explicit measures designed to substitute for minimum wages will likely exacerbate such pressures – a Progressive Wage Model for cleaning companies has been introduced while the Health Ministry will be injecting S\$4mn to support salary increases of between 10-24% for more than 3,500 administrative, ancillary and support-care staff working in step-down care facilities run by voluntary welfare organizations

Figure 38. Share of vacancies by occupation



Source: MAS Macroeconomic Review Oct 2012

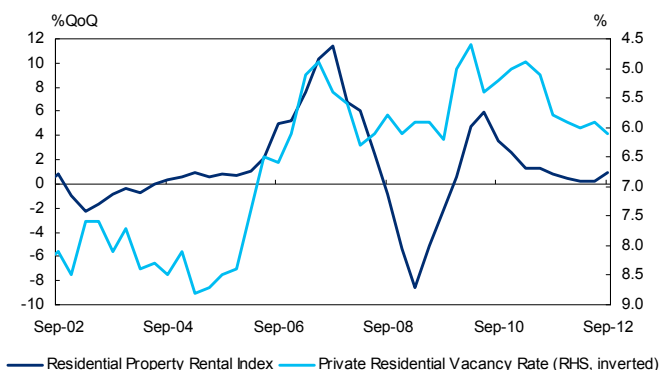
Figure 39. Nominal Wage Growth and Resident Unemployment Rate



Source: MAS Macroeconomic Review Oct 2012

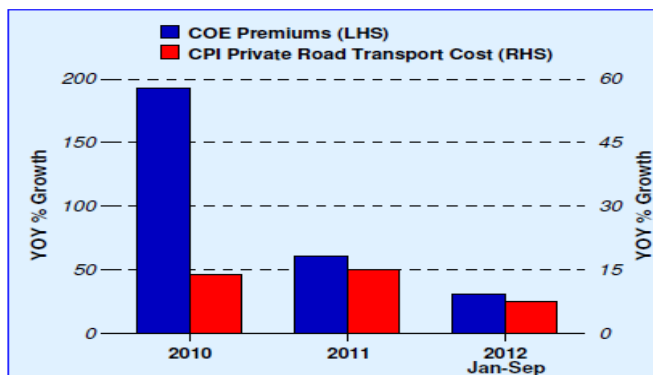
Apart from wage pressures, supply constraints in housing and private road transport will continue to exert a significant influence on headline CPI inflation in 2013. In housing, while QoQ momentum in the private residential rentals had been moderating since 2010, the latest 3Q12 data showed an uptick reflecting tight supply, particularly in the mass market. However, private rentals should not increase sharply given the rise in vacancy rates. The picture is less clear in the HDB market, where tight supply could be further exacerbated by new rules restricting permanent residents from renting out their flats. The difference in HDB and private rental markets is reflected in divergence between the accommodation CPI and the URA rental index in addition to other methodological differences in computation of the two indices.

Figure 40. Eventual rise in vacancy rates should moderate rentals



Source: CEIC, Citi Research

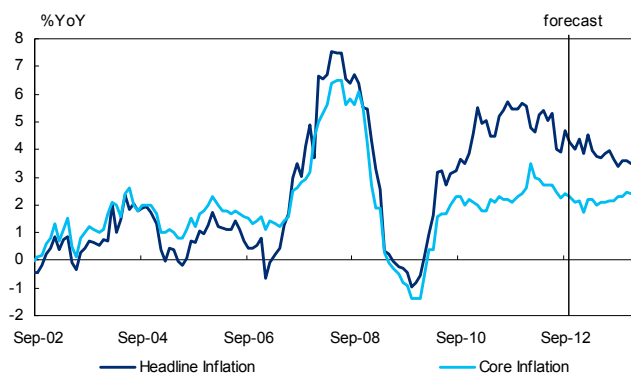
Figure 41. As COE premiums rise as a proportion of car prices, a given increase in COE premiums will have a larger impact on CPI inflation



Source: MAS Macroeconomic Review Oct 2012

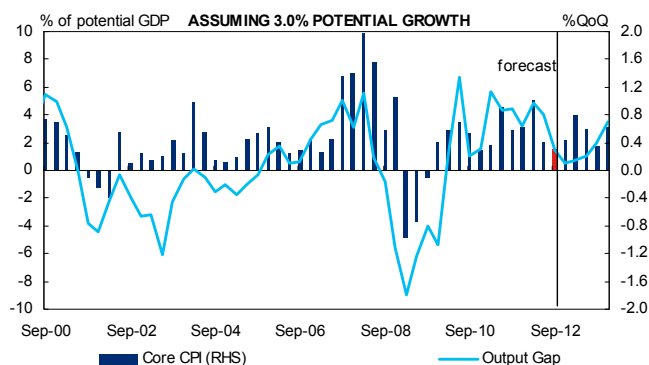
The reduction in COE supply will further lift private road transport inflation. In the first Nov auction, COE premiums for small cars surged S\$6200 (8.7%) to a record S\$77.2K on the back of strong demand, while premiums for large cars also jumped 7.7% to S\$92.4K. As the annual vehicle population growth rate will be further cut from 1% to 0.5% in Feb 2013, this implies more upward pressure on COE premiums. The introduction of the Carbon Emissions-based Vehicle Scheme next year could see greater competition for COEs. Moreover, with COE premiums now accounting for a larger proportion of car prices, an equivalent increase in COE premiums could bring about a larger increase in the headline inflation. Headline CPI inflation could stay elevated at 4% in early 2013, ending the year around 3.5% on base effects in housing and cars. However core inflation could pick up in 2H13 after falling in 1H13 as the output gap stabilizes.

