TABLES

Table 1: Number of Patent Applications over the period 1980-2014							
Time Period\Country	China	India	Indonesia	Malaysia	Philippines	Thailand	Pakistan	Bangladesh
1980-85	3113.1	1075.4	24.4	7.1	100.0	38.5	33.5	42.5
1986-90	4495.9	1043.0	73.6	69.8	91.0	64.4	25.8	25.4
1991-95	10136.0	1371.4	45.8	163.8	161.6	110.4	22.0	50.6
1996-00	15804.6	2049.2	104.2	203.4	149.8	445.4	35.6	43.8
2001-05	57176.8	3446.4	221.8	402.6	158.6	732.2	77.2	51.6
2006-10	198423.8	6904.4	376.2	896.8	201.2	1025.2	125.2	46.4
2011-14	614303.3	10275.8	624.0	1185.5	225.5	1131.3	121.3	52.0

Source: Authors' computations from WDI (2017).

Table 2 : Expected Signs of Independent Variables Dependent Variable: *Labour Productivity of sector j* ($Prod^j$)	
Variable	*Expected Sign*
k^j	+
$Tech$	+
HK	+
G	+/-
$Inst$	+
$TradeOpen^j$	+
$Finopen$	+
$Prod^k$	+
π^j	-/+

Source: Authors' own elaborations.

Table3: Definitions of variables and sources of data[1]		
Variable	**Description**	**Source of data**
GDP^m	**Real GDP is measured in constant prices using 2011 PPP USMn\$**	**APO 2017 database**
$Capital\ stock(K)^m$	**Capital Stock measured in 2011 PPP USMn\$ as described in Appendix A.**	**Calculated taking data from PWT9.0 and APO database.**
$Employment(L)^m$	**Total Persons engaged in thousand persons.**	**APO 2017 database**
$Technology(Tech)$	Patent Stock: Calculated from Patent Applications (Residents) using Perpetual Inventory Method(PIM) using a depreciation rate of 15%.The formula for which is as follows: $$K_t = K_0 + (1-\delta)I_t$$ $K_0 = \frac{I_0}{g+\delta}$ where g is the average growth rate of patent applications over the entire period for which the data was available[2]. R&D stock as a percentage of GDP: R&D calculated from R&D expenditure using PIM.	Data for Patent Applications for all countries except China taken from WDI (2016) indicators while for China data was kindly provided by Prof. Madsen. Data for R&D expenditure taken from OECD stan database.

[1] Variables in bold face refer to sector-specific variables.

[2] The depreciation rate of 15% was taken from literature. See, for instance, Ang & Madsen (2013) .We also calculated patent stock using a higher depreciation rate of 20% and used that in the model. The results were robust to different depreciation rates.

Government Size(G)	General government final consumption expenditure as a percentage of GDP	WDI(2017)
Human capital(HK)	1. Gross enrolment in secondary education 2. Gross Enrolment in Tertiary Education	UNESCO (2016) indicators for all countries except for Singapore and Taiwan. For Singapore and Taiwan, data was drawn from their respective national sources. For some countries, there were two to three missing values which were interpolated using log-linear method.
Institutional Quality(Inst)	Economic Freedom Index.	Fraser Institute.
Trade Openness^m	**Exports and Imports of sector m/Gross Value Added of sector m**	**Exports and Imports data from UNCTAD and WDI database while Gross Value Added taken from APO database.**
Financial Openness(Finopen)	1. Gross Financial Assets and Liabilities as a ratio of GDP 2. Gross Assets as a ratio of GDP 3. FDI liabilities as a ratio of GDP 4. FDI and equity liabilities as a ratio of GDP 5. Debt liabilities as a ratio of GDP 6. De facto Measure of Financial Globalization 7. De jure Measure of Financial Globalization	First five Measures taken from Lane-Milessi and Ferretti (2017) database. Last two taken from KOF Swiss Economic Institute downloadable from https://www.kof.ethz.ch/

Note: Bold Face infictaes sectoral variables.

Emerging and Developing Asia-Pacific Economies

Table 4a: Panel Cointegration Tests Results: Developing Asia-Pacific						
Pedroni'statistics\ Sector	Industry	Aggregate Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
Panel ADF	-1.15	-2.05***	-1.47***	-1.54***	-2.11***	-2.77***
Group ADF		-1.71***		-1.72***	-2.58***	-3.51***
Panel PP	-1.27*		-1.68***		-2.30***	-2.01***
Group PP	-1.15				-2.47***	-2.32***

Note: ****,** and * refer to significance at 1%, 5% and 10% repectively.*

Table 4b: Group-Mean FMOLS elasticities: Developing Asia-Pacific						
Dependent variable: $Prod^m$						
Sector\ Variable	Industry	Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
K/L^m	.54***	.23***	.47***	.63***	.31***	.52***
HK	.17***	.11***	.16*		.05***	
$Tech$		.003(.26)				
G	.14***		.31***			
$Inst$	.15***	.13***	.27***	.48***	.14***	.08(1.26)

	Industry	Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
$Tradeopen^m$		.03*			.08***	.005(0.61)
$Finopen$		.036***		.063(1.35)	.09***	.08***
Openness	.006		.032***			
$Prod^n$	.51***		.26***	.16***	.09**	.09***

Notes: Models for all the sectors include time dummies so as to control for any time-related common factors across countries in the panel. ***,** and * refer to significance at 1%, 5% and 10% respectively.

