

How retailers of telecommunications services have passed through changes in regulated wholesale copper prices to retail prices for residential consumers

A study under section 9A of the Telecommunications Act

The Commission: Dr Stephen Gale
 Elisabeth Welson
 Dr Jill Walker

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Introduction

Purpose of this paper

1. This paper reports on a study undertaken to understand how retailers of telecommunications services (retailers) have passed through price changes in regulated wholesale copper prices to retail prices charged to residential consumers purchasing fixed-line services. We call this study, conducted under section 9A of the Telecommunications Act 2001 (Act), the wholesale pass-through study.
2. We engaged Schiff Consulting (Schiff) to estimate the extent to which retailers have passed through price changes in regulated wholesale copper services to retail prices.
3. This paper should be read along with Schiff's technical report (Schiff report), which we have also released today.¹ This paper informs residential consumers and other stakeholders about the conclusions we draw from Schiff's technical report.

Purpose and conclusion of this section 9A study

4. As part of our monitoring role, we want to better understand competition at the retail level. To do this we considered the effect of changes in wholesale broadband prices on retail prices for fixed-line services.
5. Although we only regulate wholesale telecommunications services, considering how our wholesale pricing decisions have affected retail prices allows us to understand the impact of our decisions on residential consumers.
6. Overall, our study provides evidence that residential consumers of copper broadband services are benefiting from the pass-through of a reduction in regulated wholesale copper prices as a result of our copper pricing decisions.

Scope of our study and data used

7. Since the 2011 amendments to the Act,² significant changes in regulated wholesale copper prices have arisen out of our final pricing review determinations for the UCLL and UBA services.³ The two components of total wholesale broadband price are the unbundled copper local loop (UCLL) price and the unbundled bitstream access (UBA) additional costs, as explained in further detail at paragraph 19.
8. This study has focused on fixed-line telecommunications services only, and how retailers have passed through changes in prices for the UCLL service and the UBA additional costs component. We refer to UCLL and UBA additional costs in aggregate

¹ Schiff Consulting. Aaron Schiff, 24 May 2017 "Pass-through analysis for fixed-line telecommunication services" Prepared for the New Zealand Commerce Commission.

² The Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011 required us to review the UCLL STD for the purpose of implementing geographically averaged prices; and review the UBA STD for the purpose of implementing the new cost-based pricing principles. We also decided to undertake a re-benchmarking review of the UCLL STD prices.

³ Final pricing review determination for Chorus' unbundled copper local loop service [2015] NZCC 37; Final pricing review determination for Chorus' unbundled bitstream access service [2015] NZCC 38.

as the total UBA service. The price for the total UBA service is the sum of the prices for the UCLL service and UBA additional costs.

9. The period for this study is March 2012 to June 2016. This timeframe captures the period from when our UCLL and UBA pricing decisions took effect to the start of our analysis around June 2016.
10. We obtained a sample of approximately 80,000 bills sent to residential consumers from the three largest retailers in New Zealand: Vocus Communications Limited (Vocus), Vodafone New Zealand Limited (Vodafone), and Spark New Zealand Limited (Spark). These three retailers together comprise over 80% of the fixed-line retail broadband services market.⁴
11. This sample of bills formed an extensive dataset containing information about residential consumers' actual purchases of, and payments for, retail fixed-line copper services.⁵ The services included in the sample were naked broadband and bundled broadband (broadband and voice).⁶
12. Schiff used regression models using this billing dataset to estimate how amounts paid by residential consumers have changed in response to changes to the regulated wholesale copper prices.
13. We used billing data because it provides us with a more accurate picture of the actual prices residential consumers paid. The alternative approach of using advertised retail prices may not reflect the average prices consumers actually paid. For example, retailers can provide discounts for bundles of services (eg, phone and broadband) or give discounts to new customers.
14. We would like to thank Vocus, Vodafone, and Spark for their cooperation in providing the billing data to the Commerce Commission.

Structure of this paper

15. This report is structured as follows:
 - 15.1 Section 1 explains how retailers use the regulated wholesale copper services.
 - 15.2 Section 2 outlines the changes to regulated wholesale copper prices during the study period; and
 - 15.3 Section 3 explains the conclusions we have drawn from Schiff's report.