Figure 42. Headline inflation could stay elevated at 4% in early 2013 while core inflation could pick up in 2H13 after falling in 1H13...



Source: CEIC, Citi Research

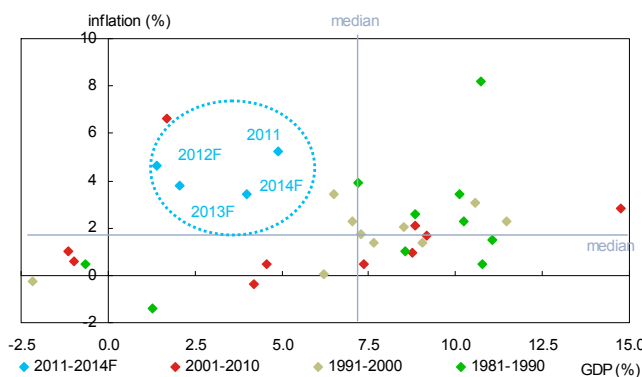
Figure 43. ...as the output gap stabilizes



Source: CEIC, Citi Research

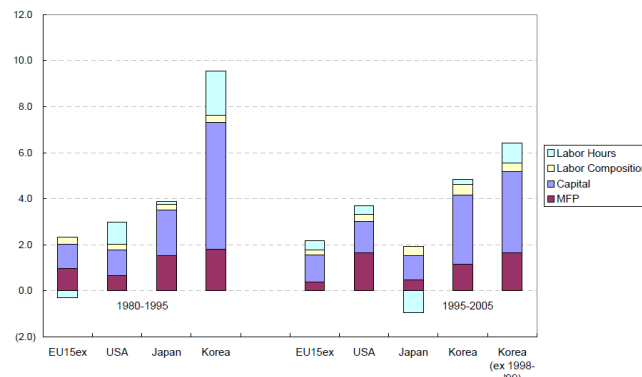
Until productivity growth is able to accelerate sufficiently to offset the slower labour force growth, the negative supply shock is likely to keep the growth inflation trade-off far starker than it was in the past. This has to a large extent been manifested in the last two years – whereas the 3-4% average growth rates in 2011-2012 would have in the past been associated with inflation rates of around 0-1%, this is now associated with far higher inflation rates of 3-4%.

Figure 44. Until productivity catches up, the growth-inflation trade-off will likely be far starker than it was in the past



Source: CEIC, Citi Research

Figure 45. Contributions to Value Added Growth, 1980-1995 and 1995-2005



Source: Hyunbae Chun, Hak K. Pyo and Keun Hee Rhee, "Total Factor Productivity in Korea and International Comparison" (2008), prepared for 2008 World Congress on National Accounts and Economic Performance Measures for Nations

If Singapore's recent experience and the experience of other developed countries serve as a guide, we suspect that raising productivity could be a long slog. The mixed track record of the productivity drive partly reflects weak cyclical demand conditions, which gives firms few incentives to invest in labour saving technologies given diminished returns on capital. At the same time, the tightening of immigration policies – while significant – has not yet been severe enough to induce switching to labour-saving technologies. Yet the simplest explanation could be that it is much harder to raise productivity from a relatively high base. According to DPM Tharman in the 2011 Budget speech, in the 1980s and 1990s, productivity growth of 3-5% from a productivity level only 20% that of the US was achieved through imports of foreign technologies, automation in labour intensive sectors and the education of a less-skilled workforce. By 2011, Singapore's labour productivity levels were already 60% that of the US (in PPP terms) and much of the low hanging fruit had already been plucked.

There are few historical precedents for Singapore's concerted productivity push in other developed economies. In many of these economies, the process of raising productivity evolved over a period of time, allowing firms and workers to gradually successfully respond to market incentives such as rising wage costs. Rather than this evolutionary change, Singapore's need to take on a "revolutionary" approach is the result of taking short cuts to growth by attracting MNCs and foreign workers instead of sufficiently building up what some commentators have termed "inherent capacity" over time. Heavy reliance on foreign imported labour has allowed Singapore to continue to reap demographic dividends well beyond what its natural fertility rates would have allowed, delaying the inevitable slowdown in growth that occurs once economies reach certain income levels.

