Is there such a thing like export sophistication index?

A comment on WangWeiWong (WWW) paper

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Key points of the WWW paper

- Exp sophistication indexes (ESI) in HHR (2007)
- Alternative ESI
- Econometric work w/ alternative ESI
- Conclusion: no strong and robust evidence for leapfrogging growth strategy

Focus of my comment

- Examine existing and modified ESI
- Ask: Is there such a thing like ESI at all?

Existing ESI w/ a common underlying assumption:

Detailed HS codes to reflect key product differentiations

$$PRODY_i = \sum_k^n \frac{s_{ik}}{\sum_j s_{ij}} * Y_k \qquad EXPY_k = \sum_i s_{ik} * PRODY_i$$

$$ESI_{rft} = 100 * Min(\sum_i s_{irt}, s_{it}^{ref})$$

$$EDI_{rft} = 100 * \sum_i abs(s_{irt} - s_{it}^{ref})$$

HS codes

Table 2: Ratios of unit values between US exports to and imports from China of ATP

Year	No of HS10 lines	less than 1	between 1~10	between 10~100	over 100	percentage over 1
1996	134	16	49	42	27	88.1
1997	151	25	65	42	19	83.4
1998	146	20	50	49	27	86.3
1999	151	18	62	49	22	88.1
2000	159	23	51	63	22	85.5
2001	165	30	58	56	21	81.8
2002	167	28	61	57	21	83.2
2003	167	26	65	55	21	84.4
2004	174	30	68	57	19	82.8
2005	189	28	75	62	24	85.2
2006	193	19	88	68	18	90.2

Source: drawn from Table 11 in Ferrantino et al (2008)

HS codes

- the average unit value of US ATP exports to China is in the range of 1 million US dollars, while the average unit value of its ATP imports from China lies mostly below $1,000 ($536 in 2006)

Only solution

- Keep refining HS codes
- Theoretically possible
  but practically difficult

Modified ESI

$$PRODY_i = \sum_k^n \frac{s_{ik}}{\sum_j s_{ij}} * Y_k * \frac{v_{ik}}{v_{iG3}} \qquad EXPY_k = \sum_i s_{ik} * PRODY_i$$

Lower ESI, but no better product differentiation

- 3 ESI based on US and OECD lists:

  (1) narrow (92), (2) broad (157), and

  (3) unit value cutoffs (84): narrow the list, but no better product differentiation

Summary

- No such an thing like an ESI !

- Could we develop an index based on unit value?

  No, because that would be a price index.