Discussion of: International Risk Sharing in the Long Run and in the Short Run

by Marianne Baxter

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The contribution

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- This paper proposes a simple but natural way of measuring risk sharing at different time horizons
- The most intriguing finding of the paper is that for all couple of countries analyzed

$$corr(c_{t+k} - c_t, c^*_{t+k} - c^*_t)$$

raises with k, which is interpreted as countries doing a better job in sharing long run risk.

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- Appealing because if we could only share one risk the long run is the one we should be sharing
- Puzzling because sharing long run risk cannot be achieved with simple bonds (Baxter and Crucini) and not even with more assets with limited enforcement (Kehoe and Perri)

Outline

- An explicit model of long and short run risk
- Are long run risks really shared?
- Conclusions

Long and Short Run Risks

$$
\begin{aligned}
y_t &= z_t + \varepsilon_t, \qquad y_t = z_t^* + \varepsilon_t^* \\
z_t &= z_{t-1} + \eta_t, \qquad z_t^* = z_{t-1}^* + \eta_t^* \\
Corr(\varepsilon, \varepsilon^*) &= Corr(\eta, \eta^*) = 0
\end{aligned}
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i.e. same international risk in the long and short run

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Consider two polar cases

- Sharing only the long run risk

$$c_t = \frac{z_t + z_t^*}{2} + \varepsilon_t, \qquad c_t^* = \frac{z_t + z_t^*}{2} + \varepsilon_t^*$$

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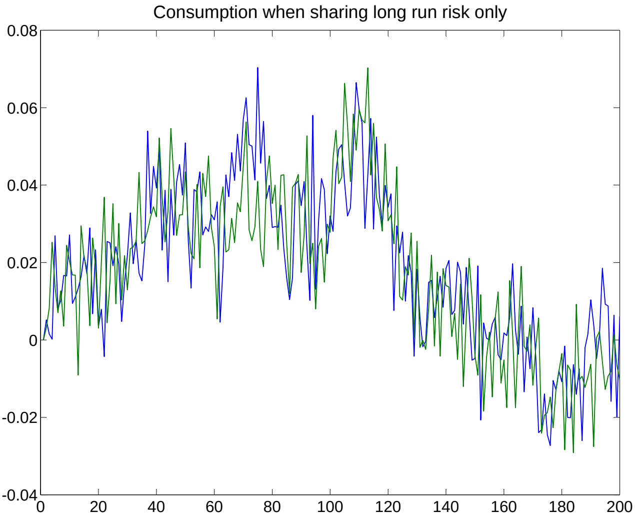
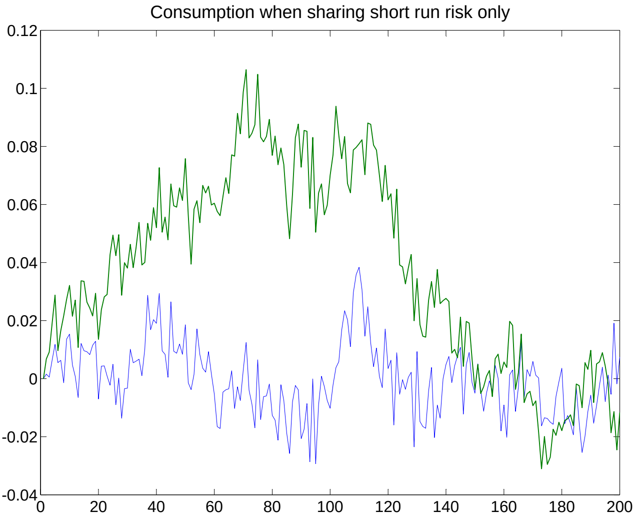
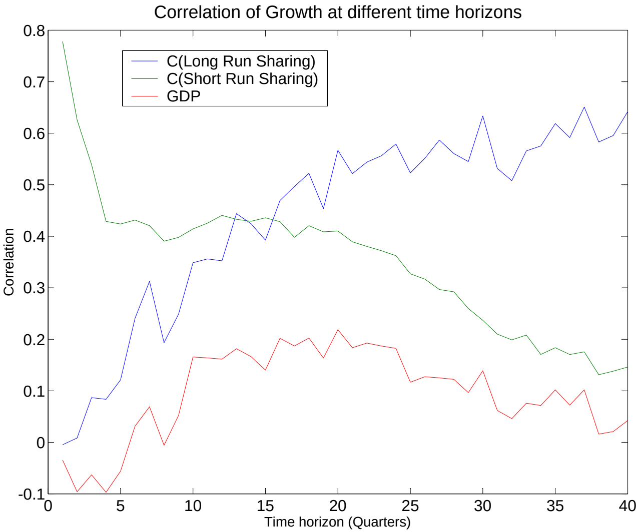
$$c_t = \frac{\varepsilon_t + \varepsilon_t^*}{2} + z_t, \qquad c_t^* = \frac{\varepsilon_t + \varepsilon_t^*}{2} + z_t^*$$