Apart from the US, which successfully raised TFP growth in the late 1990s through the heavy adoption of IT during the dot-com boom, South Korea is often cited as another successful example of a country that shifted to a productivity driven growth model – but even here the evidence appears mixed. The earlier predominantly input-led and manufacturing-based growth model eventually culminated in declining efficiency of investments, falling TFP growth, and eventually the 1997/98 financial crisis. After the 1997 crisis, productivity growth revived largely due to strong productivity gains in ICT and manufacturing industries, a result of strong innovation and intensified competition associated with restructuring and globalization. But even so, much of the rise in Korea's TFP post-1997 was largely in manufacturing, with low productivity growth in services – perhaps mirroring to a large extent the weak productivity growth in the non-tradables sector in Singapore. Moreover, economy-wide TFP growth was not substantially different than during the pre-1997 crisis period, even though the contribution to overall growth was far larger.

Monetary and Fiscal Policies to Maintain Tightening Bias

With inflation likely to stay above historical averages, macroeconomic policy will likely remain on a tightening bias. The MAS's decision to refrain from reducing the slope in Oct suggests the hurdle for policy easing remains high. Barring large downside cyclical growth surprises beyond the current 1-3% official growth forecast for 2013 that would cause the output gap to turn negative, the bar for MAS to ease policy would remain high for two reasons.

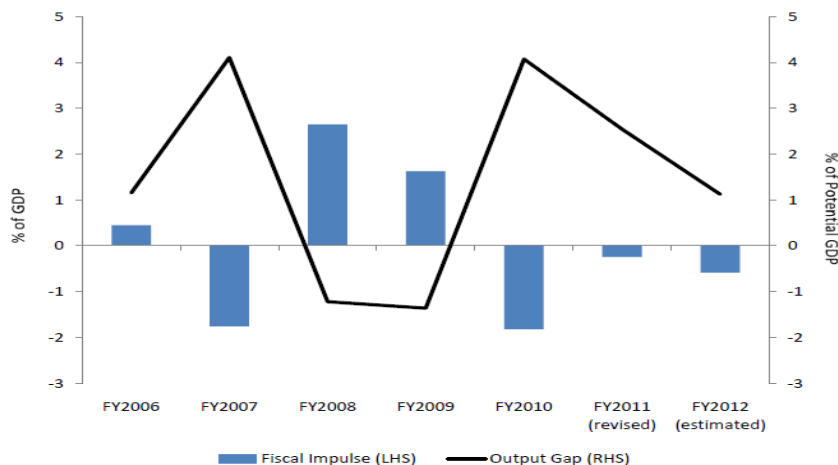
First, MAS recognizes that it needs to accommodate faster medium term real appreciation pressures, which will be accommodated via a mixture of tolerating somewhat higher domestic inflation than in the past and a faster pace of NEER appreciation, but not an exclusive reliance on either. Policymakers are willing to tolerate somewhat higher wage push inflation, provided this does not un-anchor

inflation expectations such that the rise in headline inflation outstrips nominal wage growth, resulting in an erosion in real incomes that runs against the over-arching objective of economic restructuring. Policymakers will also be keenly aware of the signaling effect of high headline inflation and the “modest and gradual SGD appreciation policy” on the public’s inflation *expectations*. The “new normal” slope of the SGD NEER policy band may thus be 3% rather than the 2% in the 2004-2007 period – with the 2.5% slope below this “new normal” slope of 3%, the relatively accommodative policy setting gives less room to ease further.

Second is the need to look past shorter and shallower cyclical fluctuations to avoid volatility in monetary policy decisions, which could exacerbate volatility in economic outcomes. The experience since early 2011 – with two successive reversals in policy direction (tightening in Apr 2011 followed by easing in Oct 2011 and tightening in Apr 2012) – was no doubt due to the extreme difficulty in forecasting business cycles that have become shorter, shallower and less predictable in recent years, with less clearly defined peaks and troughs and more hesitant and patchy growth profiles along a generally slower growth path. Against this vastly changed backdrop, the tendency of setting policy by mapping the NEER levels to anticipated GDP levels may have introduced unnecessary volatility in policy settings. Policy could thus place a greater weight on structural as opposed to cyclical considerations.

With the output gap still positive, the Budget will likely maintain a mild contractionary stance and stay focused on restructuring. A positive output gap was the rationale behind the negative fiscal impulse and contractionary stance of Budget 2012. This reveals an important facet of policy thinking – *notwithstanding the cyclical slowdown in demand to below potential growth in 2011, policymakers had viewed the supply-side constraint in the economy as being so severe that the problem remained one of too much growth in demand rather than insufficient growth.*

Figure 46. Fiscal Impulse and Output Gap



Source: MoF Budget Highlights FY2012

Indeed, the FY12 fiscal stance could be even more contractionary than anticipated in the Budget, as an overshoot in revenues could imply a larger surplus than budgeted for. Operating revenue in the first half of the fiscal year (i.e. till Sep-2012) stood at S\$29.25bn or around 55% of the full year Budget target of S\$53.1bn. However, in the last 5 years, on average only 53% of the full year

revenues were collected in the first half of the fiscal year. Extrapolating historical trends would therefore suggest full year operating revenues of S\$55bn – a full S\$2bn more than in the Budget. With total expenditures year to date lower than historical patterns and Budget estimates, this would point to a primary fiscal surplus closer to S\$5.8bn, double the Budget estimate of S\$2.8bn – consistent with the recent track record of actual fiscal outturns outperforming conservative Budget estimates.