⁴ The 80% figure is based on the share of total broadband connections for residential customers as at October 2016. Gathering and analysing billing data about the remaining retail market would have been unnecessarily complex and costly.

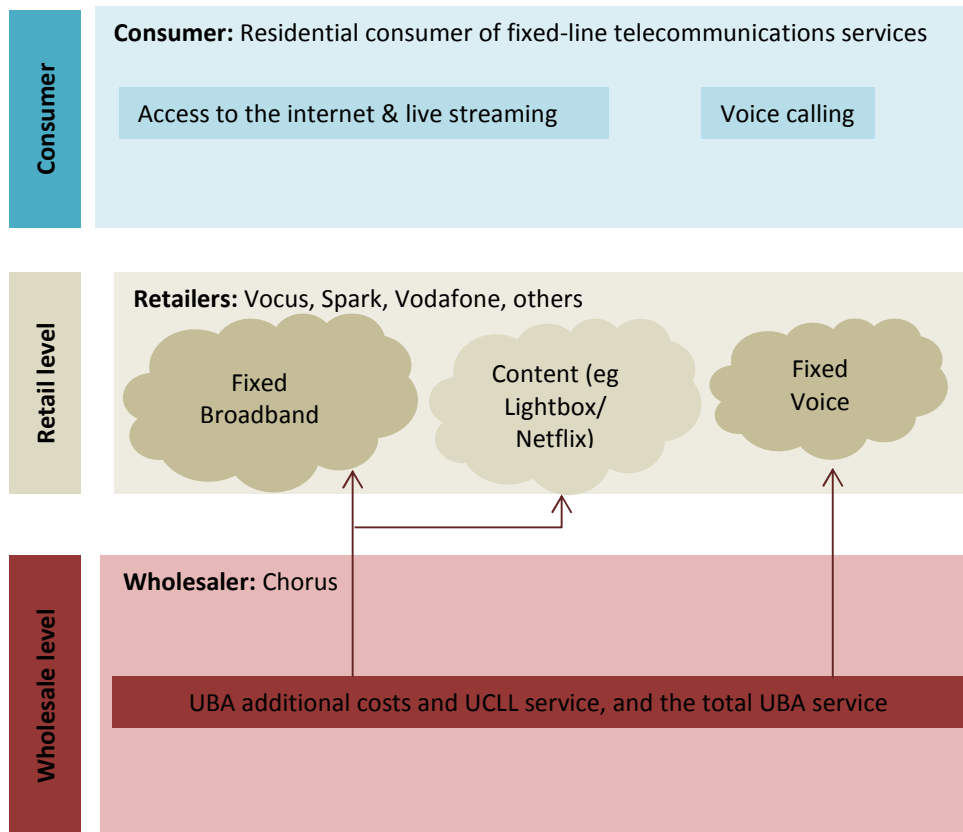
⁵ We asked the retailers to exclude all personally identifying information from the data provided to us, such as customers' names, addresses, phone numbers, and account numbers.

⁶ The sample excluded voice-only services.

How retailers use the regulated wholesale copper services

16. Retailers use regulated wholesale copper services to supply fixed-line retail services to residential consumers. Figure 1 below shows how they provide these services.

Figure 1: An illustration of how retailers use wholesale copper services to supply fixed-line services to residential consumers



17. At the *consumer level*: residential consumers of fixed-line copper services most commonly need voice calling, access to the internet, and live streaming. Residential consumers can purchase broadband services in a number of ways, including by purchasing a fixed-line broadband service or a mobile broadband service. This study focused only on fixed-line services.
18. At the *retail level*: retailers supply different services or plans to satisfy residential consumers' needs. Retailers offer broadband, voice, and content services, either as separate plans to consumers, or in bundles.
19. At the *wholesale level*: regulated wholesale inputs are required to supply broadband services and retail fixed-line voice services.⁷ The total UBA service enables retailers to provide broadband services to consumers without having to invest in their own exchange-based equipment. This service has two main components:

⁷ Retailers must also purchase other inputs (regulated and non-regulated) such as transportation and international connectivity to provide retail telecommunications services.