Consumption when sharing long run risk only
0.08
0.06
0.04
0.02
0
-0.02
-0.04
0
20
40
60
80
100
120
140
160
180
200


Consumption when sharing short run risk only
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
0
20
40
60
80
100
120
140
160
180
200


Correlation of Growth at different time horizons
C(Long Run Sharing)
C(Short Run Sharing)
GDP
Correlation
Time horizon (Quarters)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
5
10
15
20
25
30
35
40

A more general test

- Rather than just looking at consumption correlation at different horizons

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- Look at **difference** between consumption and output correlation at different horizons

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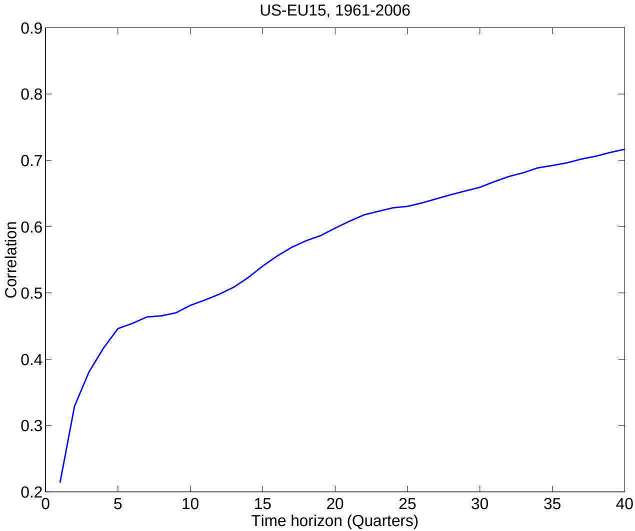
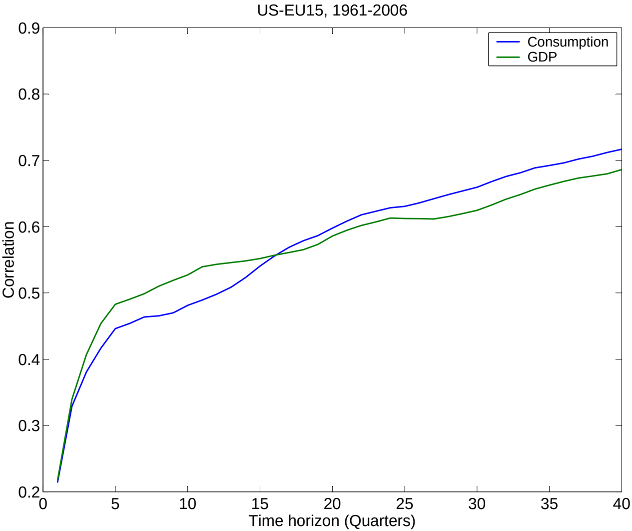
- Rather than just looking at consumption correlation at different horizons
- Look at **difference** between consumption and output correlation at different horizons
- Risk sharing picture changes quite dramatically