Given the Budget balanced rule, the government will probably aim to run another primary surplus of close to 1-1.5% of GDP and possibly another basic and overall surplus. The Singapore government has a self-imposed fiscal constraint requiring it to run a *balanced budget* over the course of the government's term. Breaching this rule requires the consent of the President to unlock the fiscal reserves to finance fiscal deficits. The balanced budget rule incentivizes the government to run fiscal surpluses in the initial years of a new government's term, to save its bullets for a pre-election Budget the next term. Even during the recession year in 2008 – which was the second year of the previous government's term – the government still ran a small overall surplus of 0.1% of GDP to save its bullets for a deeper downturn and the pre-election Budget deficit in FY11.

Figure 47. Overall Fiscal Position, FY2007 to FY2012E

S\$ Bn	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012E			
	Actual	Actual	Actual	Actual	Actual	Budget	YTD	Historical YTD as % of Full Year	Implied Full Year
Operating Revenue	40.4	41.1	39.5	46.1	51.1	53.1	29.3	53.0	55.2
Corporate and Personal Income Taxes	14.9	17.1	16.8	17.2	19.0	21.2	12.4	63.8	19.5
Motor Vehicle Taxes	2.2	1.8	1.9	1.9	1.9	1.6	0.9	48.3	1.9
GST	6.2	6.5	6.9	8.2	8.7	9.2	4.5	50.7	8.8
Stamp Duty	3.7	1.4	2.4	3.3	3.2	2.5	1.7	55.1	3.1
Property Taxes	2.4	2.9	2.0	2.8	3.9	3.7	1.5	36.9	4.1
Betting Taxes	1.7	1.8	1.7	2.3	2.4	2.4	1.1	46.6	2.4
Others	9.3	9.6	7.9	10.5	12.1	12.5	7.1		15.4
Total Expenditure	33.0	38.1	41.9	45.3	46.6	50.3	19.9		49.5
Operating Expenditure	26.0	28.7	30.9	33.3	35.2	37.5	14.2	38.8	36.5
Development Expenditure	7.0	9.4	11.0	12.1	11.4	12.8	5.7	44.1	13.0
Primary Fiscal Balance	7.4	3.0	-2.3	0.7	4.5	2.8	15.1		5.8
Less: Special Transfers	2.1	7.1	5.5	7.1	8.6	8.9			8.9
Special Transfers Excluding Top-Ups to Endowment and Trust Funds	1.3	4.1	4.1	1.5	3.1	1.5			1.5
Basic Balance	6.1	-1.1	-6.4	-0.8	1.4	1.3			4.3
Top-ups to Endowment and Trust Funds	0.8	3.0	1.4	5.6	5.5	7.4			7.4
Add: Net Investment Income Contribution	2.4	4.3	7.0	7.4	7.9	7.3			7.3
Overall Fiscal Surplus/Deficit	7.7	0.2	-0.8	1.0	3.8	1.3			4.2
As % of GDP	2.8	0.1	-0.3	0.3	1.2	0.4			1.3
FISCAL BALANCE 1*: + all Capital Receipts (incl. Sales of Land) + Interest and Investment Income	32.8	26.2	4.8	23.0	32.8	22.2			
as % of GDP	12.0	9.9	1.7	7.2	10.0	7.0			
- Exclude: Sales of Land	13.0	7.7	4.0	14.5	18.4	12.9			
FISCAL BALANCE 2*: + Capital Receipts + Interest and Investment Income - Sales of Land	19.8	18.5	0.8	8.5	14.4	9.4			
as % of GDP	7.2	7.0	0.3	2.7	4.4	2.9			
General Government Balance**	32.9	14.9	-2.0	20.1	31.3	22.3			39.9
as % of GDP	12.1	5.6	-0.7	6.3	9.5				

* Fiscal Balances 1 and 2 use revenue and expenditure figures provided in the Revenue and Expenditure Estimates, which may be different.

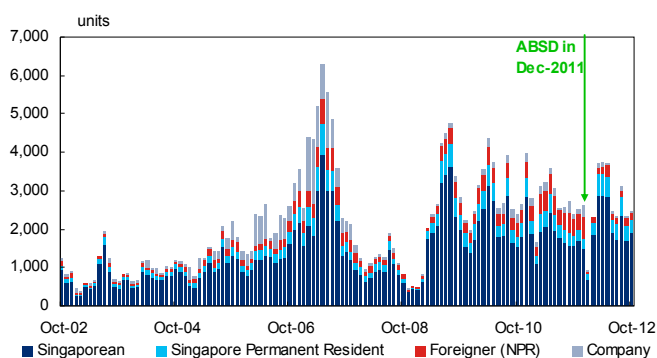
** General Government Balance only available up to FY2010 and is from the Accountant-General's Department. It takes into account lending and repayments and some differences in revenue and expenditure calculations.