- 19.1 **the UCLL component** represents the network infrastructure used to connect residential consumers' homes and workplaces to Chorus' local telephone exchange buildings. The UCLL service provides access to the local loop between residential consumers' premises and Chorus' local exchanges; and
- 19.2 **the UBA additional costs component** represents the electronic equipment, software, and other additional infrastructure needed to provide the regulated UBA service over Chorus' copper network.
20. Retailers can also use the UCLL service, along with their own equipment located in the local exchange, to provide voice and broadband services to residential consumers. The UCLL price is paid on unbundled lines. Currently, there are about 98,000 unbundled lines, while the total UBA price applies to about one million lines.⁸

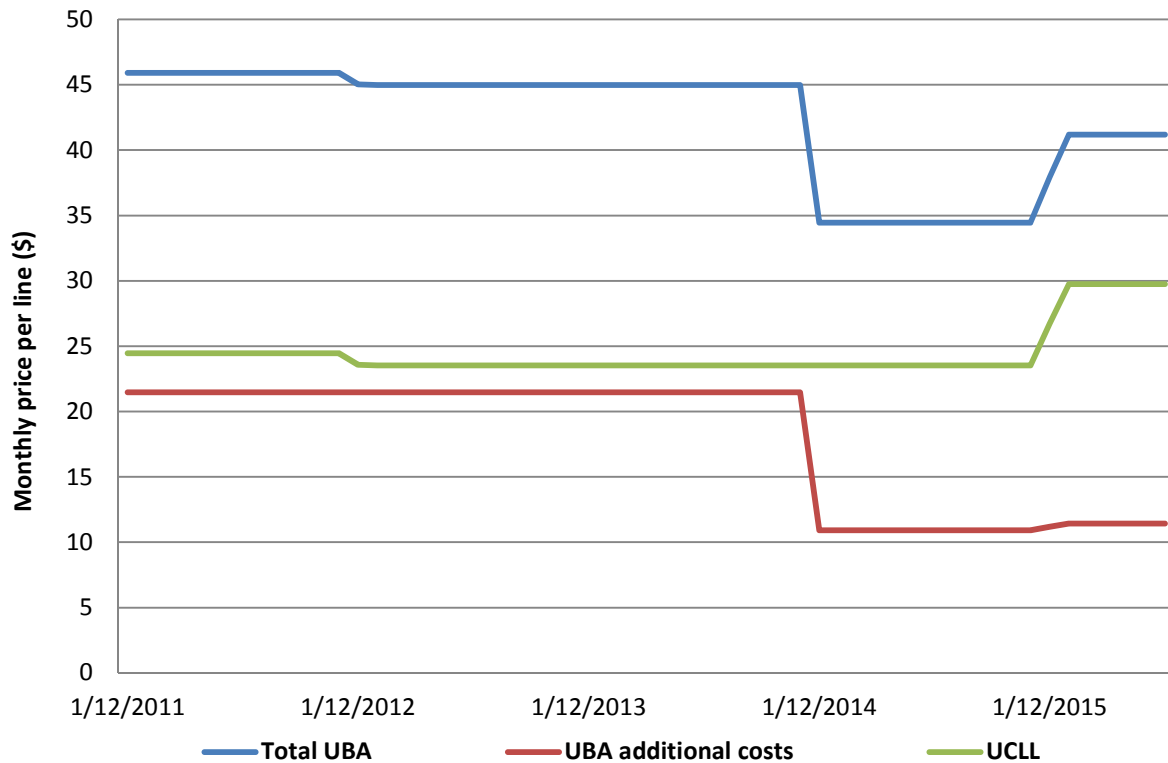
Changes in regulated wholesale copper prices

21. We are required to set prices for Chorus' UBA additional costs and UCLL service. There are two stages. First is to undertake a review of the price using an initial pricing principle (IPP) based on international benchmarks. Secondly, only if parties make an application, the price is reviewed using a final pricing principle (FPP).⁹ That involves creating a cost model of providing the service in New Zealand.
22. UBA and UCLL are significant input costs to retailers delivering voice and broadband services over copper lines to residential consumers. Regulated wholesale copper prices are likely to comprise around 50% of retail prices for copper fixed-line broadband and voice services.
23. Figure 2 below illustrates the changes in the regulated wholesale copper prices:
- 23.1 wholesale prices based on pre-existing price determinations (ie, prior to 1 December 2014);
- 23.2 IPP price determinations (ie, prices that took effect from 1 December 2014 based on an IPP); to
- 23.3 FPP price determinations (ie, prices that took effect from 15 December 2015 based on a FPP).