Table 4c: Panel Cointegration Results : 1997-2014					
Pedroni'statistics\ Sector	Industry	Aggregate Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
Panel ADF	-3.77***	-2.24***	-3.32***	-2.05***	-1.12	-2.43***
Group ADF	-4.69***	-2.09***	-3.83***	-2.11***		-2.06***
Panel PP	-2.14***	-1.40***	-4.43***	-2.62***	-1.22	-4.00***
Group PP	-2.96***		-4.91***	-2.96***	-1.87***	-4.53***

Notes: All the models have been estimated without including a trend except for services (aggregate) sector However, models for all the sectors include time dummies so as to control for any time-related common factors across countries in the panel. ***,** and * refer to significance at 1%, 5% and 10% respectively.

Table 4d: Group-Mean FMOLS Elasticities:1997-2014					
Dependent variable: $Prod^m$					
Sector\ Variable	Industry	Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
K/L^m	.41***	.44***	.68***	.72***	.38***	.67***
HK	.24***		.25***		.27***	
$Tech$	.10***	.034***	.042***		.014*	.023*
G		-.09***	.092***			
$Inst$	.11***		.23***	.079*	.22***	
$Tradeopen^m$		.037***		.011*	.09***	.03***
$Finopen$		.04***		.011**	.09***	-.068***
Openness	.02***		.002			
$Prod^n$	.10***	.26***	.24***	.035*	.025*	.11***

Notes: All models have been estimated with common time dummies.***,** and * refer to significance at 1%, 5% and 10% repectively Note: All models have been estimated with common time dummies.***,** and * refer to significance at 1%, 5% and 10% repectively.

Developed Asia-Pacific Economies

Table 5a: Panel Cointegration Tests Results:1980-2014					
Pedroni'statistics\ Sector	Industry	Agg Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
Panel ADF	-1.39***		-2.54***	-3.17***	-2.59***	-1.59***
Group ADF	-3.44***		-3.96***	-3.27***	-3.04***	-2.37***
Panel PP	-1.98***		-2.33***	-3.65***	-2.20***	-3.14***
Group PP	-3.57***	-1.31***	-3.57***	-3.59***	-3.11***	-3.38***

Note: All models have been estimated with common time dummies.***,** and * refer to significance at 1%, 5% and 10% repectively.

Table 5b: GROUP-MEAN FMOLS ELASTICITIES:1980-2014
Dependent variable: $Prod^m$

Sector\ Variable	Industry	Services (Agg)	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
K/L^m	.48***	.17***	.63***	.43***	.56***	.70***
HK	.12***	.16***	.20***	.11***	.37***	.22***
$Tech$	.06***		.08***	.03***	.012*	.01***
G	-.08***	-.13***	-.37***	-.43***	-.35***	-.20***
$Inst$	.32***		.55***		.86***	.15(1.55)
$Tradeopen^m$	.15***	.04***	.07***	.06***	.099***	.07***
$Finopen$						
$Prod^n$	.35***	.13***	.15***	.17***		.052***

Note: All models have been estimated with common time dummies.***,** and * refer to significance at 1%, 5% and 10% repectively.

Tale 5c: Panel Cointegration Test Results:1997-2014					
Pedroni's statistics\ Sector	Industry	Aggregate Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
---	---	---	---	---	---	---
Panel ADF	-2.14***	-2.54***	-1.88***	-4.32***	-0.95	-1.82***
Group ADF	-2.77***	-2.57***	-2.77***	-5.55***	-1.89***	-1.17
Panel PP	-4.12***	-2.79***	-2.18***	-5.37***	-2.05***	-3.58***
Group PP	-5.17***	-4.03***	-3.36***	-7.79***	-3.32***	-3.39***

Note: The models for Industry and Financial Intermediation sectors include a trend while models for other sectors don't include a trend. All the models include common time dummies and ***,** and * refer to significance at 1%, 5% and 10% repectively.

Table 5d: Group-Mean FMOLS Elasticities:1997-2014					
Dependent variable: $Prod^m$					
Sector\ Variable	Industry	Services (Agg)	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
---	---	---	---	---	---	---
K/L^m	.51***	.13***	.55***	.46***	.44***	.73***
HK	.11***	.009*	.15***		.04*	.09***
$Tech(Patents)$	.09***	.06***	.07***	.19***	.11***	.06***
G	-.08***	-.13***	-.27***	-.31***	-.42***	-.15***
$Tradeopen^m$	.11***	.06***	.028*			.10***
$Finopen$	.04***	.02***	.045***	.035***		.02***
Openness					.10***	
$Prod^n$	.62***	.012*	.092*	.03*	.04***	.09***

Note: All the models have been estimated without a trend but with common time dummies that control for any time-related common factors across countries in the sample. ****,** and * refer to significance at 1%, 5% and 10% repectively*

Table 5e: Panel Cointegration Test Results :1997-2014					
Pedroni's statistics\ Sector	Industry	Aggregate Services	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
---	---	---	---	---	---	---
Panel ADF	-1.67**	-2.07**	-2.41***	-1.99**		
Group ADF	-2.88***	-2.28***	-2.47***	-3.34***	-1.40*	
Panel PP	-3.65***	-2.83***	-3.55***	-3.62***		-1.26*
Group PP	-4.52***	-3.24***	-4.03***	-8.52***	-2.07**	

Note: All these models have been estimated without trend but including time dummies. ***,** and * refer to significance at 1%, 5% and 10% repectively. Measure of technological progress considered is R&D stock.