Source: Ministry of Finance, CEIC, Citi Research

As with recent Budgets, the thrust of the Budget will likely be to push ahead with economic restructuring. Likely coming after Parliament's vote on population policy in January, a key focus of the Budget will surely be on tighter foreign worker policy. Hints were already dropped in the FY12 Budget, as the Finance Minister mentioned that "further increases in foreign worker levy beyond Jul 2013 may be considered depending on growth of the foreign workforce in the next 12 months". With job creation at 83.8K in the first 3 quarters of 2012 not substantially different from the 85K jobs created in the same period in 2011, this may indicate continued dependence of foreign workers. Foreign worker levies could be raised substantially, alongside further possible cuts in foreign worker quotas. Tighter criteria on Employment Pass holders could also be introduced on top of recent measures. In addition, further enhancements to the Productivity and Innovation Credit (PIC) could be introduced, alongside tax incentives to encourage firms to venture abroad. Finally, along the lines of Budget 2012, more measures to encourage firms to hire local and older workers, enhancements to Workfare, and greater subsidies and infrastructure spending on healthcare and transport are likely.

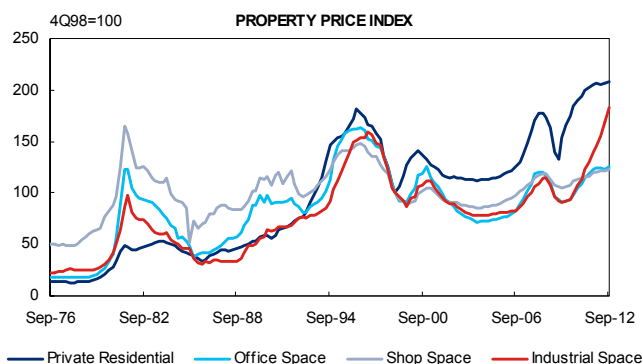
In the property market, policy risk will likely to persist in the residential segment, though the slowdown in property price increases would suggest a more incremental and calibrated approach to tightening going forward. Any new measures will continue to be aimed at curbing investment demand amidst continued tightness in supply for genuine home-owners. Recent cooling measures to limit mortgage tenors to 35 years have only had limited impact so far, with press reports showing little sign of a falling off in developer sales since the measures were launched. There may moreover be a risk that the Hong Kong government's imposition of a 15% buyer stamp duty on foreigners (vs 10% for Singapore) could divert some foreign demand to Singapore, negating some of the earlier decline in foreign buying from the ABSD imposition in Dec 2011 – which saw foreign buying fall from almost 20% of overall transactions to about 6%.

Figure 48. The Additional Buyer Stamp Duty imposed in Dec 2011 has succeeded in reducing the proportion of foreign buyers to about 6%



Source: URA, Citi Research

Figure 49. Residential property cooling measures achieved relative stability in home prices but pushed investors to the industrial space



Source: CEIC, Citi Research

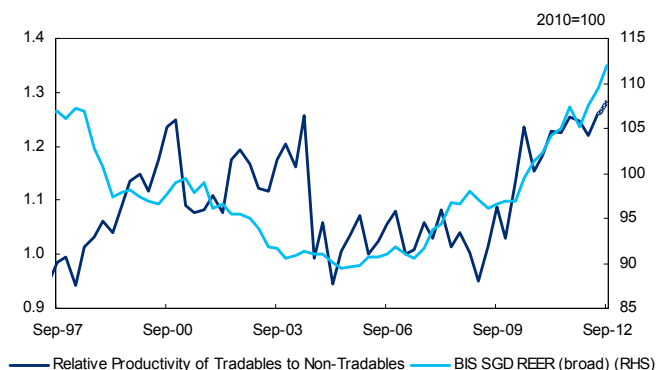
That said, property analyst Adrian Chua notes that with the sale of commercial and industrial strata units hitting highs, future round of policy measures could potentially target the non-residential segment in order to level the overall financial prudence regime with what has already been introduced in the residential segment. Already, investment demand in the industrial properties – especially factories – pushed up factory prices by a record 10.1%QoQ in 3Q, threatening to hurt manufacturing competitiveness further. Adrian thinks that given the relative price stability that has been achieved in the overall residential market, it

makes little sense to tilt the policy imbalance further by focusing on the residential sector. A blanket policy move (impacting all sectors) is also a possibility, though this still means that the policy regime change would be more impactful on the non-residential segment. A policy that is targeted towards the non-residential segment would have minimal impact on the big-cap developers, as the strata sale of nonresidential units does not form a part of their current business models³.