⁸ Commerce Commission "Section 30R review of Chorus' Unbundled Bitstream Access service [2017] NZCC 4" 14 March 2017, paragraphs [46] and [60].

⁹ The Act requires us to set an initial pricing principle (IPP) price first. The IPP price provides a fast-track approximation of the price that would be set under the FPP. Parties can then request that we determine a cost-based price based on a FPP. In relation to each service, the applicable IPP and FPP is set out in subpart 1 of Part 2 of Schedule 1 of the Act. The FPP prices was set by the following determinations: Final pricing review determination for Chorus' unbundled copper local loop service [2015] NZCC 37; Final pricing review determination for Chorus' unbundled bitstream access service [2015] NZCC 38.

**Figure 2: Changes in regulated wholesale copper prices, March 2012 to June 2016
(monthly price, per line)¹⁰**



Source: Commerce Commission

24. Figure 2 illustrates the following changes in the price for the UBA additional costs component:
- 24.1 Until 1 December 2014, the UBA price was grandfathered at \$21.46 per line, per month.¹¹ This price for the UBA additional cost component was based on a retail-minus pricing principle.¹²
- 24.2 The UBA additional costs IPP price took effect from 1 December 2014. This price was based on a cost-based pricing principle. We determined the UBA IPP price at \$10.92 per line, per month.¹³ This change was a significant reduction of \$10.54 compared to the price prior to 1 December 2014 (\$21.46).

¹⁰ Prior to December 2014, the UCLL prices were determined for both urban and non-urban areas respectively. However, for purposes of this study, Schiff's report only considered the geographic average price, as there was no indicator in the billing data whether a residential consumer is an urban or non-urban consumer. For this reason, Figure 1 only reflects the geographically averaged price for UCLL for the total study period.

¹¹ Telecommunications (TSO, Broadband, and Other Matters) Amendment Act 2011, section 79.

¹² Schedule 2 of the Act, Chorus's unbundled bitstream access, Initial pricing principle applicable before the expiry of 3 years from separation day.

¹³ Commerce Commission "Unbundled Bitstream Access Service Price Review, Decision [2013] Final determination to amend the price payable for the regulated service Chorus' unbundled bitstream access made under section 30R of the Telecommunications Act 2001" (5 November 2013), NZCC 20, paragraph [7].

- 24.3 We determined the UBA additional costs FPP price in December 2015 at \$11.44 per line, per month.¹⁴ The UBA additional costs FPP price was reduced by \$10.02 compared to the price prior to 1 December 2014 (\$21.46).
25. Figure 2 also illustrates the price changes in the UCLL service:
- 25.1 Prior to December 2014, the UCLL IPP price was updated on 3 December 2012, which led to a small reduction in the UCLL price.¹⁵ Under this review we updated the monthly non-urban and urban UCLL prices to \$35.20 and \$19.08 respectively, with the prices to come into effect immediately and applying until 30 November 2014.¹⁶
- 25.2 We determined the UCLL FPP price in December 2015 to be \$29.75 per line, per month.¹⁷ The UCLL FPP price led to a relatively large increase in the UCLL price of \$6.23 per line, per month compared to the pre-existing UCLL price (\$23.52).
26. Figure 2 further shows the price changes for the total UBA price (the price is the sum of two parts, namely the price for the UCLL component and the price for the UBA additional costs component):
- 26.1 until December 2014, the price for the total UBA price was \$44.98;
- 26.2 we determined the total final UBA price in December 2015 at \$41.19; and
- 26.3 the overall net effect was a price reduction of \$3.80 per line, per month as a result of our wholesale pricing decisions from the pre-existing price to FPP.¹⁸

Conclusions we draw from Schiff's report

27. The key conclusions we draw from Schiff's report are:
- 27.1 Overall, the study provides evidence that consumers are benefiting from pass-through of a reduction in wholesale copper prices as a result of our wholesale copper pricing decisions. Schiff's report suggests that most of the changes in the regulated wholesale copper prices were passed on to residential consumers.
- 27.2 Retailers are likely to have also passed through some of the wholesale price reductions in ways other than lower retail prices.

¹⁴ Commerce Commission "Final pricing review determination for Chorus' unbundled bitstream access service" (15 December 2015), paragraph [4].