Table 5f: Group-Mean FMOLS Elasticities:1997-2014

	Dependent variable: $Prod^m$					
Sector\ Variable	Industry	Services (Agg)	Manufacturing	Distributive Trade	Transport and Communication	Financial Intermediation
K/L^m	.49***	.14***	.56***	.41***	.45***	.75***
HK	.29***		.29***			.08***
$Tech$	.10***	.006	.24***	.31***	.11***	.19***
G	-.12***	-.12***	-.22***	-.41***	-.25***	-.14***
$Tradeopen^m$	.09***	.04***	.05***	.03***		.02***
$Finopen$	.04***	.015***	.08***	.013***		
Openness					.032*	
$Prod^n$	.62***	.12***	.53***	.15***	.12***	.11***

*Note: All these models have been estimated without a trend but with time dummies except for aggregate services sector for which the model doesn't include time dummies. The measure of technological progress is R&D stock in the above results. ***,** and * refer to significance at 1%, 5% and 10% repectively. Measure of technological progress considered is R&D stock.*

Table 6a: Summary of results across sectors (Developing Asia-Pacific)							
$Variable \backslash Sector$	Ind	Mfg	$Agg.Serv$	$Dis.Trade$	$Trans \& Comm.$	$Fin.Intermediation$	Expected sign
k^j	+	+	+	+	+	+	+
HK	+	+	+		+		+
$Tech$							+
G	+	+					+/−
$Inst.$	+	+	+	+	+	+	+
$Tradeopen^j$	+	+	+		+	+	+
$Finopen$	+	+	+	+	+	+	+
$Prod^k$	+	+	+	+	+	+	+

Note: Bold face indicates significance at 10% level or more.

Table 6b: Summary of results across sectors (Developed Asia-Pacific)							
$Variable \backslash Sector$	Ind	Mfg	$Agg.Serv$	$Dis.Trade$	$Trans \& Comm.$	$Fin.Intermediation$	Expected sign
k^j	+	+	+	+	+	+	+
HK	+	+	+	+	+	+	+
$Tech$	+	+	+	+	+	+	+
G	−	−	−	−	−	−	+/−
$Inst.$	+	+	+	+	+	+	+
$Tradeopen^j$	+	+	+	+	+	+	+
$Finopen$							+
$Prod^k$	+	+	+	+	+	+	+

Note: Bold face indicates significance at 10% level or more.

FIGURES

Figure 1a: Sectoral Shares in GDP of Emerging and Developing Asia-Pacific Economies over 1980-2014
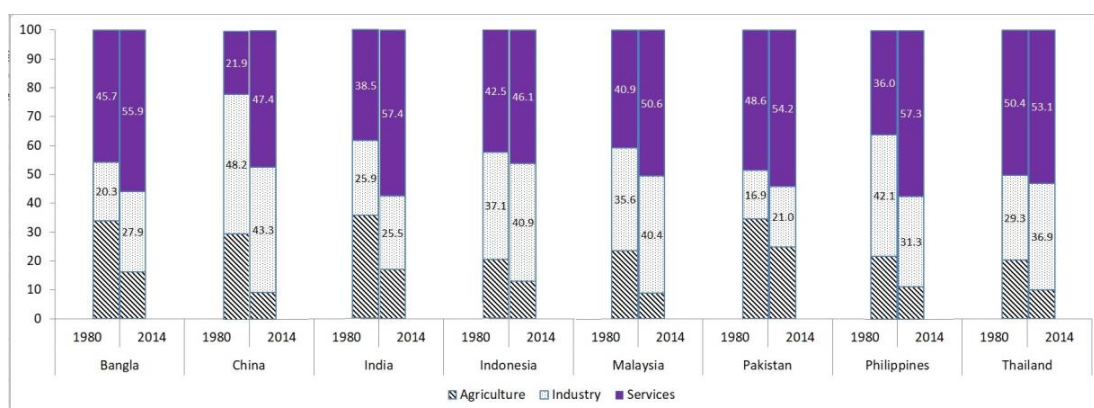
Source: Authors' computations from APO database.

Figure 1b: Sectoral Shares in GDP of Developed Asia-Pacific over 1980-2014
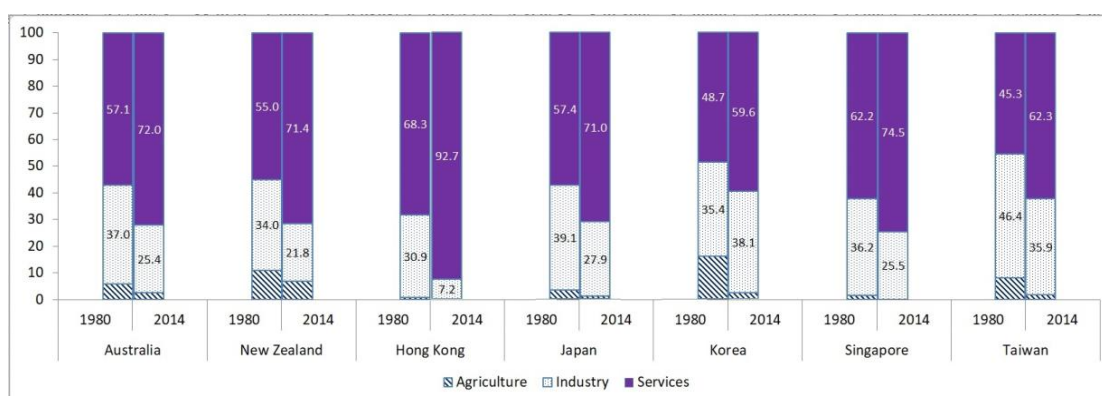
Source: Authors' computations from APO database (2017).