Faster Real Exchange Rate Appreciation May Entail Adjustment Costs and Catalyze Regionalization

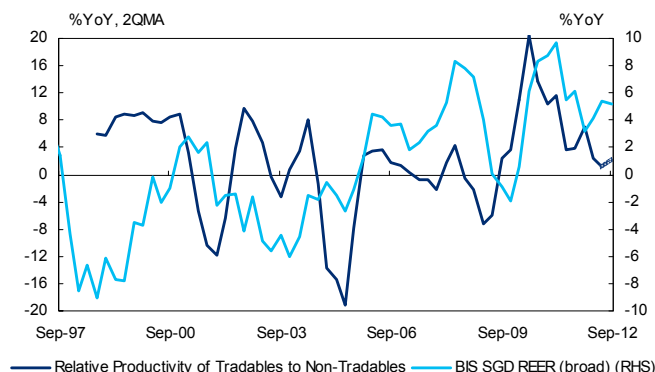
Higher domestic inflation and unit labour costs, and the monetary policy response via the a stronger SGD policy, will result in a faster rate of real exchange rate appreciation and adjustment costs for companies in a variety of industries. Already, the real exchange rate has appreciated nearly 18% in the last 2 years since the MAS tightened policy. The REER is playing “catch up” after being “suppressed” earlier in the decade as CPF cuts and a liberal immigration policy then had a disproportionate impact on non-tradables labour costs, causing the REER to weaken. The subsequent tightening of immigration policies, higher CPF rates, and the widening of the productivity gap between tradables and non-tradables have since allowed the REER to catch up and gain lost ground.

Figure 50. The widening productivity differential between the tradables and non-tradables sector has been associated with REER catch up, especially in the 2010 period



Note: 3Q12 is Citi estimate
Source: CEIC, Citi Research

Figure 51. Faster rate at which the tradables to non-tradables productivity has been widening has resulted in a faster medium term REER appreciation



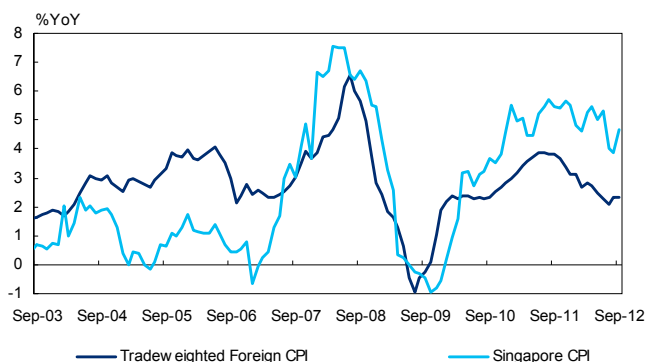
Note: 3Q12 is Citi estimate
Source: CEIC, Citi Research

With productivity growth – including in the non-tradables sector – likely to be weak amidst the cyclical slowdown, coupled with faster wage increases, the resulting upward pressures on unit labour costs could spill over into inflation and faster real exchange rate appreciation pressures going forward. In addition to autonomous wage pressures coming from the tightening of labour supply, labour costs will be further raised by recent measures designed to substitute for a minimum wage regime. This is most evident in the cleaning sector, where a Progressive Wage Model for cleaning companies was introduced, with S\$1k/month seen as the entry level basic wage for cleaners – a substantial jump from the S\$675-950/m that such workers currently earn. That there is now a discussion of minimum wages – previously considered taboo – is in itself a significant shift in the tone of the debate within policy circles. Regardless of whether a formal minimum

³ Adrian Chua and Ivan K Lim, [Singapore Property - Prefer S-REITs to Developers, Favour Industrial and Retail REITs](#), 15 October 2012

wage is actually adopted, the cumulative impact of such deliberate policy measures, alongside the autonomous upward pressures on labour costs from tighter supply and higher foreign worker levies, is a rise in Singapore's unit labour costs and persistently higher inflation relative to its trading partners.

Figure 52. Domestic inflation has exceeded foreign tradeweighted inflation for most of the past three years, reversing the pattern of the past decade



Source: Haver, Citi Research

Figure 53. Overall unit labour costs level (index SG=100; lower means country is gaining cost competitiveness relative to Singapore)

	2001	2005	2010	2011	2012F
China	63	80	86	87	90
Hong Kong	72	59	42	38	37
India	89	54	120	112	113
Indonesia	38	57	58	57	57
Korea	100	162	108	104	104
Malaysia	48	48	43	42	42
Philippines	34	36	37	36	36
Singapore	100	100	100	100	100
Taiwan	78	81	53	51	49
Thailand	41	46	48	47	46
Vietnam	40	43	36	35	34

Source: Economist Intelligence Unit, Citi Research

REER appreciation is likely to reshape the industrial landscape, as industries which had thrived on a lower cost structure may have to restructure and raise productivity, consolidate, or relocate altogether. The extent to which profit margins in various industries are hit by a stronger real exchange rate varies with the export share of final demand, import content of production and labour cost share of overall production.