¹⁵ Commerce Commission "Final determination on the benchmarking review of the unbundled copper local loop service" (3 December 2012), NZCC 37.

¹⁶ As part of this study Schiff only considered the geographic average price, as there was no indicator in the billing data whether a residential consumer is an urban or non-urban consumer.

¹⁷ Commerce Commission "Final pricing review determination for Chorus' unbundled copper local loop service" (15 December 2015), paragraph [4].

¹⁸ Pre-UBA IPP: \$23.52 + \$21.26 = \$44.98 compared to FPP: \$29.75 + \$11.44 = \$41.19.

- 27.3 The degree of pass-through is different between the three largest retailers in response to the wholesale price changes.
28. We note that Schiff has pointed to limitations in its analysis which, by its nature, cannot be definitive.¹⁹
29. We discuss each of these conclusions in more detail below.

There was almost complete pass-through of the wholesale copper price changes

30. Schiff empirically estimated how retailers have passed through the wholesale copper price changes for each component of the total UBA service, ie, UCLL and UBA additional costs, as well as the pass-through of the price change for the total UBA service.
31. We discuss how retailers have passed through wholesale price changes to retail prices for each regulated service below.

Pass-through of the price reduction in the total UBA service

32. Schiff's analysis shows that reductions in the total UBA price charged by Chorus as a result of our price determinations have been largely passed on to residential consumers.
33. Schiff's best estimate is that 90% of the overall price change in the total UBA service price was passed through to residential consumers in average prices.
34. This means that, in response to the \$3.80 decrease in the total UBA price (ie, \$44.98 (pre-existing price) minus \$41.19 (FFP price)), the average retail price decreased by around \$3.40 per line, per month over the study period.

Pass-through for each component of the total UBA service

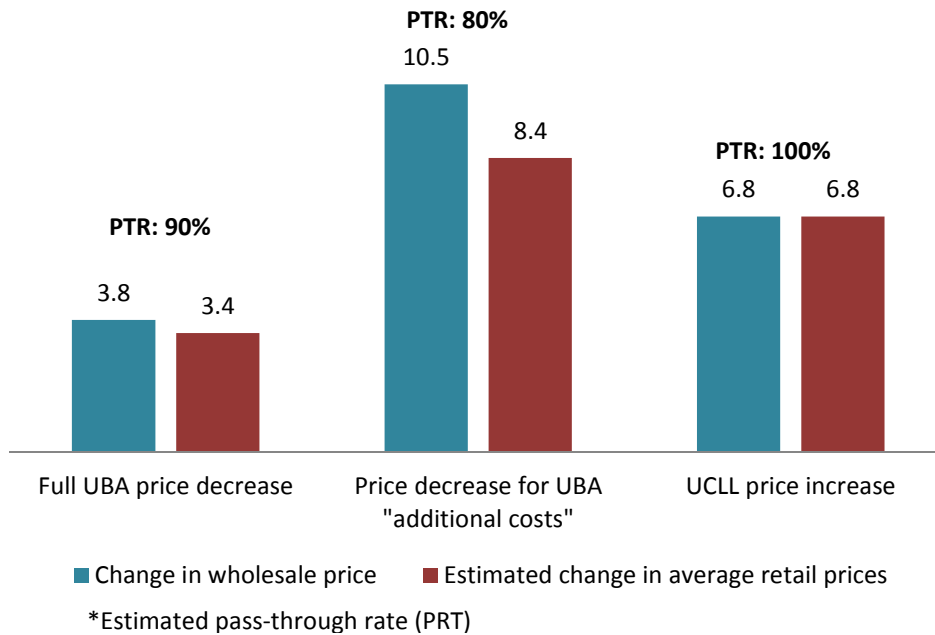
35. Schiff also estimated the extent of pass-through for the separate components of the total UBA service (ie, UCLL and UBA additional costs). Schiff's estimated pass-through rates for the separate components are consistent with the pass-through rate estimated for the total UBA price.
36. The best estimate for the pass-through rate for UCLL is 100%. In response to the \$6.23 increase (ie, \$23.52 (averaged price prior to 1 December 2014 pre-existing price) minus \$29.75 (FPP price)), the average retail price increased by \$6.23.
37. The best estimate for the pass-through rate for UBA additional costs is 80%, implying that 80% of the price drop in UBA additional costs component was passed through to residential consumers over the study period.