Figure 2: Economic Sectors and their Components
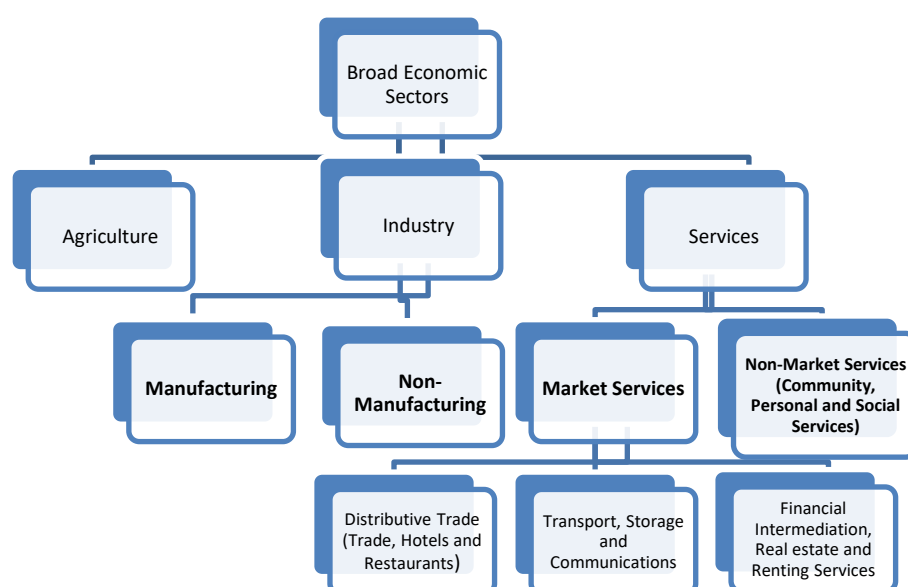
Labour Productivity Level (GDPMN$ per thousand persons) in Developing Asia-Pacific Economies

Figure 3a: Industry Sector
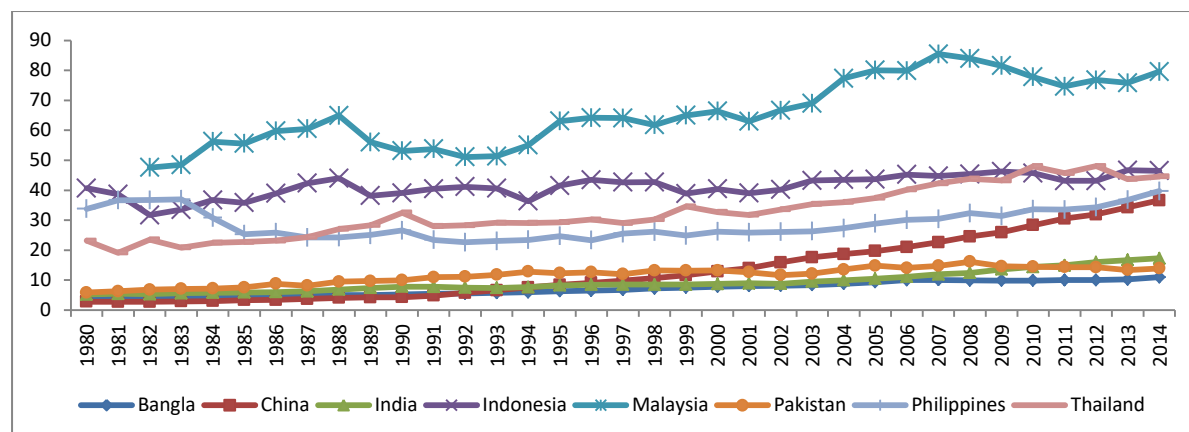
Source: Authors' computations from APO (2017) database.