Our recent [Singapore Macro View - Who Gets Hit Harder by Real Exchange Rate Appreciation?](#) found that the relative impact of REER appreciation on various industry groups can be summarized as follows:

- It is not just the manufacturing that could be hit by real appreciation, but also many export-oriented services such as tourism, which are more labour-intensive than manufacturing and which may not enjoy the natural hedge from a high import content of production (which manufacturing enjoys).
- Within tradables services, financial services and wholesale trade are more sensitive to the hit from real appreciation.
- Within manufacturing, transport engineering (including ship repair, marine and offshore sectors), electrical machinery, electrical and textiles subsectors are most adversely affected by the combination of higher wages and stronger exchange rate. Precision engineering, electrical products and metal works could also be hit harder. In contrast, food manufacturing and chemicals appear less affected, given high import content and, in the case of chemicals, low labour intensity. Electronics appears to be somewhere in the middle, with relatively low labour content and high import content mitigating the impact of real appreciation.
- Non-tradables services is comparatively better placed to cope with real appreciation – while wage increases and lower productivity growth will hurt the sector harder (especially the government and social services sector), this is to some extent offset by the impact of a stronger exchange rate in lowering import costs and therefore margin pressures.

- The construction sector could be a net beneficiary from the impact of a strong nominal exchange rate lowering import costs due to its high import content, which could potentially outweigh the negative impact on profits from higher labour costs.

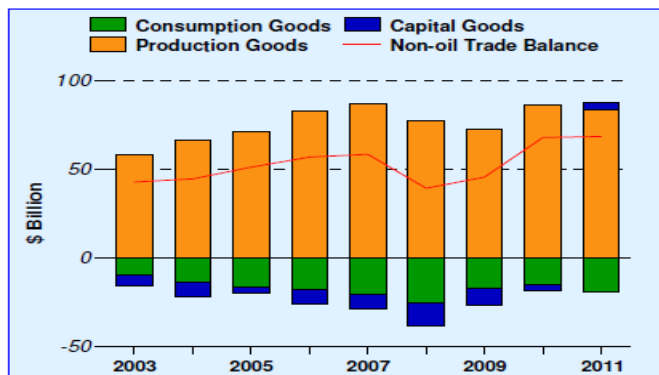
Figure 54. Net Exports and Wages as % of Gross Operating Surplus

	Net Exports as % of GOS	Wages as % of GOS	Simple Average of Net Exports and Wages as % of GOS
AGRICULTURE AND FARMING	48.9	102.2	75.6
MANUFACTURING	129.5	53.8	91.6
Food and beverage related manufacturing	33.9	104.3	69.1
Textiles and paper products	109.9	125.3	117.6
Chemicals, pharmaceutical and related	119.7	24.5	72.1
Rubber, plastics, glass and metals	113.2	109.6	111.4
Electronics	138.0	54.5	96.3
Industrial machinery	147.1	94.2	120.6
Electrical	145.4	98.1	121.7
Transport engineering (including oil rigs)	178.8	100.4	139.6
Other manufacturing	120.4	57.3	88.8
UTILITIES	3.5	28.7	16.1
CONSTRUCTION	-215.3	195.6	-9.9
TRADABLES SERVICES (services where exports >50% of final demand)	107.2	76.3	91.8
Wholesale trade	136.6	57.5	97.1
Transport and communications services	102.6	56.8	79.7
Financial services	103.4	104.1	103.8
Professional and business services	72.9	101.6	87.2
NON-TRADABLES SERVICES	-30.6	140.7	55.0
Retail trade	1.1	87.3	44.2
F&B, accommodation and tourism related services	-25.3	107.7	41.2
Government, social and recreational services	-59.9	227.1	83.6
Other domestically oriented services	-8.5	61.2	26.3

Source: Singapore Department of Statistics, Citi Research

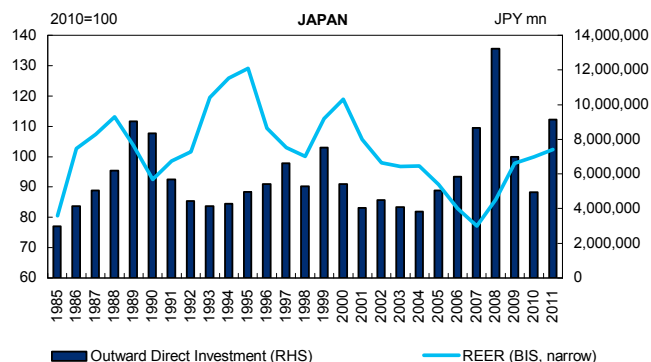
REER appreciation can be a powerful catalyst for restructuring to move up the value-added chain over time and the relocation of more labour-intensive/exchange rate-sensitive services. Hence manufacturing has had to continuously re-invent itself, which is reflected in improving terms of trade and the changing nature of Singapore's trade balance (including becoming a net exporter of capital goods). The flip side is that REER appreciation could force the relocation of affected manufacturing and other tradables sectors overseas to free up scarce domestic resources for more productive uses. This acceleration in outward direct investments was also experienced by Japan in the mid-1980s after the real exchange rate appreciation experienced post the Plaza accord.