US-EU15, 1961-2006
Correlation
Time horizon (Quarters)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0
5
10
15
20
25
30
35
40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0.9
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0
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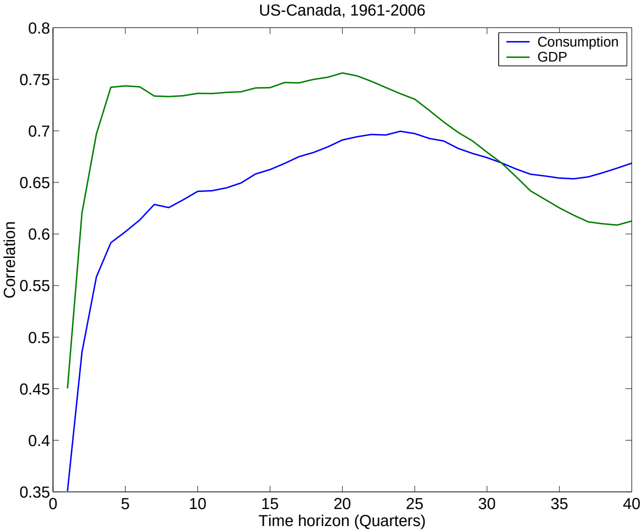
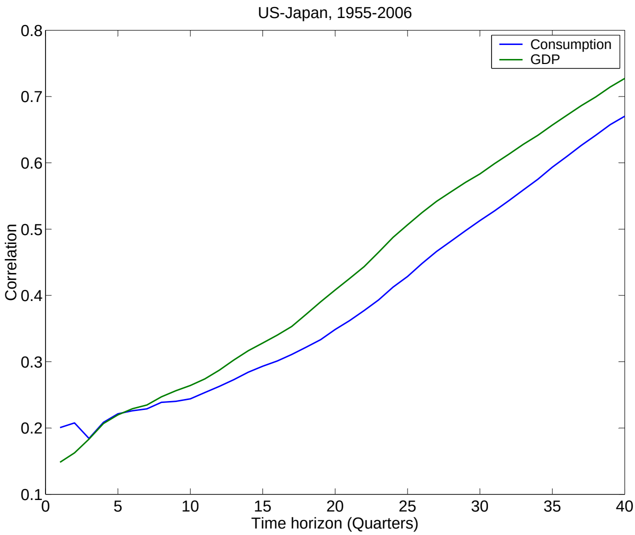
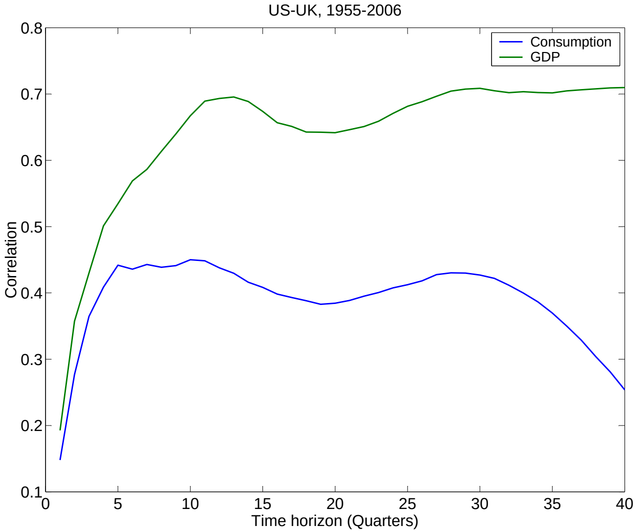
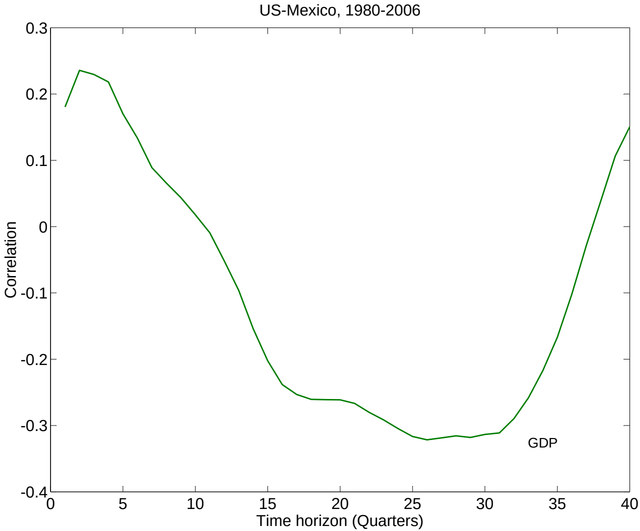
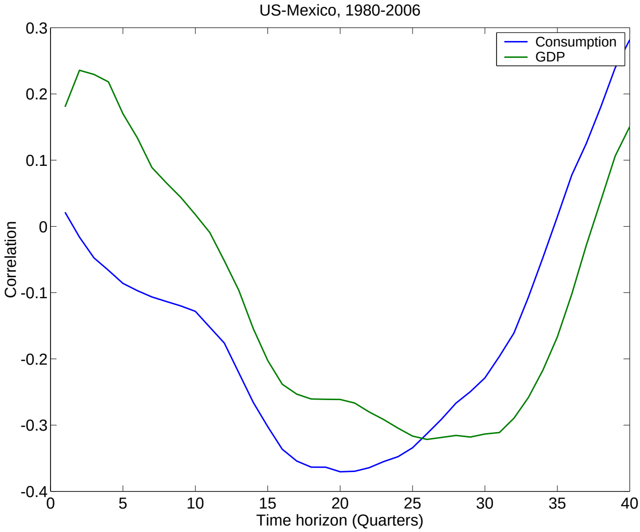
15
20
25
30
35
40
Time horizon (Quarters)