Figure 3b: Manufacturing Sector
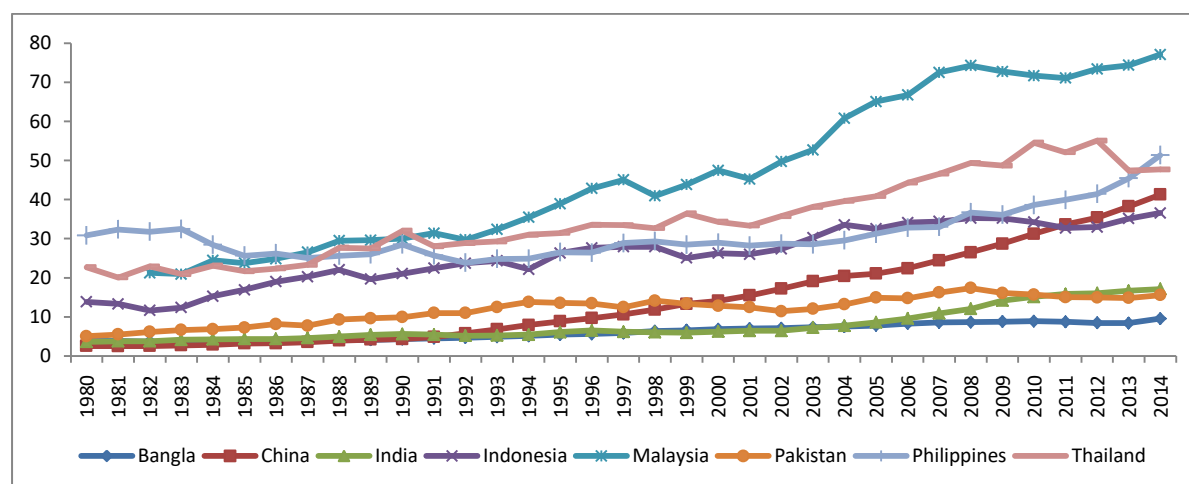
Source: Authors' computations from APO (2017) database.
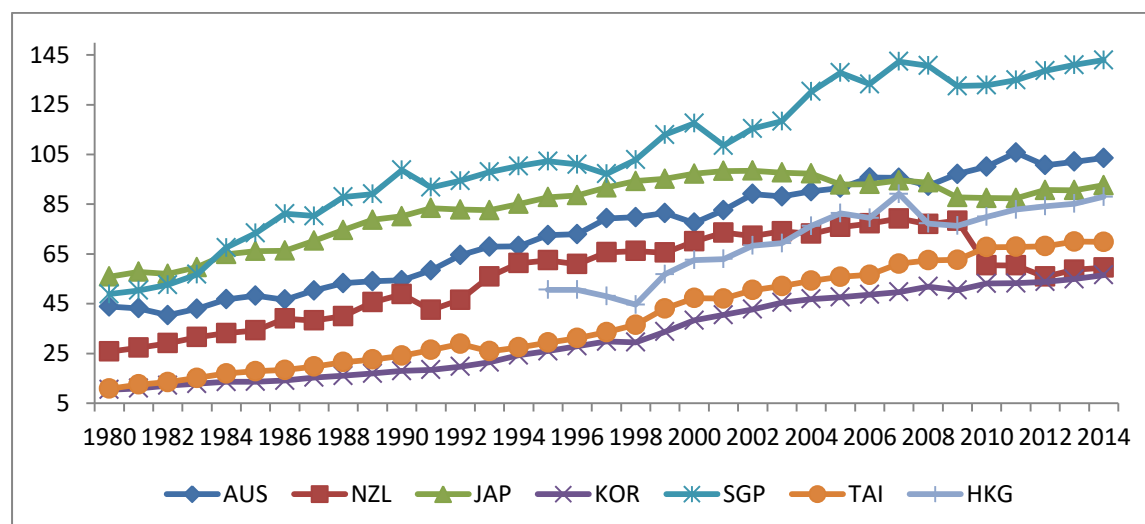
Figure 3c: Aggregate Services Sector
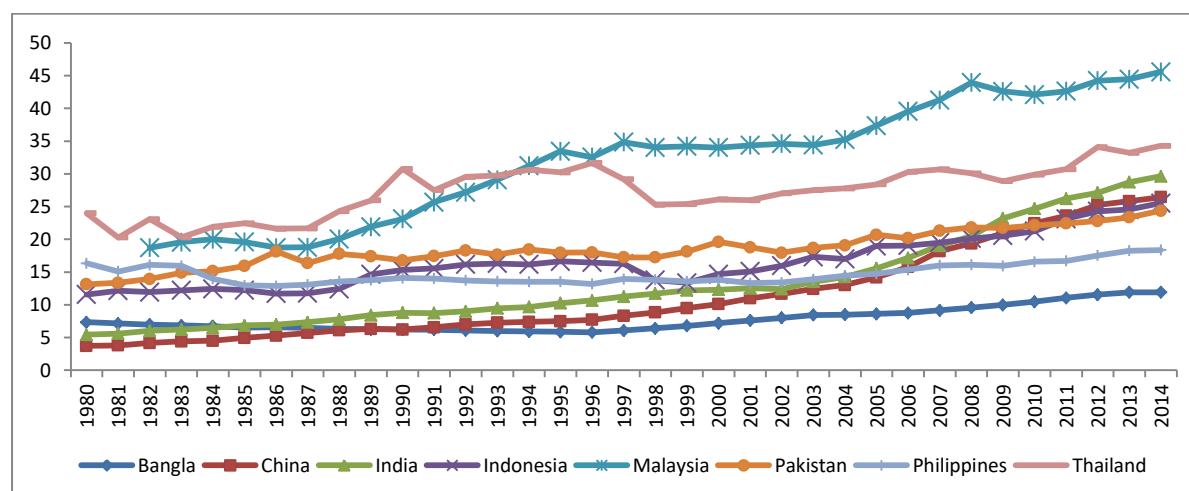
Source: Authors' computations from APO (2017) database.
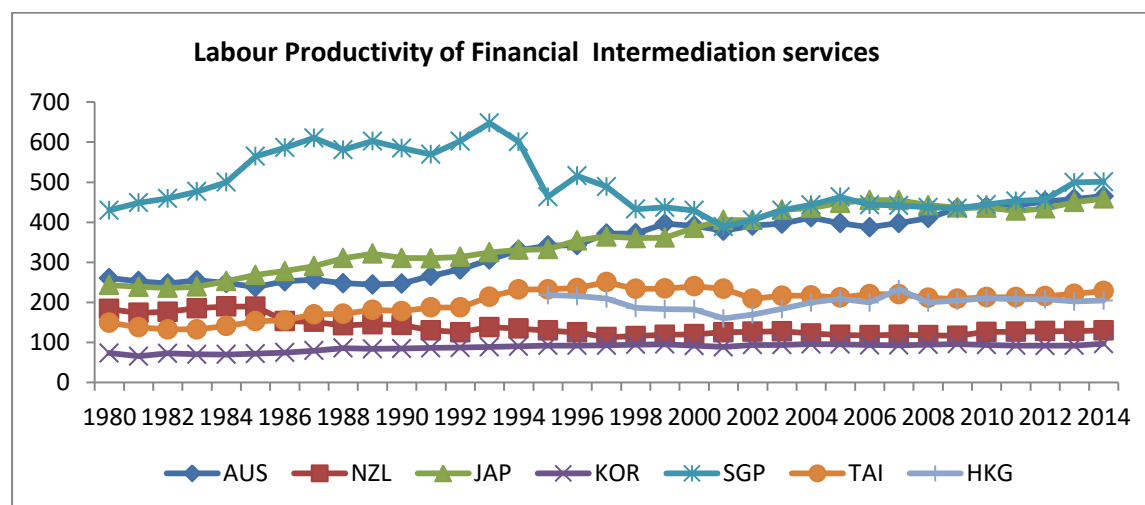
Figure 3d: Distributive Trade Services
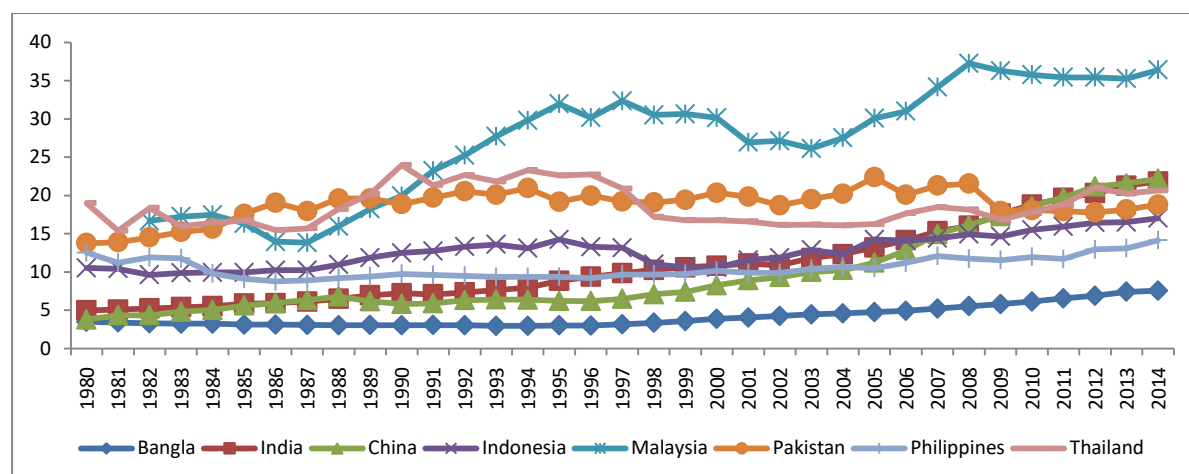
Source: Authors' computations from APO (2017) database.