Figure 55. The nature of Singapore's trade balance is changing (including becoming a net exporter of capital goods)



Source: MAS Macroeconomic Review Apr 2012

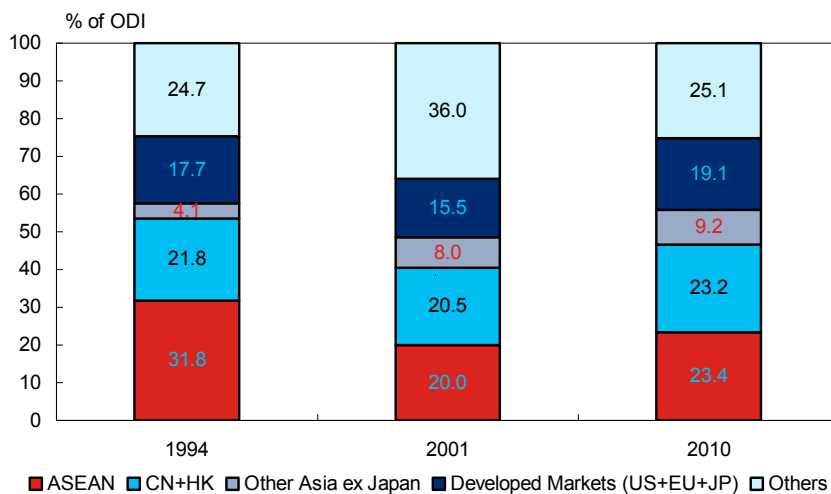
Figure 56. Acceleration in outward direct investments was also experienced by Japan in the mid-1980s



Source: CEIC, Citi Research

Thus manufacturing, especially transport engineering, segments of electrical and industrial machinery, and even food manufacturing, may face greater pressures to relocate overseas. Where Singapore Inc chooses to relocate to – be it China and ASEAN – will very much depend on how the relative cost structures stack up compared to perceived market potential in each of these markets. While we have classified healthcare and education services within the non-tradables sector, we would not be surprised if labour-driven cost increases divert demand towards neighboring countries, including Iskandar, especially when improved connectivity makes it easier for locals to access such services.

Figure 57. Share of Singapore's Outward Direct Investments by Destination



Source: Singstat, Citi Research

Key Economic Data and Forecasts

Figure 58. Singapore - Key Economic Data and Forecasts

	2006	2007	2008	2009	2010	2011	2012E	2013F	2014F
Real Sector									
Real GDP (%YoY)	8.8	8.9	1.7	-1.0	14.8	4.9	1.4	2.0	4.0
Domestic Demand ex Inventory (%YoY)	7.6	9.5	6.9	-0.5	7.3	3.4	2.9	2.4	3.3
Real Consumption: Private (%YoY)	5.0	6.8	3.3	0.1	6.5	4.1	2.0	2.9	3.2
Real Gross Fixed Capital Formation (%YoY)	13.6	17.4	13.0	-2.9	7.0	3.3	6.2	1.6	3.5
Consumer Prices (%YoY)	1.0	2.1	6.6	0.6	2.8	5.2	4.6	3.8	3.4
GDP (USD bn)	145.9	177.9	190.2	186.2	227.9	260.0	279.7	306.1	331.9
GDP Per Capita (USD)	33,155	38,764	39,305	37,329	44,889	50,157	52,651	56,652	60,353
Unemployment Rate (%)	2.7	2.1	2.3	3.0	2.2	2.0	2.2	1.9	1.8
External Sector									
Exports (%YoY, US\$)	16.3	11.2	13.4	-18.7	28.7	15.7	0.3	3.0	2.7
Imports (%YoY, US\$)	18.4	10.6	22.4	-23.0	27.8	17.5	3.0	3.0	1.5
Trade Balance (US\$ bn)	50.2	57.1	41.7	47.3	63.1	67.5	58.1	59.8	66.0
Current Account (% of GDP)	24.4	25.8	13.8	16.2	24.4	21.9	16.2	13.9	13.3
International Reserves ex. Gold (US\$ bn)	136.3	163.0	174.2	187.8	225.8	237.7	254.0	260.0	270.0
USD-SGD (period average)	1.59	1.51	1.41	1.45	1.36	1.26	1.24	1.20	1.19
Other									
3M Interbank Rate (% , average)	3.5	2.7	1.3	0.7	0.6	0.4	0.4	0.3	0.4
10-year SGS Yield (% , average)	3.4	2.9	2.8	2.4	2.4	2.1	1.5	1.4	2.2
Fiscal Balance, calendar year basis (% of GDP)	9.1	11.1	9.0	-1.6	0.5	1.5	1.3	1.0	1.0
Population (persons million)	4.4	4.6	4.8	5.0	5.1	5.2	5.3	5.4	5.5

Source: CEIC, Citi Research estimates

Figure 59. Interest and Foreign Exchange Rate Forecasts

	15-Nov	4Q12	1Q13	2Q13	3Q13	4Q13	In 3M	In 6M	In 12M
SG 3-Month Interbank Rate	0.38	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
10-Year SGS	1.32	1.30	1.30	1.40	1.60	1.70	1.30	1.36	1.66
USD-SGD	1.22	1.22	1.21	1.20	1.20	1.20	1.21	1.20	1.20
US Fed Fund Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
10-Year Treasuries	1.50	1.65	1.75	2.00	2.25	2.55	NA	NA	NA

Source: Reuters, Citi Research estimates

Appendix A-1

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