¹⁹ For example, there is not a lot of variation in UCLL or UBA prices; changes in the regulated wholesale prices are small relative to the range of variation in retail prices; treatment of quality is simplistic and not all cost drivers can be directly observed. This resulted in wide confidence intervals.

Summary of changes in average retail prices based on Schiff's estimated pass-through rates

38. Figure 3 below summarises the estimated pass-through rate for each of the regulated wholesale copper services. Assuming this estimated pass-through rate, Figure 3 also shows the effect on the average retail prices in response to the wholesale price changes for each regulated wholesale service.

Figure 3: Changes in average retail prices in response to changes in wholesale prices, March 2012 to June 2016 (\$ per line, per month)



Source: Commerce Commission

Why was the reduction in prices not fully passed on to residential consumers?

39. The price drop for the total UBA service, and the price drop for the UBA additional costs component were not fully passed on to consumers.
40. There are a number of possible explanations for this. For example:
- 40.1 One reason may be that retailers have passed through the price reduction in forms other than price. For example, residential consumers often purchase a bundle of services. Reductions in regulated wholesale copper prices may be passed through to consumers in the form of additions to bundles, such as Netflix or Lightbox at no additional charge. The full benefit of this offer is not captured by only observing the actual price paid.
 - 40.2 The quality of services also improved over the study period. For example, residential consumers purchase retail services at the same price but for higher speeds or increased data usage. The full benefit of this change may not be captured by only observing the price paid.
 - 40.3 The pass-through of the price drop may also be limited because of the length of retail contracts. The data used for the empirical analysis ends six months

after our FPP decision to change the regulated copper wholesale prices. Contract terms for retail fixed-line copper services can often last from 12 to 24 months. The price drop benefit of the regulated copper wholesale price change may, therefore, only be seen in more recent data after contracts expire.²⁰

- 40.4 Finally, one further aspect contributing to less than complete pass-through is the uncertainty created from the possibility of backdating in FPP decisions.²¹ If we had backdated, and the FPP prices were higher than the IPP prices, Chorus would have been compensated for the difference between the IPP and FPP prices. However, if the FPP price was lower than the IPP, backdating would have involved Chorus compensating retailers for the price difference. This uncertainty may have impacted on retailers' pricing strategies differently. Some retailers may have increased prices in anticipation of backdating happening, while others may not have dropped their prices immediately.

Schiff's report suggests some retailers had a greater pass-through than other retailers

41. Schiff's analysis also suggests that Vocus had a greater pass-through of the regulated wholesale copper price changes compared to Spark and Vodafone.
42. This provides an indication that retailers may use different pricing strategies. It seems to suggest that Vocus may have followed a simpler pricing strategy compared with other retailers. Vocus may tend to lead on price by putting input cost decreases into its retail prices. Vocus may do this in order to offer the cheapest deals, and in that way, targets consumers sensitive to price changes to build market share. Spark and Vodafone have more complex offerings for residential consumers and may be likely to pass-through changes in regulated wholesale copper prices in forms other than price.
43. The results may also suggest that customers respond differently to price changes. For example, Vocus' customers may be more likely to benefit from price reductions because they might be more price sensitive and shop around more. Given this, Vocus may be more likely to lose these customers if a reduction in wholesale prices is not passed through. In contrast, Spark and Vodafone's customers may be less likely to search if they keep getting more for their money from their current retailer, either in terms of extras to the bundles offer, such as Lightbox, or as higher speeds or data usage at the same price.

²⁰ More recent data was not available at the time when we started with the empirical analysis.

²¹ We were required to first set prices based on an IPP process, which was followed by a FPP process. In determining the FPP prices, we had to consider whether the FPP prices would take effect on 15 December 2015 (FPP decision date) or on 1 December 2014 (the date that the UBA IPP price and UCLL IPP geographically averaged price took effect). Our final decision was not to backdate prices, and that the prices took effect on 15 December 2015. See Commerce Commission "Final pricing review determination for Chorus' unbundled copper local loop service" (15 December 2015), Chapter 7; and Commerce Commission "Final pricing review determination for Chorus' unbundled copper local loop service" (15 December 2015), Chapter 7.