**Figure 3e: Transport and Communications**
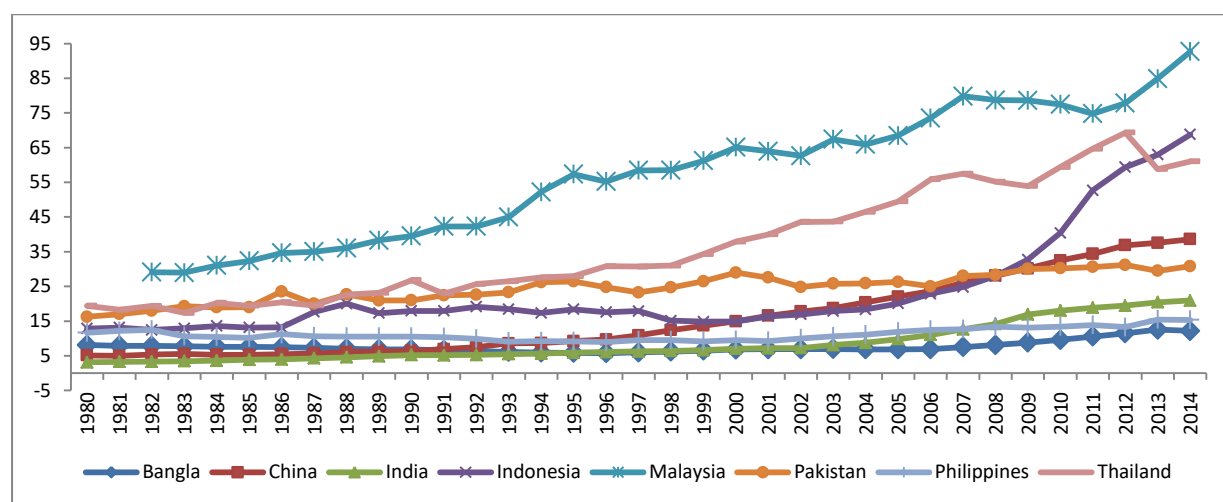
Source: Authors' computations from APO (2017) database.