US-Canada, 1961-2006
Consumption
GDP
Correlation
0.35
0.4
0.45
0.5
0.55
0.6
0.65
0.7
0.75
0.8
0
5
10
15
20
25
30
35
40
Time horizon (Quarters)


US-Japan, 1955-2006
Consumption
GDP
Correlation
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
5
10
15
20
25
30
35
40
Time horizon (Quarters)


US-UK, 1955-2006
Consumption
GDP
Correlation
Time horizon (Quarters)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
5
10
15
20
25
30
35
40


US-Mexico, 1980-2006
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
Correlation
0
5
10
15
20
25
30
35
40
Time horizon (Quarters)
GDP


US-Mexico, 1980-2006
Consumption
GDP
Correlation
0.3
0.2
0.1
0
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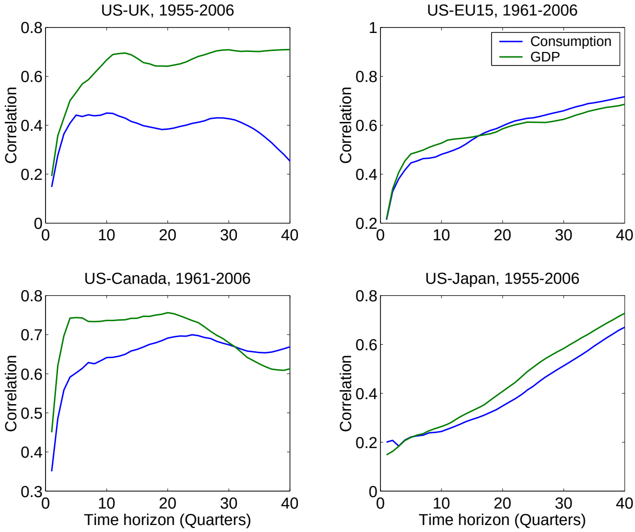
-0.2
-0.3
-0.4
0
5
10
15
20
25
30
35
40
Time horizon (Quarters)

US v/s developed countries



How is risk really shared?

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- Maybe the way countries share risk (deep shocks) shows up in income not in consumption:
- Demand spillovers, Technology Transfers, Price Effects, Common components (Colacito, 06)
- Still a lot of risk to be shared (especially with developed countries)

Conclusions

- Macroeconomists like to use consumption co-movements to test international risk sharing

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- This paper forcefully argues that we should look at co-movement at different frequencies and propose a simple way of doing so
- Make us really think about long run risk (which are the one which matter the most) and how they are shared