Figure 3f: Financial Intermediation, Real estate and Renting Services
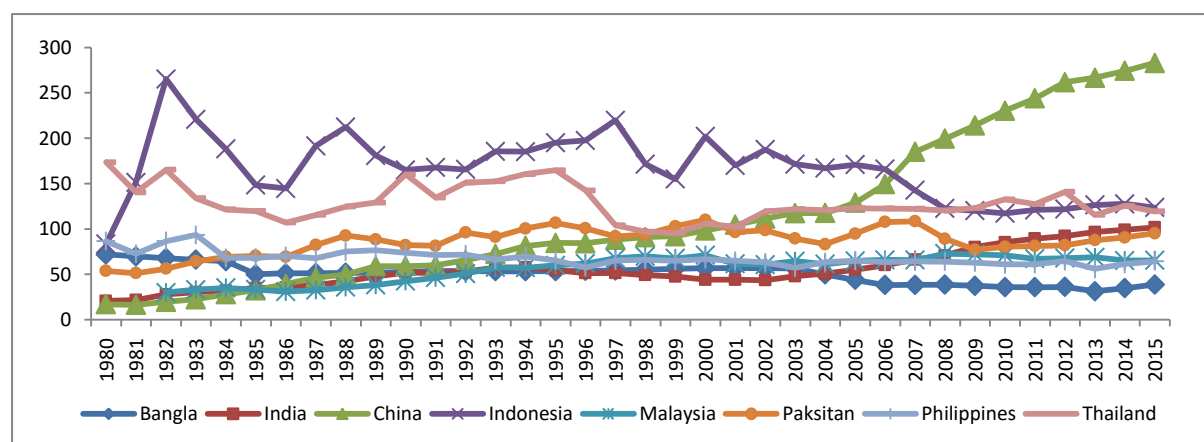
Source: Authors' computations from APO (2017) database.

Labour Productivity Level (GDPMN$ per thousand persons) Developed Asia-Pacific Countries

Figure 4a: Industry Sector
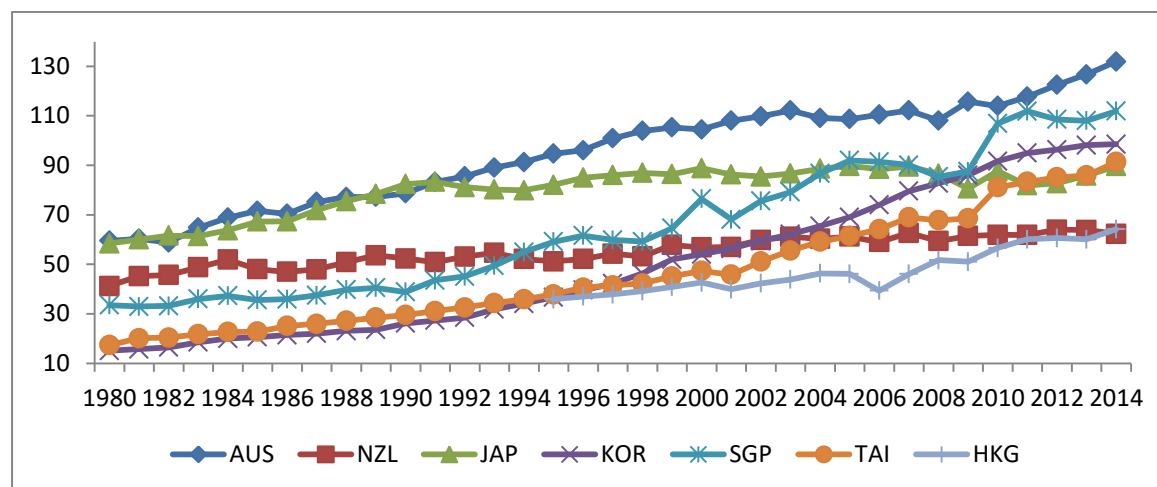
Source: Authors' computations from APO (2017) database.

Figure 4b: Manufacturing Sector
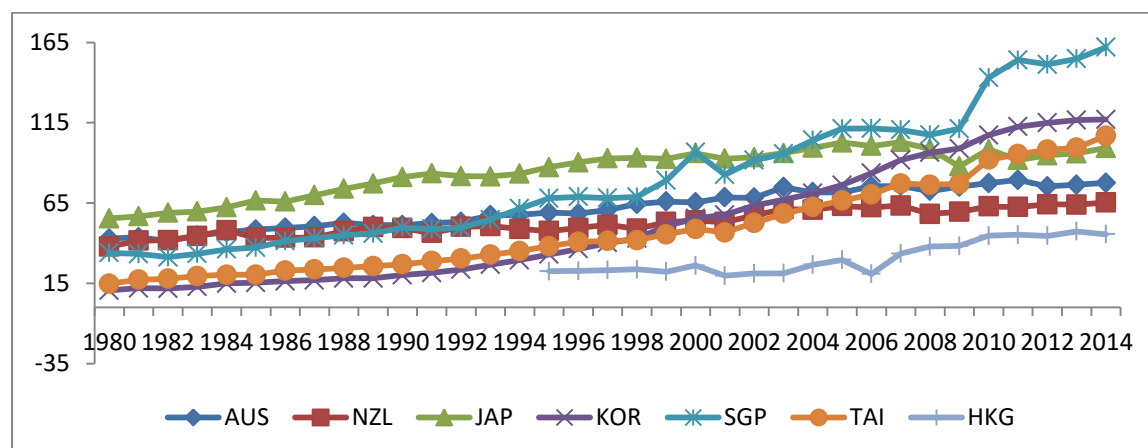
Source: Authors' computations from APO (2017) database.

Figure 4c: Aggregate Services Sector

Source: Authors' computations from APO (2017) database

Source: Authors' computations from APO (2017) database.

Figure 4e: Transportation and Communications sector

Source: Authors' computations from APO (2017) database.

Figure 4f: Financial Intermediation, Real Estate and Renting Services
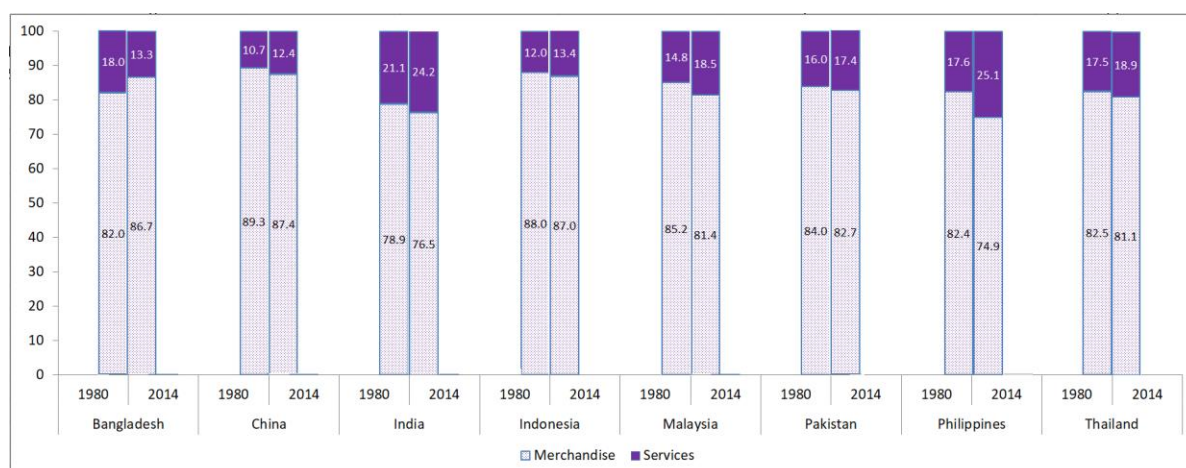

Source: Authors' computations from APO (2017) database.

Figure 5a: Relative shares of Merchandise and Services in total trade in Developing Asia-Pacific over 1980-2014
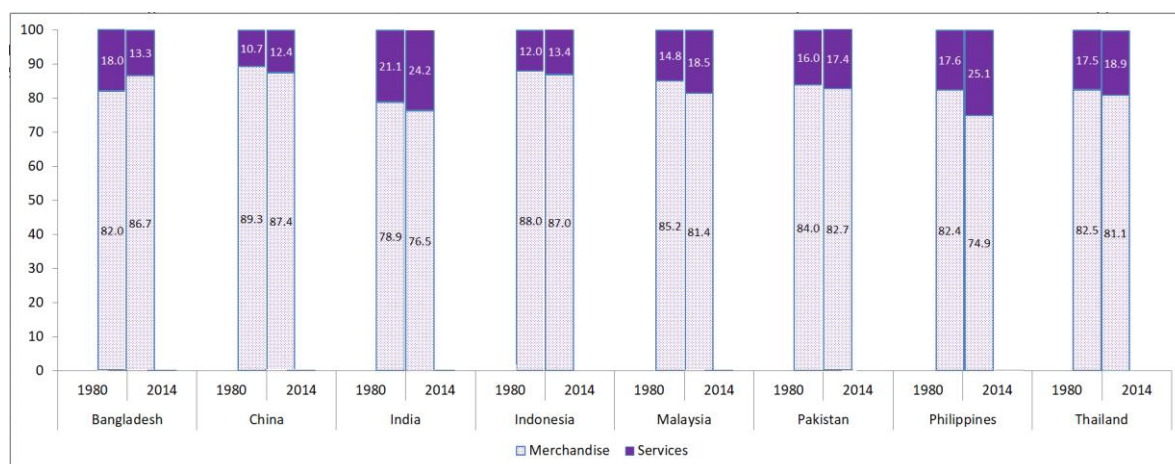
Source: Authors' computations from UNCTAD Stat.

Figure 5b: Developed Asia-Pacific over 1980-2014

Source: Authors' computations from UNCTAD Stat.